(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 31 October 2002 (31.10.2002)

PCT

(10) International Publication Number WO 02/085308 A2

(51) International Patent Classification7:

A61K

- (21) International Application Number: PCT/US02/13135
- (22) International Filing Date: 23 April 2002 (23.04.2002)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/286,137

24 April 2001 (24.04.2001) US

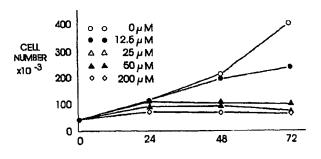
- (71) Applicant (for all designated States except US): EPIGE-NESIS PHARMACEUTICALS, INC. [US/US]; Viviana Amzel, 7 Clarke Drive, Cranbury, NJ 08512 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): NYCE, Jonathan, W. [US/US]; 1 Keithwood Court, Titusville, NJ 08560 (US). LI, Yukui [US/US]; 2024 Old Stone Mill Drive, Cranbury, NJ 08512 (US). SANDRASAGRA, Anthony [CA/US]; 60 Springwood Ct., Princeton Walk, South Brunswick, NJ 08540 (US). KATZ, Evan [US/US]; 26 Point of Woods Drive, North Brunswick, NJ 08902

(US). PABALAN, Jonathan [PH/US]; 44 Mystic Way South, Burlington, NJ 08016 (US). AGUILAR, Douglas [US/US]; 170 Clendenny Avenue, Jersey City, NJ 07304 (US). MILLER, Shoreh [US/US]; 19 Marshal Court, Plainsboro, NJ 08536 (US). TANG, Lei [US/US]; 23 Harvard Circle, Princeton, NJ 08540 (US). SHAHABUDDIN, Syed [IN/US]; 23 Carnellia Court, Newtown, PA 18940 (US).

- (74) Agent: AMZEL, Viviana; EpiGenesis Pharmaceuticals, Inc., 7 Clarke Drive, Cranbury, NJ 08512 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,

[Continued on next page]

(54) Title: COMPOSITIONS, FORMULATIONS AND KIT WITH ANTI-SENSE OLIGONUCLEOTIDE AND ANTI-INFLAM-MATORY STEROID AND/OR UBIQUINONE FOR TREATMENT OF RESPIRATORY AND LUNG DISEASE



DURATION OF DHEA TREATMENT (h)

7

(57) Abstract: A pharmaceutical composition and formulations comprise preventative, prophylactic or therapeutic amounts of an oligo(s) anti-sense to a specific gene(s) or its corresponding mRNA(s), and a glucocorticoid and/or non-glucocorticoid steroid or a ubiquinone or their salts. The agents, composition and formulations are used for treatment of ailments associated with impaired respiration, bronchoconstriction, lung allergy(ies) or inflammation, and abnormal levels of adenosine, adenosine receptors, sensitivity to adenosine, lung surfactant and ubiquinone, such as pulmonary fibrosis, vasoconstriction, inflammation, allergies, allergic rhinitis, asthma, impeded respiration, lung pain, cystic fibrosis, bronchoconstriction, COPD, RDS, ARDS, cancer, and others. The present treatment is effectively administered by itself for conditions without known therapies, as a substitute for therapies exhibiting undesirable side effects, or in combination with other treatments, e.g. before, during and after other respiratory system therapies, radiation, chemotherapy, antibody therapy and surgery, among others. Each of the agents of this invention may be administered directly into the respiratory system so that they gain direct access to the lungs, or by other effective routes of administration. A kit comprises a delivery device, the agents and instructions for its use.

VO 02/085308 A



GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

 with sequence listing part of description published separately in electronic form and available upon request from the International Bureau

Published:

 without international search report and to be republished upon receipt of that report For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

COMPOSITIONS, FORMULATIONS & KIT WITH ANTI-SENSE OLIGONUCLEOTIDE & ANTI-INFLAMMATORY STEROID AND/OR UBIQUINONE FOR TREATMENT OF RESPIRATORY & LUNG DISEASE

BACKGROUND OF THE INVENTION

Field of the Invention

5

10

30

This invention concerns itself with compositions, formulations and kits employed for the administration of active agents that are effective for treating respiratory and pulmonary diseases including bronchoconstriction, impaired airways, decreased lung surfactant, asthma, rhinitis, acute respiratory distress syndrome (ARDS), infantile or maternal RDS, chronic obstructive pulmonary disease (COPD), allergies, impeded respiration, lung pain, cystic fibrosis (CF), infectious diseases, cancers such as leukemias, lung and colon cancer, and the like, and diseases whose secondary effects afflict the lungs. The active agents, anti-sense oligonucleotides and steroid agents and/or ubiquinones may be administered preventatively, prophylactically or therapeutically as a single therapy or in conjunction with other therapies.

15 Background of the Invention

Respiratory ailments, associated with a variety of diseases and conditions, are extremely common in the general population, and more so in certain ethnic groups, such as African Americans. In some cases they are accompanied by inflammation, which aggravates the condition of the lungs. Asthma, for example, is one of the most common diseases in industrialized countries. In the United States it accounts for about 1% of all health care costs. An alarming increase in both the prevalence and mortality of asthma over the past decade has been reported, and asthma is predicted to be the preeminent occupational lung disease in the next decade. While the increasing mortality of asthma in industrialized countries could be attributable to the depletion reliance upon beta agonists in the treatment of this disease, the underlying causes of asthma remain poorly understood. Respiratory and pulmonary diseases such as asthma, allergic rhinitis, Acute Respiratory Distress Syndrome (ARDS), including that occurring in pregnant mothers and in premature born infants, pulmonary fibrosis, cystic fibrosis (CF), chronic obstructive pulmonary disease (COPD), and cancer, among others, are common diseases in industrialized countries. In the United States alone they account for extremely high health care costs, and their incidence has recently been increasing at an alarming rate, both in terms of prevalence, morbidity and mortality. In spite of this, their underlying causes still remain poorly understood.

Asthma is a condition characterized by variable, in many instances reversible obstruction of the airways. This process is associated with lung inflammation and in some cases lung allergies. Many patients have acute episodes referred to as "asthma attacks," while others are afflicted with a chronic condition. The asthmatic process is triggered in some cases by inhalation of antigens by hypersensitive subjects. This condition is generally referred to as "extrinsic asthma." Other asthmatics have an intrinsic predisposition to the condition, which is thus referred to as "intrinsic asthma," and may be comprised of conditions of different origin, including those mediated by the adenosine receptor(s), allergic conditions mediated by an immune IgE-mediated response, and others. All asthmas have a group of symptoms, which are characteristic of this condition: bronchoconstriction, lung inflammation and decreased lung surfactant. Existing bronchodilators and anti-inflammatories are currently commercially available and are prescribed for the treatment of asthma. The most common anti-inflammatories, corticosteroids, have considerable side effects but are commonly prescribed nevertheless. Most of the drugs available for the treatment of asthma are, more importantly, barely effective in a small number of patients.

Acute Respiratory Distress Syndrome (ARDS), or stiff lung, shock lung, pump lung and congestive atelectasis, is believed to be caused by fluid accumulation within the lung which, in turn, causes the lung to stiffen. The condition is triggered within 48 hours by a variety of processes that injure the lungs such as trauma, head injury, shock, sepsis, multiple blood transfusions, medications, pulmonary embolism, severe pneumonia, smoke inhalation, radiation, high altitude, near drowning, and others. In general, ARDS occurs as a medical emergency and may be caused by other conditions that directly or indirectly cause the blood vessels to "leak" fluid into the lungs. In ARDS, the ability of the lungs to expand is severely decreased and produces extensive damage to the air sacs and lining or endothelium of the lung. ARDS' most common symptoms are labored, rapid breathing, nasal flaring,

cyanosis blue skin, lips and nails caused by lack of oxygen to the tissues, breathing difficulty, anxiety, stress, tension, joint stiffness, pain and temporarily absent breathing. ARDS is commonly diagnosed by testing for symptomatic signs, for example by a simple chest auscultation or examination with a stethoscope that may reveal abnormal symptomatic breath sounds. A preliminary diagnosis of ARDS may be confirmed with chest X-rays and the measurement of arterial blood gas. In some cases ARDS appears to be associated with other diseases, such as acute myelogenous leukemia, with acute tumor lysis syndrome (ATLS) developed after treatment with, e.g. cytosine arabinoside. In general, however, ARDS appears to be associated with traumatic injury, severe blood infections such as sepsis, or other systemic illness, high dose radiation therapy and chemotherapy, and inflammatory responses which lead to multiple organ failure, and in many cases death. In premature babies ("premies"), the lungs are not quite developed and, therefore, the fetus is in an anoxic state during development. Moreover, lung surfactant, a material critical for normal respiration, is generally not yet present in sufficient amounts at this early stage of life; however, premies often hyper-express the adenosine A_1 receptor and/or underexpress the adenosine A_{2a} receptor and are, therefore, susceptible to respiratory problems including bronchoconstriction, lung inflammation and ARDS, among others. When Respiratory Distress Syndrome (RDS) occurs in premies, it is an extremely serious problem. Preterm infants exhibiting RDS are currently treated by ventilation and administration of oxygen and surfactant preparations. When premies survive RDS, they frequently develop bronchopulmonary dysplasia (BPD), also called chronic lung disease of early infancy, which is often fatal.

10

20

30

50

The systemic administration of adenosine was found useful for treating SVT, and as a pharmacologic means to evaluate cardiovascular health via an adenosine stress test commonly administered by hospitals and by doctors in private practice. Adenosine administered by inhalation, however, is known to cause bronchoconstriction in asthmatics, possibly due to mast cell degranulation and histamine release, effects which have not been observed in normal subjects. Adenosine infusion has caused respiratory compromise, for example, in patients with COPD. As a consequence of the untoward side effects observed in many patients, caution is recommended in the prescription of adenosine to patients with a variety of conditions, including obstructive lung disease, emphysema, bronchitis, etc, and complete avoidance of its administration to patients with or prone to bronchoconstriction or bronchospasm, such as asthma. In addition, the administration of adenosine must be discontinued in any patient who develops severe respiratory difficulties. It would be of great help if a formulation were to be made available for joint use when adenosine administration is required.

Allergic rhinitis afflicts one in five Americans, accounting for an estimated \$4 to 10 billion in health care costs each year, and occurs at all ages. Because many people mislabel their symptoms as persistent colds or sinus problems, allergic rhinitis is probably underdiagnosed. Typically, IgE combines with allergens in the nose to produce chemical mediators, induction of cellular processes, and neurogenic stimulation, causing an underlying inflammation. Symptoms include nasal congestion, discharge, sneezing, and itching, as well as itchy, watery, swollen eyes. Over time, allergic rhinitis sufferers often develop sinusitis, otitis media with effusion, and nasal polyposis that may exacerbate asthma, and is associated with mood and cognitive disturbances, fatigue and irritability. Degranulation of mast cells results in the release of preformed mediators that interact with various cells, blood vessels, and mucous glands to produce the typical rhinitis symptoms. Most early- and late-phase reactions. occur in the nose after allergen exposure. The late-phase reaction is seen in chronic allergic rhinitis, with hypersecretion and congestion as the most prominent symptoms. Repeated exposure may cause hypersensitivity to one or many allergens. Sufferers may also become hyperreactive to non-specific triggers, such as cold air or strong odors. Non-allergic rhinitis may be induced by infections, such as viral infections, or associated with nasal polyps, as occurs in patients with aspirin idiosyncrasy. In addition, pregnancy, hypothyroidism, and exposure to occupational factors or medications may cause rhinitis, as well. NARES syndrome, a non-allergic type of rhinitis associated with eosinophils in nasal secretions, typically occurs in middle-aged individuals and is accompanied by loss of smell. Saline is often recommended to improve nasal stuffiness, sneezing, and congestion, since saline sprays usually relieve mucosal irritation or dryness associated with various nasal conditions, minimize mucosal atrophy, and dislodge encrusted or thickened mucus, while causing no side effects, and may be used freely in pregnant patients. In addition, if used immediately before intra-nasal corticosteroid dosing, saline helps prevent local irritation. Anti-histamines often serve as a primary therapy. Terfenadine and astemizole, two non-sedating antihistamines, however, have been associated with a ventricular arrhythmia known as Torsades de Points, usually in interaction with other medications such as ketoconazole and erythromycin, or secondary to an underlying cardiac problem. Up to date, loratadine, another nonsedating anti-histamine, and cetirizine have not been associated with

serious adverse cardiovascular events. Cetirizine's most common side effect, however, is drowsiness. Claritin, for example, may be effective in relieving sneezing, runny nose, and nasal, ocular and palatal itching in a low percentage of patients, although not approved for this indication or asthma. Anti-histamines are typically combined with a decongestant to help relieve nasal congestion. Sympathomimetic medications are used as vasoconstrictors and decongestants, the most common being pseudoephedrine, phenylpropanolamine and phenylephrine. These agents, however, often cause hypertension, palpitations, tachycardia, restlessness, insomnia and headache. Topical decongestants are recommended for limited periods because their overuse results in nasal dilatation. Anticholinergic agents, such as cromolyn, have a role in patients with significant rhinorrhea or in specific cases, such as "gustatory rhinitis", which is usually associated with ingestion of spicy foods, and have been used on the common cold. Sometimes the Cromolyn spray produces sneezing, transient headache, and even nasal burning. Topical and nasal spray corticosteroids such as Vancenase are effective agents in the treatment of rhinitis, especially for symptoms of congestion, sneezing and runny nose, but sometimes may cause irritation, stinging, burning, sneezing, and local bleeding. Topical steroids are generally more effective than Cromolyn sodium, particularly in the treatment of NARES, but side effects sometimes limit their usefulness. Immunotherapy, while expensive and inconvenient, often provides substantial benefits, especially the use of drugs such as blocking antibodies, and those that alter cellular histamine release, and result in decreased IgE. Presently available treatments, such as propranolol, verapamil, and adenosine, may help to minimize symptoms. Verapamil is most commonly used but it has several shortcomings, since it causes or exacerbates systemic hypotension, congestive heart failure, bradyarrhythmias, and ventricular fibrillation. Verapamil, however, crosses the placenta and has been shown to cause fetal bradycardia, heart block, depression of contractility, and hypotension. Adenosine has several advantages over verapamil, including rapid onset, brevity of side effects, theoretical safety, and probable lack of placental transfer, but may not be administered to a variety of patients.

10

20

30

50

Chronic obstructive pulmonary disease (COPD) is characterized by airflow obstruction that is generally caused by chronic bronchitis, emphysema, or both. Emphysema is characterized by abnormal permanent enlargement of the air spaces distal to the terminal bronchioles, accompanied by destruction of their walls and without obvious fibrosis. Chronic bronchitis is characterized by chronic cough, mucus production, or both, for at least three months for at least two successive years where other causes of chronic cough have been excluded. COPD characteristically affects middle aged and elderly people, and is one of the leading causes of morbidity and mortality worldwide. In the United States it affects about 14 million people and is the fourth leading cause of death, and both its morbidity and mortality rates are still rising. This contrasts with the decline over the same period in age-adjusted mortality from all causes, and from cardiovascular diseases. COPD, however, is preventable, since it is believed that its main cause is exposure to cigarette smoke. The disease is rare in lifetime non-smokers, in whom exposure to environmental tobacco smoke will explain at least some of the airways obstruction. Other proposed etiological factors include airway hyper-responsiveness or hypersensitivity, ambient air pollution, and allergy. The airflow obstruction in COPD is usually progressive in people who continue to smoke. This results in early disability and shortened survival time. Stopping smoking reverts the decline in lung function to values for non-smokers. Many patients will use medication chronically for the rest of their lives, with the need for increased doses and additional drugs during exacerbations. Amongst the currently available treatments for COPD, short-term benefits were found, as opposed to long term effects on progression, from anti-cholinergic drugs, \$2 adrenergic agonists, and oral steroids. The effects of anti-cholinergic drugs and 62 adrenergic agonists, however, are not seen in all people with COPD, and the two agents combined are only slightly more effective than either alone. Their adverse effects and the need for frequent monitoring of blood concentrations limit the usefulness of theophyllines. There is no evidence that anti-cholinergic agents affect the decline in lung function, and mucolytics have been shown to reduce the frequency of exacerbations but with a possible deleterious effect on lung function. The long-term effects of $\beta 2$ adrenergic agonists, oral corticosteroids, and antibiotics have not yet been evaluated, and up to the present time no other drug has been shown to affect the progression of the disease or survival. Thus, there is very little currently available to alleviate symptoms of COPD, prevent exacerbations, preserve optimal lung function, and improve daily living activities an quality of life. Thus, there is very little currently available to alleviate symptoms of COPD, prevent exacerbations, preserve optimal lung function, and improve daily living activities an quality of life.

Interstitial lung disease (ILD), interstitial pulmonary fibrosis, or simply pulmonary fibrosis are terms that include more than 130 chronic lung disorders that affect the lung in at least three ways: lung tissue is damaged in some known or unknown way, walls of the air sacs in the lung become inflamed, and scarring or fibrosis begins in

the interstitium (or tissue between the air sacs), and the lung becomes stiff. Breathlessness during exercise may be one of the first symptoms of these diseases, and a dry cough may be present. Neither the symptoms nor X rays are often sufficient to tell apart different types of pulmonary fibrosis. Some pulmonary fibrosis patients have known causes and some have unknown or idiopathic causes. Interstitial lung disease (or pulmonary fibrosis) is named after he tissue between the air sacs of the lungs because this is the tissue affected by fibrosis or scarring. The course of this disease is generally unpredictable. If they progress the lung tissue thickens and becomes stiff, breathing becomes more difficult and demanding, and inflammation occurs. Some people may need oxygen therapy as part of their treatment.

Microbial infections are extremely common, and may be caused by viruses, bacteria, and other forms of life. They are generally treated with anti-viral agents, antibiotics, and other specific therapeutic drugs. However, some infectiouns may either go unnoticed, or produce secondary effects such as inflammation, pulmonary and airway obstructions, and other pulmonary ailments.

10

20

30

40

45

50

Cancer is one of the most prevalent and feared diseases of our times. It generally results from the carcinogenic transformation of normal cells of different epithelia. Two of the most damaging characteristics of carcinomas and other types of malignancies are their uncontrolled growth and their ability to create metastases in distant sites of the host, particularly a human host. It is usually these distant metastases that cause serious consequences to the host, since frequently the primary carcinoma may be, in most cases, removed by surgery. The treatment of cancer presently relies on surgery, irradiation therapy and systemic therapies such as chemotherapy, different immunity-boosting medicines and procedures, hyperthermia and systemic, radioactively labeled monoclonal antibody treatment, immunotoxins and chemotherapeutic drugs.

Adenosine may constitute an important mediator in the lung for various diseases, including bronchial asthma, COPD, CF, RDS, rhinitis, pulmonary fibrosis, and others. Its potential role was suggested by the finding that asthmatics respond favorably to aerosolized adenosine with marked bronchoconstriction whereas normal individuals do not. An asthmatic rabbit animal model, the dust mite allergic rabbit model for human asthma, responded in a similar fashion to aerosolized adenosine with marked bronchoconstriction whereas non-asthmatic rabbits showed no response. More recent work with this animal model suggested that adenosine-induced bronchoconstriction and bronchial hyperresponsiveness in asthma may be mediated primarily through the stimulation of adenosine receptors. Adenosine has also been shown to cause adverse effects, including death, when administered therapeutically for other diseases and conditions in subjects with previously undiagnosed hyper reactive airways.

Adenosine is a purine involved in intermediary metabolism, and may constitute an important natural mediator of many of diseases. Adenosine plays a unique role in the body as a regulator of cellular metabolism. It can raise the cellular level of AMP, ADP and ATP which are the energy intermediates of the cell. Adenosine can stimulate or down regulate the activity of adenylate cyclase and hence regulate cAMP levels. cAMP, in turn, plays a role in neurotransmitter release, cellular division and hormone release. Adenosine's major role appears to be to act as a protective injury autocoid. In any condition in which ischemia, low oxygen tension or trauma occurs adenosine appears to play a role. Defects in synthesis, release, action and/or degradation of adenosine have been postulated to contribute to the over activity of the brain excitatory amino acid neurotransmitters, and hence various pathological states. Adenosine has also been implicated as a primary determinant underlying the symptoms of bronchial asthma and other respiratory diseases, the induction of bronchoconstriction and the contraction of airway smooth muscle. Moreover, adenosine causes bronchoconstriction in asthmatics but not in non-asthmatics. Other data suggest the possibility that adenosine receptors may also be involved in allergic and inflammatory responses by reducing the hyperactivity of the central dopaminergic system. It has been postulated that the modulation of signal transduction at the surface of inflammatory cells influences acute inflammation. Adenosine is said to inhibit the production of super-oxide by stimulated neutrophils. Recent evidence suggests that adenosine may also play a protective role in stroke, CNS trauma, epilepsy, ischemic heart disease, coronary by-pass, radiation exposure and inflammation. Overall, adenosine appears to regulate cellular metabolism through ATP, to act as a carrier for methionine, to decrease cellular oxygen demand and to protect cells from ischemic injury. Adenosine is a tissue hormone or intercellular messenger that is released when cells are subject to ischemia, hypoxia, cellular stress, and increased workload, and or when the demand for ATP exceeds its supply. Adenosine is a purine and its formation is directly linked to ATP catabolism. It appears to modulate an array of physiological processes including vascular tone, hormone action, neural function, platelet aggregation and lymphocyte differentiation. It also may play a role in

DNA formation, ATP biosynthesis and general intermediary metabolism. It is suggested that it regulates the formation of cAMP in the brain and in a variety of peripheral tissues. Adenosine regulates cAMP formation through two receptors A_1 and A_2 . Via A_1 receptors, adenosine reduces adenylate cyclase activity, while it stimulates adenylate cyclase at A_2 receptors. The adenosine A_1 receptors are more sensitive to adenosine than the A_2 receptors. The CNS effects of adenosine are generally believed to be A_1 -receptor mediated, where as the peripheral effects such as hypotension, bradycardia, are said to be A_2 receptor mediated.

Anti-sense oligonucleotides have received considerable theoretical consideration as potential useful pharmacological agents in human disease. One important impediment to their effective application has been a difficulty in finding an appropriate route of administration to deliver them to their site of action. The administering of anti-sense oligonucleotides directly to specific regions of the brain, for example, necessarily has limited clinical utility due to its invasive nature. Finding practical and effective applications for these agents in actual models of human disease have been few and far between, particularly because they had to be administered in large doses. The systemic administration of anti-sense oligonucleotides as pharmacological agents, such as oral and parenteral administration, has been found to have also significant problems, including the inherent difficulty in targeting specific tissues due to their dilution in the circulatory system. The bioavailability of orally administered anti-sense oligonucleotides is very low, of the order of less than about 5%. The present inventor previously pioneered the administration of oligonucleotides via the respiratory system, and successfully treated asthma, bronchoconstriction and lung inflammation and allergies, and applied the technology to the treatment of other conditions. The route of administration, thus was found to be of importance, particularly for treating localized conditions. As described in more detail below, the lung is an excellent target for the direct administration of anti-sense oligonucleotides and provides a non-invasive and a tissue-specific route. The respiratory system, and in particular the lung, as the ultimate port of entry into the organism provides an excellent route of administration for anti-sense oligonucleotides. This is so not only for the treatment of lung disease, but also when utilizing the lung as a means for delivery, particularly because of its non-invasive and tissue-specific nature. Thus, local delivery of anti-sense oligos directly to the target tissue enables an optimal delivery for the therapeutic use of these compounds. Fomivirsen (ISIS 2922) is an example of a local drug delivery into the eye to treat cytomegalovirus (CMV) retinitis, for which a new drug application has been filed by ISIS. The administration of a drug through the lung offers the further advantage that inhalation is non-invasive whereas direct injection into the vitreous of the eye is invasive.

. 15

35

40

45

Steroids are naturally occurring compounds of varied activities. In mammals, they serve different functions, some being associated with sexual cycles and reproduction, others with regulation of endogenous levels of various compounds. Some of these have anti-inflammatory activity,

Steroid hormones are potent chemical messengers that exert dramatic effects on cell differentiation, homeostasis, and morphogenesis. These molecules diverse in structure share a mechanistically similar mode of action. The effector molecules diffuse across cellular membranes and bind to specific high affinity receptors in the target cell nuclei. This interaction results in the conversion of an inactive receptor to one that can interact with the regulatory regions of target genes and modulate the rate of transcription of specific gene sets. Upon ligand binding, these receptors generate both rapid and long lasting responses. Steroids can act through two basic mechanisms: genomic and non-genomic. The classical genomic action is mediated by specific intracellular receptors, whereas the primary target for the non-genomic one is the cell membrane. Many clinical symptoms seem to be mediated through the non-genomic route. Furthermore, membrane effects of steroid and other factors can interfere with the intranuclear receptor system inducing or repressing steroid-and receptor-specific genomic effects. These signalling pathways may lead to unexpected hormonal or anti-hormonal effects in patients treated with certain drugs.

Steroid receptors are members of a large family of nuclear transcription factors that regulate gene expression by binding to their cognate steroid ligands, to the specific enhancer sequences of DNA (steroid response elements) and to the basic transcription machinery. Steroid receptors are basically localized in the nucleus, regardless of hormonal status, and considerable-amounts of unliganded steroid receptors may be present in the cytoplasm of target cells in exceptional cases Most steroid receptors are phosphoproteins, which are further phosphorylated after ligand binding. The role of phosphorylation in receptor transaction is complex and may not be uniform to all steroid receptors. However, phosphorylation and/or dephosphorylation is believed to be a key event regulating the transcriptional activity of steroid receptors. Steroid receptor activities can be affected by the amount of steroid receptor in the cell nuclei, which is modified by the rate of transcription and translation of the steroid receptor gene as well as by proteolysis of the steroid receptor protein. There is an auto- and heteroregulation of

receptor levels. Some of the steroid receptors appear to bind specific protease inhibitors and exhibit protease activity. Some steroid receptors are expressed as two or more isoforms, which may have different effects on transcription. Receptor isoforms are different translation or transcription products of a single gene. Isoform A of the progesterone receptor is a truncated form of PR isoform B originating from the same gene, but it is able to suppress not only the gene enhancing activity of PR-B but also that of other steroid receptors.

Before hormone binding, the receptors are part of a complex with multiple chaperones which maintain the receptor in its steroid binding conformation. Following hormone binding, the complex dissociates and the receptors bind to steroid response elements in chromatin. Regulation of gene expression by hormones involves an interaction of the DNA-bound receptors with other sequence-specific transcription factors and with the general transcription factors, which is partly mediated by co-activators and co-repressors. The specific array of cis regulatory elements in a particular promoter/enhancer region, as well as the organization of the DNA sequences in nucleosomes, specifies the network of receptor interactions. Depending on the nature of these interactions, the final outcome can be induction or repression of transcription.

15

20

35

40

Adrenocortical hormones are steroid hormones classified as glucocorticoids, mineralocorticoids and sex hormones. Glucocorticoids moderate the metabolism of sugar, fat and protein and may raise the resistance to the adverse stimulation of the body by these substances. Many of the clinically useful steroids belong to this group, including cortisone, hydrocortisone, and their pharmaceutical derivatives such as prednisone, dexamethasone, etc. Although glucocorticoids were originally so called because of their infuence on glucose metabolism, they are currently defined as steroids that exert their effects by binding to specific cytosolic receptors that mediate the actions of these hormones. These glucocorticoid receptors are present in virtually all tissues, and glucocorticoid-receptor interactions are responsible for most of the known effects of these steroids. Alteration in the structure of these glucocorticoids has led to the development of synthetic compounds with greater glucocorticoid activity. The increased activity of these compounds is due to increased affinity for the glucocorticoid receptors and/or delayed plasma clearance, which increases tissue exposure. In addition, many of these synthetic glucocorticoids evidence negligible mineralocortocoid effects and thus do not result in sodium retention, hypertension, and/or hypokalemia. Glucocorticoid action is initiated by entry of the steroid into the cell and binding to the cytosolic glucocorticoid receptor proteins. After binding, activated hormone-receptor complexes enter the nucleus and interact with nuclear chromatin acceptor sites. These events cause the expression of specific genes and the transcription of specific mRNAs. The resulting proteins affect the response to the glucocorticoids, which may be inhibitory or stimulatory depending on the specific tissue affected. Although glucocorticoid receptors are similar in many tissues, the proteins synthesized vary widely and are the result of expression of specific genes in different cell types.

Mineralocorticoids and sex hormones are non-glucocorticoid steroids, e.g., adrenal androgens. Adrenal androgens, such as androstenediones, dehydroepiandrosterone (DHEA), and DHEA sulfate function as precursors for the peripheral conversion to androgenic hormones, such as testosterone and dihydrotestosterone. DHEA sulfate secreted by the adrenal undergoes limited conversion to DHEA, and both the peripheral DHEA and DHEA secreted by the adrenal cortex may be further converted in peripheral tissues to androstenedione, the immediate precursor of the active androgens. Dehydroepiandrosterone (DHEA) is a naturally occurring steroid secreted by the adrenal cortex with apparent chemoprotective properties. Epidemiological studies have shown that low endogenous levels of DHEA correlate with increased risk of developing some forms of cancer, such as pre-menopausal breast cancer in women and bladder cancer in both sexes. The ability of DHEA and DHEA analogues, e.g. dehydroepiandrosterone sulfate (DHEA-S), to inhibit carcinogenesis is believed to result from their uncompetitive inhibition of the activity of the enzyme glucose 6-phosphate dehydrogenase (G6PDH). G6PDH is the rate limiting enzyme of the hexose monophosphate pathway, a major source of intracellular ribose-5-phosphate and NADPH. Ribose-5 phosphate is a necessary substrate for the synthesis of both ribo- and deoxyribonucleotides required for the synthesis of RNA and DNA. NADPH is a cofactor also involved in nucleic acid biosynthesis and the synthesis of hydroxmethylglutaryl Coenzyme A reductase (HMG CoA reductase). HMG CoA reductase is an unusual enzyme that requires two moles of NADPH for each mole of product, mevalonate, produced. Thus, it appears that HMG CoA reductase would be ultrasensitive to DHEA-mediated NADPH depletion, and that DHEA-treated cells would rapidly show the depletion of intracellular pools of mevalonate. Mevalonate is required for DNA synthesis, and DHEA arrests human cells in the G1 phase of the cell cycle in a manner closely resembling that of the direct HMG CoA. Because G6PDH produces mevalonic acid used in cellular processes such as protein isoprenylation and the synthesis of dolichol, a precursor for glycoprotein biosynthesis, DHEA inhibits carcinogenesis by depleting mevalonic acid and thereby

inhibiting protein isoprenylation and glycoprotein synthesis. Mevalonate is a central precursor for the synthesis of cholesterol, as well as for the synthesis of a variety of non-sterol compounds involved in post-translational modification of proteins, such as farnesyl pyrophosphate and geranyl pyrophosphate. Mevalonate is also a central precursor for the synthesis of dolichol, a compound that is required for the synthesis of glycoproteins involved in cell-to-cell communication and cell structure. Mevalonate is also central to the manufacture of ubiquinone, an anti-oxidant with an established role in cellular respiration. It has long been known that patients receiving steroid hormones of adrenocortical origin at pharmacologically appropriate doses show increased incidence of infectious disease.

DHEA, also known as 3β-hydroxyandrost-5-en-17-one or dehydroepiandrosterone, is a 17-ketosteroid which is quantitatively one of the major adrenocortical steroid hormones found in mammals. Although DHEA appears to serve as an intermediary in gonadal steroid synthesis, the primary physiological function of DHEA has not been fully understood. It has been known, however, that levels of this hormone begin to decline in the second decade of life, reaching 5% of the original level in the elderly.) Clinically, DHEA has been used systemically and/or topically for treating patients suffering from psoriasis, gout, hyperlipemia, and it has been administered to postcoronary patients. In mammals, DHEA has been shown to have weight optimizing and anti-carcinogenic effects, and it has been used clinically in Europe in conjunction with estrogen as an agent to reverse menopausal symptoms and also has been used in the treatment of manic depression, schizophrenia, and Alzheimer's disease. DHEA has also been used clinically at 40 mg/kg/day in the treatment of advanced cancer and multiple sclerosis. Mild androgenic effects, hirsutism, and increased libido were the side effects observed. These side effects can be overcome by monitoring the dose and/or by using analogues. The subcutaneous or oral administration of DHEA to improve the host's response to infections is known, as is the use of a patch to deliver DHEA. DHEA is also known as a precursor in a metabolic pathway that ultimately leads to more powerful agents that increase immune response in mammals. That is, DHEA acts as a biphasic compound: it acts as an immuno-modulator when converted to androstenediol or androst-5-ene-3β,17β-diol (βAED), or androstenetriol or androst-5-ene-3β,7β,17β-triol (βAET). However, in vitro DHEA has certain lymphotoxic and suppressive effects on cell proliferation prior to its conversion to βAED and/or βAET. It is, therefore, believed that the superior immunity enhancing properties obtained by administration of DHEA result from its conversion to more active metabolites.

15

20

40

45

Adequate ubiquinone levels have been found to be essential for maintaining proper cardiac function, and the administration of exogenous ubiquinone has recently been shown to have beneficial effect in patients with chronic heart failure. Ubiquinone depletion has been observed in humans and animals treated with lovastatin, a direct HMG CoA reductase inhibitor. Such lovastatin-induced depletion of ubiquinone has been shown to lead to chronic heart failure, or to a shift from low heart failure into life-threatening high grade heart failure. DHEA, unlike lovastatin, inhibits HMG CoA reductase indirectly by inhibiting G6PDH and depleting NADPH, a required cofactor for HMG CoA reductase. However, DHEA's indirect inhibition of HMG CoA reductase suffices to deplete intracellular mevalonate. This effect adds to the depletion of ubiquinone, and may result in chronic heart failure following long term usage. Thus, although DHEA was once considered a safe drug, it is now predicted that with long term administration of DHEA or its analogues, chronic heart failure may occurs as a complicating side effect. Further, some analogues of DHEA produce this side effect to a greater extent because, in general, they are more potent inhibitors of G6PDH than DHEA.

A handful of medicaments have been used for the treatment of respiratory diseases and conditions, although in general they all have limitations. Amongst them are corticoid steroids with glucocorticoid activity, leukotriene inhibitors, anti-cholinergic agents, anti-histamines, oxygen therapy, theophyllines, and mucolytics. Corticosteroids are the ones with the most widespread use in spite of their well documented side effects. Most of the available drugs are nevertheless effective in a small number of cases, and not at all when it comes to the treatment of asthma. No treatments are currently available for many of the other respiratory diseases. Theophylline, an important drug in the treatment of asthma, is a known adenosine receptor antagonist that was reported to eliminate adenosine-mediated bronchoconstriction in asthmatic rabbits. A selective adenosine A₁ receptor antagonist, 8-cyclopentyl-1, 3-dipropylxanthine (DPCPX) was also reported to inhibit adenosine-mediated bronchoconstriction and bronchial hyperresponsiveness in allergic rabbits. The therapeutic and preventative applications of currently available adenosine A₁ receptor-specific antagonists are, nevertheless, limited by their toxicity. Theophylline, for example, has been widely used in the treatment of asthma, but is associated with frequent, significant toxicity resulting from its narrow therapeutic dose range. DPCPX is far too toxic to be useful clinically. The fact that, despite decades of

extensive research, no specific adenosine receptor antagonist is available for clinical use attests to the general toxicity of these agents.

For many years, two classes of compounds have dominated the treatment of asthma: corticosteroids having glucocorticoid activity and bronchodilators. Examples of corticosteroids are beclomethasone and corticoid 21-sulfopropionates. Examples of a bronchodilator are an older β 2 adrenergic agonist such as albuterol, and a newer one such as salmeterol. In general, when glucocorticosteroids are taken daily either by inhalation or orally, they attenuate inflammation. The β 2 adrenergic agonists, on the other hand, primarily alleviate bronchoconstriction. Whereas glucocorticosteroids are not useful in general for acute settings, bronchodilators are used in acute care, such as in the case of asthma attacks. At the present time, many asthma patients require daily use of both types of agents, a glucocorticosteroid to contain pulmonary inflammation, and a bronchodilator to alleviate bronchoconstriction. More recently, fluticasone propionate, a corticosteroid was combined with β 2 adrenergic agonists in one therapeutic formulation said to have greater efficiency in the treatment of asthma. However, glucocorticosteriods, particularly when taken for prolonged periods, have extremely deleterious side effects that, although somewhat effective, make their chronic use undesirable, particularly in children.

Clearly, there exists a well defined need for novel and effective therapies for treating respiratory, lung and cancer ailments that cannot presently be reasonably treated, or at least for which no therapies are available that are effective and devoid of significant detrimental side effects. Moreover, there is a definite need for treatments that have prophylactic and therapeutic applications, and require low amounts of active agents, and are less costly and less prone to detrimental side effects. Furthermore, it is readily apparent that anti-inflammatory steroids ("AIS"), including adrenal androgens, androgens and their derivatives, etc, corticoid and non-glucocorticoid steroids, ubiquinones and their respective salts, as well as specifically targeted anti-sense oligonucleotides (oligos) are each alone useful for the treatment of respiratory, lung, and cancer. This patent provides their joint effects that evidence unexpected superior results over each agent alone.

15

25

30

SUMMARY OF THE INVENTION

The present invention generally relates to a pharmaceutical or veterinary composition, comprising a pharmaceutically or veterinarily acceptable carrier or diluent, and first and second active agents.

The first active agent comprises an oligonucleotide(s) (oligo(s)) that may be anti-sense to one or more targets, and a second active agent comprising anti-inflammatory steroids ("AIS") and/or a ubiquinone, in amounts effective for alleviating airway, lung, and microbial and/or cancer diseases associated with, for example, bronchoconstriction, impeded respiration, dispnea, emphysema, asthma, COPD, ARDS, CF, allergic rhinitis. pulmonary hypertension and fibrosis, lung inflammation, allergies, surfactant depletion or hyposecretion, and cancers, among others. The oligo preferably contains about 0 to about 15% adenosine (A) and is anti-sense to the initiation codon, the coding region, the 5'-end or the 3'-end genomic flanking regions, the 5' or 3' intron-exon junctions, or regions within 2 to 10 nucleotides of the junctions of at least one gene regulating or encoding a target polypeptide associated with lung or airway dysfunction or cancer, or that is anti-sense to the corresponding mRNA, and the composition may comprise also combinations or mixtures of the oligos. The targets are typically molecules associated with airway disease, cancer, etc., such as transcription factors, stimulating and activating peptide factors, cytokines, cytokine receptors, chemokines, chemokine receptors, adenosine receptors, bradykinin receptors, endogenously produced specific and non-specific enzymes, immunoglobulins and antibodies, antibody receptors, central nervous system (CNS) and peripheral nervous and non-nervous system receptors, CNS and peripheral nervous and non-nervous system peptide transmitters, adhesion molecules, defensins, growth factors, vasoactive peptides and receptors, binding proteins, and malignancy associated proteins, among others. In one embodiment the first active agent comprises a nucleic acid wherein the oligo is anti-sense to more than one target. These are called within the four corners of this patent multiple target anti-sense oligonucleotides or MTAs.

The second active agent comprises an anti-inflammatory steroid such as an adrenal androgen of the chemical formula

wherein R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{12} , R_{13} , R_{14} and R_{19} are independently H, OR, halogen, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkyne, (C_1-C_{10}) alkyne, (C_1-C_{10}) alkyne, or two or more of R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{12} , R_{13} , R_{14} and R_{19} can be linked by combination of the atoms of C, O, N, S, P and Si to form a 3 to 15 member ring(s), in the α - and/or β - configuration;

R₅, R₆, R₁₀, and R₁₁ are independently OH, SH, H, halogen, pharmaceutically acceptable ester, pharmaceutically acceptable thioester, pharmaceutically acceptable ether, pharmaceutically acceptable thioester, pharmaceutically acceptable inorganic esters, pharmaceutically acceptable monosaccharide, disaccharide or oligosaccharide, spirooxirane, spirothirane, -OSO₂R₂₀, -OPOR₂₀R₂₁, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene, (C₁-C₁₀) alkyne or OR₂₃, -SO₂O-CH₂CHCH₂OCOR₂₅

wherein, R₂₃ is hydrogen or SO₂OM, wherein M is selected from H, Na, sulfatide; OCOR₂₄ or -PO₂O-CH₂CHCH₂OCOR₂₅

phosphatide OCOR₂₄, wherein R₂₄ and R₂₅, which may be the same or different, are straight or branched (C₁-C₂₀) alkyl, (C₁-C₂₀) alkene, (C₁-C₂₀) alkyne, sugar, polyethyleneglycol (PEG) or glucuronide COOH

15

20

R₅ and R₆ taken together are =0; R₁₀ and R₁₁ taken together are =0;

R₁₅ is (1) H, halogen, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene, (C₁-C₁₀) alkyne, or (C₁-C₁₀) alkoxy when R₁₆ is -C(O)OR₂₂, (2) H, halogen, OH, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene or (C₁-C₁₀) alkyne, when R₁₆ is halogen, OH, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene or (C₁-C₁₀) alkyne, (3) H, halogen, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkenyl, (C₁-C10) alkynyl, formyl, (C₁-C₁₀) alkanoyl or epoxy when R₁₆ is OH, (4) OR, SR, SH, H, halogen, pharmaceutically acceptable ester, pharmaceutically acceptable thioester, pharmaceutically acceptable ether, pharmaceutically acceptable thioether, pharmaceutically acceptable inorganic esters, pharmaceutically acceptable monosaccharide, disaccharide or oligosaccharide, spirooxirane, spirothirane, -OSO₂R₂₀ or -OPOR₂₀R₂₁ when R₁₆ is H, or R₁₅ and R₁₆ taken together are =O;

 R_{17} and R_{18} are independently (1) H, -OH, halogen, $(C_1\text{-}C_{10})$ alkyl, $(C_1\text{-}C_{10})$ alkene, $(C_1\text{-}C_{10})$ alkyne or - $(C_1\text{-}C_{10})$ alkoxy when R_6 is H OR, halogen, $(C_1\text{-}C_{10})$ alkyl or - $(C_0\text{-}C_{10})$ alkyl, $(C_1\text{-}C_{10})$ alkyl)_n amino, $(C_1\text{-}C_{10})$ alkyl)_n amino- $(C_1\text{-}C_{10})$ alkyl, $((C_1\text{-}C_{10}))$ alkyl, $((C_1\text{-}C_{10}))$ alkyl, $((C_1\text{-}C_{10}))$ alkyl, $((C_1\text{-}C_{10}))$ alkyl, $((C_1\text{-}C_{10}))$ alkyl, $((C_1\text{-}C_{10}))$ alkyl)_n amino- $((C_1\text{-}C_{10}))$ alkyne)_n amino- $((C_1\text{-}C_{10}))$ alkyne, $((C_1\text{-}C$

attached form an epoxide ring; R₂₀ and R₂₁ are independently OH, pharmaceutically acceptable ester or pharmaceutically acceptable ether; R₂₂ is H, (halogen)_m (C₁-C₁₀) alkyl, (halogen)_m (C₁-C₁₀) alkene, (halogen)_m (C₁-C₁₀) alkyne, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene or (C₁-C₁₀) alkyne; n is 0, 1 or 2; and m is 1, 2 or 3,

or pharmaceutically or veterinarily acceptable salts thereof; and/or a ubiquinone of the chemical formula

$$H_3CO$$
 H_3CO
 $CH_2CH=CCH_2)n-H$
 CH_3
 CH_3

wherein n=1 to 12, the agent being present in an amount effective for treating respiratory lung diseases and conditions, or for reducing levels of, or sensitivity to, adenosine or for increasing surfactant or ubiquinone levels in a subject's tissue (s), or pharmaceutically acceptable salts thereof.

The oligos and the anti-inflammatory steroids ("AIS") and/or ubiquinones (the second agent) are provided in the form of separate compositions and formulations together with a carrier or diluent, and optionally with other therapeutic agents and formulation additives. The first and second active agents are also provided as a single composition in combination with a carrier and other ingredients known in the art, and may be provided jointly or separately contained in a capsule or cartridge, and in the form of a kit. The drawings accompanying this patent form part of the disclosure of the invention, and further illustrate some aspects of the present invention as discussed below.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates the inhibition of HT-29 SF cells by DHEA.

20

25

Figures 2A and 2B illustrate the effects of different amounts of DHEA on cell cycle distribution in HT-29 SF cells.

Figures 3A and 3B illustrate the reversal of DHEA-induced growth inhibition in HT-29 cells treated with CON: Control; MVA: Mevalonic Acid; SQ: Squaline; CH: Cholesterol; DN: Deoxyribonucleodies; RN: Ribonucleosides.

Figures 4A, 4B, 4C and 4D illustrate the reversal of DHEA-induced G1 arrest in HT-29 SF cells for different durations of treatment with DHEA.

The invention will now be described in general in conceptual and experimental terms, with reference to specific examples. Other objects, advantages and features of the present invention will become apparent to those skilled in the art from the description that follows.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

This invention arose from a desire by the inventor to improve on his own prior treatments and those of others for diseases of the respiratory and pulmonary tracts, as well as those that develop elsewhere in the mammalian body. While he previously provided a pioneering treatment for respiratory tract conditions employing oligonucleotide anti-sense to pre-selected targets, and a treatment for respiratory conditions employing dehydroepiandrosterones and ubiquinone, he reasoned further that their combination might produce unexpectedly superior results given their independent mechanisms. Moreover, he posited that the combination of low dose antisense oligonucleotide (oligo) therapy with steroids in general and/or ubiquinone therapy would afford the advantage of their independent lack of detrimental side effects when compared with other agents such as steroids alone, and many others that are generally fraught with detrimental side effects and by the need of administering high doses of therapeutical agents. The inventor's prior discovery that variously targeted anti-sense oligonucleotides (oligos) may be utilized therapeutically in the treatment of diseases or conditions which impair respiration, cause inflammation and/or allergy(ies) in the lung and elsewhere, constrict bronchial tissue, obstruct lung airways, deplete surfactant

secretion, and/or otherwise impede normal breathing, lead him to expand his work to their combination with steroids of broad classifications, whose association, either known or discovered by him, with respiratory and pulmonary diseases as well as heart, brain, kidney, skin and other conditions, e.g. ailments associated with hypoxia, infantile Respiratory Disorder Syndrome (RDS), Acute Respiratory Disorder Syndrome (ARDS), aging, cardiac disease, cardiovascular problems, asthma, respiratory distress syndrome, rhinitis, pain, cystic fibrosis (CF), pulmonary hypertension, pulmonary vasoconstriction, pulmonary fibrosis, emphysema, chronic obstructive pulmonary disease (COPD), allergic rhinitis, and cancers such as lung cancer, leukemias, lymphomas, carcinomas, and the like, including colon cancer, breast cancer, lung cancer, pancreatic cancer, hepatocellular carcinoma, kidney cancer, melanoma, etc., as well as all types of cancers which may metastasize or have metastasized to the lung(s), including breast, liver and prostate cancer, would clearly find an immediate therapeutic application. In general, many diseases and conditions are associated with or cause inflammation, constricted bronchial tissue or lung airways, depletion of surfactant secretion, or augmented respiratory tract allergy(ies), or otherwise impede normal breathing.

The present treatment employs two agents, the first agent being selective for specific targets associated with or mediating these symptoms, and when administered into the airways it is employed in doses up to 1000-fold lower than previously seen in the art. The other agent includes a steroid agent and/or a ubiquinone and provides a more generalized amelioration of the symptoms, also in the substantial absence of undesirable side effects. This treatment further improves on the inventor's prior separate oligonucleotide (oligo) treatment by selecting oligos of reduced adenosine content, or otherwise reducing their adenosine content to reduce the release of free adenosine (A) by breakdown of A-containing oligonucleotides (oligos), thereby avoiding activating adenosine receptors that aggravate bronchoconstriction, and respiratory tract inflammation and allergies, lung surfactant depletion, and the like. As further described below, this patent also provides for the substitution of other bases with a universal base(s) (U) when some characteristic is to be modified. This patent provides novel and improved compositions, formulations, kits and methods which afford greatly improved results when compared with previously known independent treatments for preventing and alleviating bronchoconstriction, allergy(ies), inflammation, breathing difficulties, surfactant depletion and blockage of airways, as well as for preventing and alleviating other conditions and diseases which, directly or indirectly, affect the lung tissue. In different embodiments, one or more nucleic acids of the invention may be formulated for their administration alone or in combination with the steroid agents and/or ubiquinones, surfactant(s), a carrier, and/or other therapeutic agents and formulation agents known in the art. Similarly, the anti-inflammatory steroids and the ubiquinones may be formulated separately for separate administration, or with various formulation components, other therapeutic agents, and the like. By means of example, the steroids and ubiqionone may be administered once or twice daily whereas the oligo may only need be administered once weekly or biweekly.

15

25

45

50

The single or multiple active agent compositions of this invention are provided in a variety of systemic and topical formulations suitable for the delivery of anti-sense oligonucleotides (oligos) and anti-inflammatory steroids and/or ubiquinones by different routes as a fast means of starting treatment to address asthma and other pulmonary and respiratory tract diseases that may have a rapid onset, where a very low drug dosage is desirable. On the other hand, the oligos have long half-lives and may be administered as preventative of acute episodes, to significantly reduce emergency visits to a doctor or hospital, and as prophylactic maintenance treatment due to the high tolerability of the active agents for prolonged periods of time. In one embodiment, the present treatment provides a once-a-week oligo therapy, accompanied by daily administration of ubiquinone and/or a steroid incorporated into a subject's daily routine. This regime may be effectively administered preventatively, prophylactically and therapeutically, in conjunction with other therapies, or by itself for conditions without known therapies or as a substitute for therapies that have significant negative side effects is also of immediate clinical application. The present treatment also finds an application in the treatment of malignancies, given that steroids and ubiquinones are known for their carcinogenic activities as well as beneficial respiratory effects.

In these cases, the oligo are targeted to cancer-associated nucleic acids and their products. General examples of oligo(s) of the invention are those targeted to a receptor(s) and it (they) are typically present in the composition in an amount effective to reduce that receptor(s) mediated effect(s), and for reducing airway obstruction, lung inflammation and allergy(ies), and surfactant depletion, among others. In one embodiment the receptor is preferably an adenosine receptor such as the adenosine A_1 , A_{2b} , or A_3 receptors, and in some instances even adenosine A_{2a} receptors. The oligo of the invention may be applied to the preparation of a medicament for reducing bronchoconstriction, impeded respiration, lung inflammation and allergy(ies), depletion of surfactant or

ubiquinone, and for treating respiratory and pulmonary conditions in general, and specific ones such asthma, ARDS, pulmonary fibrosis, cystic fibrosis, allergic rhinitis, COPD, etc. Many of the conditions targeted by the present treatment afflict a large segment of the population, and either remain unaddressed in terms of therapy or the existing treatments, although heavily advertised, are only mildly effective in small numbers of the afflicted population. ARDS' most common symptoms are labored, rapid breathing, nasal flaring, cyanosis blue skin, lips and nails caused by lack of oxygen to the tissues, breathing difficulty, anxiety, stress, tension, joint stiffness, pain and temporarily absent breathing. In the following paragraphs, the specific conditions will be described, and the existing treatments, if any, discussed. ARDS is currently diagnosed by mere symptomatic signs, e. g. chest auscultation with a stethoscope that may reveal abnormal symptomatic breath sounds, and confirmed with chest X-rays and the measurement of arterial blood gas. ARDS, in some instances, appears to be associated with other diseases, such as acute myelogenous leukemia, acute tumor lysis syndrome (ATLS) developed after treatment with, e.g. cytosine arabinoside, etc. In general, however, ARDS is associated with traumatic injury, severe blood infections such as sepsis or other systemic illness, high-dose radiation therapy and chemotherapy, and inflammatory responses which lead to multiple organ failure and in many cases death. In premature babies ("premies"), the lungs are not quite developed and, therefore, the fetus is in an anoxic state during development. Moreover, lung surfactant, a material critical for normal respiration, is generally not yet present in sufficient amounts at this early stage of life; however, premies often hyper-express the adenosine A1 receptor and/or underexpress the adenosine A2 receptor and are, therefore, susceptible to respiratory problems including bronchoconstriction, lung inflammation and ARDS, among others. When Respiratory Distress Syndrome (RDS) occurs in premies, it is an extremely serious problem. Preterm infants exhibiting RDS are currently treated by ventilation and administration of oxygen and surfactant preparations. When premies survive RDS, they frequently develop bronchopulmonary dysplasia (BPD), also called chronic lung disease of early infancy, which is often fatal.

15

25

35

45

50

Rhinitis may be seasonal or perennial, allergic or non-allergic. Non-allergic rhinitis may be induced by infections, such as viruses, or associated with nasal polyps, as occurs in patients with aspirin idiosyncrasy. Medical conditions such as pregnancy or hypothyroidism and exposure to occupational factors or medications may cause rhinitis. The so-called NARES syndrome is a non-allergic type of rhinitis associated with eosinophils in the nasal secretions, which typically occurs in middle-age and is accompanied by some loss of sense of smell. When cholinergic pathways are stimulated they produce typical secretions that are identified by their glandular constituents so as to implicate neurologic stimulation. Other secretions typical of increased vascular permeability are found in allergic reactions as well as upper respiratory infections, and the degranulation of mast cells releases preformed mediators that interact with various cells, blood vessels, and mucous glands, to produce the typical rhinitis symptoms. Most early- and late-phase reactions occur in the nose after allergen exposure. The late-phase reaction is seen in chronic allergic rhinitis, with hypersecretion and congestion as the most prominent symptoms. When priming occurs, it exhibits a lowered threshold to stimulus after repeated allergen exposure that, in turn, causes a hypersensitivity reaction to one or more allergens. Sufferers may also become hyper-reactive to non-specific triggers such as cold air or strong odors. Saline sprays are generally used to relieve mucosal irritation or dryness associated with various nasal conditions, minimize mucosal atrophy, and dislodge encrusted or thickened mucus and are used immediately before intranasal corticosteroid dosing to prevent drug-induced local irritation. Anti-histamines such as terfenadine and astemizole, two non-sedating anti-histamines, are also employed to treat this condition, but have been associated with a ventricular arrhythmia known as Torsades de Points, usually in interaction with other medications such as ketoconazole and erythromycin, or secondary to an underlying cardiac problem. Loratadine, another non-sedating anti-histamine, and cetirizine have not been associated with an adverse impact on the QT interval, or with serious adverse cardiovascular events. Cetirizine, however, produces extreme drowsiness and has not been widely prescribed. Non-sedating anti-histamines, e.g. Claritin have not been tested for asthma or other more specific conditions. Terfenadine, loratadine and astemizole, on the other hand, exhibit extremely modest bronchodilating effects, reduction of bronchial hyper-reactivity to histamine, and protection against exercise- and antigen-induced bronchospasm. Some of these benefits, however, require higher-than-currently-recommended doses. The sedating-type anti-histamines help induce night sleep, but they cause sleepiness and compromise performance if taken during the day.

When employed, anti-histamines are typically combined with a decongestant to help relieve nasal congestion. Sympathomimetic medications are used as vasoconstrictors and decongestants. The three commonly prescribed systemic decongestants, pseudoephedrine, phenylpropanolamine and phenylephrine cause hypertension,

palpitations, tachycardia, restlessness, insomnia and headache. The interaction of phenylpropanolamine with caffeine, in doses of two to three cups of coffee, may significantly raise blood pressure. In addition, medications such as pseudoephedrine may cause hyperactivity in children. Topical decongestants, nevertheless, are only indicated for a limited period of time, as they are associated with a rebound nasal dilatation with overuse. Anticholinergic agents are given to patients with significant rhinorrhea or for specific conditions such as "gustatory rhinitis", usually caused by ingestion of spicy foods, and may have some beneficial effects on the common cold. Cromolyn used prophylactically as a nasal spray, however, produces sneezing, transient headache, and even nasal burning. Topical corticosteroids, such as Vancenase, are somewhat effective in the treatment of rhinitis, especially for symptoms of congestion, sneezing, and runny nose. Corticosteroid nose sprays, however, sometimes, cause irritation, stinging, burning and sneezing, and sometimes local bleeding and septal perforation. The side effects of topical steroids, however, limit their usefulness except for temporary therapy in patients with severe symptoms. These agents are sometimes used for shrinking nasal polyps when local therapy fails. Immunotherapy is expensive and inconvenient, and used mostly in in-patients who experience side effects from other medications. The so-called blocking antibodies, and agents that alter cellular histamine release, in addition, decrease IgE, which is useful in IgE-mediated diseases, e.g., hypersensitivity in atopic patients with recurrent middle ear infections. For allergic rhinitis sufferers, however, a runny nose is more than a nuisance. The disorder often results in impaired quality of life and sets the stage for more serious ailments, including psychological problems. Presently, rhinitis is mostly treated with propranolol, verapamil, and adenosine, all of which have Food and Drug Administration-approved labeling for acute termination of SupraVentricular Tachycardia (SVT).

10

20

35

There is very little currently available to alleviate symptoms of COPD, prevent exacerbations, preserve optimal lung function, and improve daily living activities and quality of life. Anti-cholinergic drugs achieve short-term bronchodilation, but no improved long-term prognosis even with inhaled products. Most COPD patients have at least some airways obstruction, and "the lung health study" found spirometric signs of early COPD in men and women smokers. Smoking cessation produced a slowing of the decline in the functional effective volume of the lungs. While ipratropium bromide was found to have no significant effect on the decline in the functional effective volume of the patient's lungs. Ipratropium bromide, however, produced serious adverse effects, such as cardiac symptoms, hypertension, skin rashes, and urinary retention. Short and long acting inhaled $\beta 2$ adrenergic agonists achieve short-term bronchodilation and provide some symptomatic relief in COPD patients, but show no meaningful maintenance effect on its progression. Short acting $\beta 2$ adrenergic agonists increase exercise capacity and produce some degree of bronchodilation, and even increase lung function in some severe COPD cases. The maximum effectiveness of the newer long acting inhaled $\beta 2$ adrenergic agonists was found to be comparable to that of short acting $\beta 2$ adrenergic agonists. Salmeterol was found to produce modest or no change in lung function. In asthmatics, moreover, $\beta 2$ adrenergic agonists have been linked to an increased risk of death, worsened control of asthma, and deterioration in lung function.

Continuous treatment of asthmatic and COPD patients with the bronchodilators ipratropium bromide or fenoterol resulted in a decline in lung function, therefore indicating that they are not suitable for maintenance treatment. The most common immediate adverse effect of \(\beta \) adrenergic agonists, however, is tremors, which at high doses may cause a fall in plasma potassium, dysrhythmias, and reduced arterial oxygen tension. The combination of a \$2 adrenergic agonist with an anti-cholinergic drug provides little additional bronchodilation compared with either drug alone. Theophyllines have a small bronchodilatory effect in COPD patients but common adverse effects, such as nausea, diarrhea, headache, irritability, seizures, and cardiac arrhythmias, that occur at highly variable blood concentrations and, in many people, within the therapeutic range. In addition, they have a small therapeutic range given that blood concentrations of 15-20 mg/l are required for optimal effects. The theophylline dose must be adjusted individually based on smoking habits, infection, and other treatments, which is cumbersome. No inflammatory response to theophyllines, however, has been reported in COPD. Oral corticosteroids show some improvement in baseline functional effective volume in stable COPD patients whereas systemic corticosteroids have been found to produce some degree of osteoporosis and overt diabetes. The longer term use of oral corticosteroids may be useful in COPD, but its usefulness must be weighed against their substantial adverse effects. Inhaled corticosteroids have been found to have no significant short-term effect in airway hyper-responsiveness to histamine, but a small long-term effect on lung function, e.g., in pre-bronchodilator functional effective volume. The treatment of COPD patients with fluticasone showed a significant reduction in moderate and severe exacerbations, and a small but significant improvement in lung function and six minute walking distance. Oral prednisolone, inhaled

beclomethasone or their combination had no effects in COPD patients, but lung function improved oral corticosteroids. Mucolytics have a modest effect on frequency and duration of exacerbations but an adverse effect on lung function. No mucolytics, however, have a significant effect in people with severe COPD. N-acetylcysteine, moreover, produced gastrointestinal side effects. Long-term oxygen therapy administered to hypoxaemic COPD and congestive cardiac failure patients, had little effect on death in men. In women, however, oxygen decreased the rates of death.

Although the progress and symptoms of pulmonary fibrosis and other ILDs may vary from person to person, they have one common link: they affect parts of the lung. The inflammation of the walls of the bronchioles (small airways), it is called bronchiolitis, and of the walls and air spaces of the alveoli (air sacs), it is called alveolitis. When the inflammation involves the small blood vessels (capillaries) of the lungs, it is called vasculitis. The inflammation may heal, or it may lead to permanent scarring of the lung tissue (pulmonary fibrosis). This latter results in permanent loss of the tissues ability to breathe and carry oxygen, and the amount of scarring determines the level of disability a person experiences due to destruction of the air sacs and lung tissue between and surrounding the air sacs and the lung capillaries. When this happens, oxygen is generally administered to help improve breathing. Pulmonary fibrosis is generally caused by occupational and environmental exposure to irritants such as asbestos, silica and metal dusts, bacteria and animal dusts, gases and fumes, asbestosis and silicosis, infections that produce lung scarring, e.g., tuberculosis, connective or collagen tissue diseases such as Rheumatoid Arthritis, Systemic Sclerosis and Systemic Lupus Erythematosis, Idiopathic Pulmonary Fibrosis, Pulmonary Fibrosis of genetic/familial origin, and certain medicines. Many of the diseases are often named after the occupations with which they are associated, such as Grain handler's lung, Mushroom worker's lung, Bagassosis, Detergent worker's lung, Maple bark stripper's lung, Malt worker's lung, Paprika splitter's lung, and Bird breeder's lung.

10

20

30

50

"Idiopathic" (of unknown origin) pulmonary fibrosis (IPF) is the label applied when all other causes of interstitial lung disease have been ruled out, and is said to be caused by viral illness and allergic or environmental exposure (including tobacco smoke). Bacteria and other microorganisms are not thought to be a cause of IPF. There is also a familial form of the disease, known as familial idiopathic pulmonary fibrosis whose main symptom is shortness of breath. Since many lung diseases show this symptom, making a correct diagnosis is often difficult. The shortness of breath may first appear during exercise and the condition may progress then to the point where any exertion is impossible. Eventually resulting in shortness of breath even at rest. Other symptoms may include a dry cough (without sputum), and clubbing of the fingertips. Glucocorticosteroids are usually administered to treat inflammation with inconclusive results. Other drugs are added when it is clear that the steroids are in effective. Glucocorticosteroids are also used in combination with, for example, oxygen therapy in severe cases. Infection is prevented by administration of influenza and pneumococcal pneumonia vaccines. Lung biopsies are employed to assess the unpredictable response of patients to glucocorticosteroids or other immune system suppressants. Lung transplants are an ultimate option in severe cases of pulmonary fibrosis and other lung diseases. Pulmonary fibrosis may be caused by other specific diseases, such as sarcoidosis, a disease characterized by the formation of granulomas or areas of inflammatory cells, that may attack any organ of the body, most frequently the lungs, and shows enlarged lymph glands in the center of both lungs or lung tissue thickening. For many patients, sarcoidosis is a minor problem. Its symptoms including dry cough, shortness of breath, mild chest pain, fatigue, and weakness, and weight loss appears infrequently and stops even without medication. For others, it is a serious, disabling disease. Although almost everybody may develop the disease, it affects African-Americans more than members of any other race, most commonly young adults 20 to 40. Histiocytosis X, also associated with pulmonary fibrosis, seems to begin in the bronchioles or small airways of the lungs and their associated arteries and veins, and is generally followed by destruction of the bronchioles and narrowing and damaging of small blood vessels. Symptoms of this disease include a dry cough (without sputum), breathlessness upon exertion, and/or chest pain. In most cases the disease is chronic with loss of lung function, and glucocorticosteroid therapy is ineffective. Many histiocytosis X sufferers are current or former cigarette smokers mining workers, those exposed to asbestos or metal dusts or fibers, and agricultural workers exposed to particulate organic substances, such as moldy hay (Farmer's Lung). Asbestosis and silicosis are two occupational lung diseases whose causes are known. Asbestosis is caused by small needle-like particles of asbestos inhaled into the lungs that cause lung scarring or pulmonary fibrosis that may lead to lung cancer. Silicosis is a dust disease that comes from breathing in free crystalline silica dust, and is produced by all types of mining in which the ore, e. g. gold, lead, zinc, copper, iron, anthracite (hard) coal, and some bituminous (soft) coal, are extracted from quartz rock. Workers in foundries, sandstone grinding, tunneling, sandblasting,

concrete breaking, granite carving, and china manufacturing also inhaled tiny specks of silica that are carried down to the lung alveoli, where they lead to pulmonary fibrosis. There is no good therapy for this disease, but glucocorticosteroids alone, or combined drug therapy, and the hope of lung transplant are three treatments currently being tested. This patent provides the first effective therapy for these and other respiratory and lung ailments.

In the present context, the terms "adenosine, surfactant and ubiquinone depletion" are intended to encompass levels that are lowered or depleted in the subject as compared to previous levels in that subject, and levels, as well as levels in that subject but, because of some other reason, a therapeutic benefit would be achieved in the patient by modification of the levels of these agents as compared to previous levels.

The present invention, thus, provides a pharmaceutical or veterinary composition, comprising a pharmaceutically or veterinarily acceptable carrier or diluent, a first active agent comprising an anti-sense oligonucleotide(s) (oligo(s)), and a second active agent comprising an anti-inflammatory steroid and/or a ubiquinone, in amounts effective for alleviating a variety of airway or lung diseases, and other diseases such as cancers or their metastasis, among others. This invention provides the targeted administration of one or more oligo(s) in combination with a second active agent that has a more generalized effect as an anti-inflammatory, and alleviates bronchoconstriction, surfactant or ubiquinone depletion, and respiratory airway allergies. The oligos may be directed to one or more of a number of targets, and are delivered by any route, preferably through the airways to attain a fast and localized delivery through the mucosal tissue of the lungs to permit their hybridization to a desired target polynucleotide to prevent gene transcription and/or translation, thereby reducing, hampering or completely stopping gene expression. This may be attained by means of a solid powdered or liquid solution, suspension or emulsion, such as an aerosol, for administration into the respiratory airways, or direct instillation into the lung(s). While both active agents may be administered via the respiration, it is also possible to administer one by another route, e.g. steroids. The oligos employed in the composition are suitable for altering effects mediated by a variety of target polynucleic acids, such as regulatory nucleic acid sequences, genes and mRNAs, that are associated with diseases and conditions affecting the pulmonary and respiratory tracts, among others, and their associated effects, e. g. bronchoconstriction, respiratory tract inflammation, immune mediated reactions, lung surfactant deficiency(ies), respiratory allergy(ies) and other airway problems, which may be caused by different conditions, including pulmonary vasoconstriction, inflammation, respiratory allergies, asthma, impeded respiration, respiratory distress syndrome (RDS), pain, cystic fibrosis (CF), allergic rhinitis, pulmonary hypertension and fibrosis, sepsis, dispnea, acute respiratory distress syndrome (ARDS), as well as its variations in pregnant mothers and new-borns (RDS), pulmonary fibrosis, emphysema, chronic obstructive pulmonary disease (COPD), bronchitis, and cancers such as leukemias, lymphomas, carcinomas, and the like, e.g. lung cancer, colon cancer, breast cancer, pancreatic cancer, hepatocellular carcinoma, kidney cancer, melanoma, hepatic metastases, etc., as well as all cancers which may metastasize or have metastasized to the lung(s), including breast and prostate cancer. The present agents are also suitable for administration before, during and after other treatments, including radiation, chemotherapy, antibody therapy, phototherapy, and cancer and other surgeries.

The second active agent is selected from an anti-inflammatory steroid such as an adrenal androgen of the chemical formula

wherein R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{12} , R_{13} , R_{14} and R_{19} are independently H, OR, halogen, (C_1 - C_{10}) alkyl, (C_1 - C_{10}) alkyne, (C_1 - C_{10}) alkoxy, or two or more of R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{12} , R_{13} , R_{14} and R_{19} can be linked by combination of the atoms of C, O, N, S, P and Si to form a 3 to 15 member ring(s), in the α - and/or β - configuration;

45

40

5

10

R₅, R₆, R₁₀, and R₁₁ are independently OH, SH, H, halogen, pharmaceutically acceptable ester, pharmaceutically acceptable thioester, pharmaceutically acceptable ether, pharmaceutically acceptable inorganic esters, pharmaceutically acceptable monosaccharide, disaccharide or oligosaccharide, spirooxirane, spirothirane, -OSO₂R₂₀, -OPOR₂₀R₂₁, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene, (C₁-C₁₀) alkyne or OR₂₃, -SO₂O-CH₂CHCH₂OCOR₂₅

wherein, R₂₃ is hydrogen or SO₂OM, wherein M is selected from H, Na, sulfatide; or -PO₂O-CH₂CHCH₂OCOR₂₅

phosphatide $OCOR_{24}$, wherein R_{24} and R_{25} , which may be the same or different, are straight or branched (C_1-C_{20}) alkyl, (C_1-C_{20}) alkene, (C_1-C_{20}) alkyne, sugar, polyethyleneglycol (PEG) or glucuronide

 R_5 and R_6 taken together are =0;

10 R_{10} and R_{11} taken together are =0;

 R_{15} is (1) H, halogen, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene, (C_1-C_{10}) alkyne, or (C_1-C_{10}) alkoxy when R_{16} is $-C(O)OR_{22}$. (2) H, halogen, OH, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene or (C_1-C_{10}) alkyne, when R_{16} is halogen, OH, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene or (C_1-C_{10}) alkyne, (3) H, halogen, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkenyl, (C_1-C_{10}) alkynyl, formyl, (C_1-C_{10}) alkanoyl or epoxy when R_{16} is OH, (4) OR, SR, SH, H, halogen, pharmaceutically acceptable ester, pharmaceutically acceptable thioester, pharmaceutically acceptable ether, pharmaceutically acceptable thioether, pharmaceutically acceptable inorganic esters, pharmaceutically acceptable monosaccharide, disaccharide or oligosaccharide, spirooxirane, spirothirane, $-OSO_2R_{20}$ or $-OPOR_{20}R_{21}$ when R_{16} is H, or R_{15} and R_{16} taken together are =O;

20

25

35

5

R₁₇ and R₁₈ are independently (1) H, -OH, halogen, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene, (C₁-C₁₀) alkyne or -(C₁-C₁₀) alkoxy when R₆ is H OR, halogen, (C₁-C₁₀) alkyl or -C(O)OR₂₂, (2) H, (C₁-C₁₀ alkyl)_n amino, (C₁-C₁₀ alkene)_n amino, (C₁-C₁₀ alkyl)_n amino, ((C₁-C₁₀) alkyl)_n amino-(C₁-C₁₀) alkyl, ((C₁-C₁₀) alkyl, ((C₁-C₁₀) alkyl), amino-(C₁-C₁₀) alkyne)_n amino-(C₁-C₁₀) alkyl)_n amino-(C₁-C₁₀) alkyl)_n amino-(C₁-C₁₀) alkyne)_n amino-(C₁-C₁₀) alkyne)_n amino-(C₁-C₁₀) alkyne, ((C₁-C₁₀) alkyne)_n amino-(C₁-C₁₀) alkyne, ((C₁-C₁₀) alkyne)_n amino-(C₁-C₁₀) alkyne, ((C₁-C₁₀) alkyne)_n amino-(C₁-C₁₀) alkyne, ((C₁-C₁₀) alkyne)_n amino-(C₁-C₁₀) alkyne, (C₁-C₁₀) alkoxy - (C₁-C₁₀) alkyne, (C₁-C₁₀) alkanoyl, formyl, (C₁-C₁₀) carbalkoxy or (C₁-C₁₀) alkanoyloxy when R₁₅ and R₁₆ taken together are =O, (3) R₁₇ and R₁₈ taken together are =O; (4) R₁₇ and R₁₈ taken together with the carbon to which they are attached form a 3-6 member ring containing 0 or 1 oxygen atom; or (5) R₁₅ and R₁₇ taken together with the carbons to which they are attached form an epoxide ring; R₂₀ and R₂₁ are independently OH, pharmaceutically acceptable ester or pharmaceutically acceptable ether; R₂₂ is H, (halogen)_m (C₁-C₁₀) alkyne, (halogen)_m (C₁-C₁₀) alkyne, (C

a ubiquinone of the chemical formula

$$H_3CO$$
 CH_3
 $(CH_2CH=CCH_2)n-H$
 H_3CO
 CH_3
 $(COO.)$

 (CoQ_n) ,

wherein n is 1 to 12, the agent being present in an amount effective for treating respiratory lung diseases and conditions, or for reducing levels of, or sensitivity to, adenosine in a subject's tissue (s); and/or pharmaceutically acceptable salts of either of them.

10

15

25

35

40

45

One group of preferred steroids having a general formula (Ib) are 21-acetoxypregnenolone ((3\beta)-21-(acetyloxy)-3-hydroxypregn-5-en-20-one; Herloff and Inhoffen, US Patent No. 2,409,043); alclometasone ((7α, 11β, 16α)-7-Chloro-11, 17, 21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione; Green et al., US Patent No. 4,076,708, and Green and Shue, US Patent No. 4,124,707), or its 17,21-dipropionate form (C₂₈H₃₇ClO₇); algestone ((16α)-16,17-dihydroxypregn-4-ene-3,20-dione; Colton, US Patent No. 2,727,909, Hydorn et al., US Patent No. 3,165,541, and Diassi, US Patent No. 3,027,384), its cyclic acetal with acetone form (C₂₄H₃₄O₄), or its 16α-methyl ether form (C₂₂H₃₂O₄); amcinonide ((11β, 16α)-21-(acetyloxy)-16,17-[cyclopentylidenebis(oxy)]-9-fluoro-11hydroxypregna-1,4-di-ene-3,20-dione; Shultz et al., German Patent No. 2,437,847); beclomethasone ((11\beta,16\beta)-9chloro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione; British Patent No. 912,378, British Patent No. 901,093, Elks et al., Belgium Patent No. 649,170, and US Patent No. 3,312,590), its dipropionate form (C₂₈H₃₇ClO₇), or its monopropionate form; betamethasone ((11\beta, 16\beta)-9-fluoro-11, 17, 21-trihydroxy-16methylpregna-1,4-diene-3,20-dione; US Patent No. 3,053,865, and Amiard et al., US Patent No. 3,104,246), its 21acetate form (C₂₄H₃₁FO₆), its 21-adamantoate form (C₃₃H₄₃FO₆; Philips and English, German Patent No. 2,232,827), its 17-benzoate form (C₂₉H₃₃FO₆), its 17, 21-dipropionate form (C₂₈H₃₇FO₇), its 17-valerate form (C₂₇H₃₇FO₆; Dutch Patent Application No. 6,406,615), or its 21-phospate disodium salt form (C₂₂H₂₈FNa₂O₈P); budesonide ((11β, 16α)-16,17-[butylidenebis(oxy)]-11, 21-dihydropregna-1,4-diene-3,20-dione; Brattsand et al., German Patent No. 2,323,215, and US Patent No. 3,929,768); chloroprednisone ((6α)-chloro-17,21-dihydroxypregna-1,4-diene-3,11,20-trione; Batres et al., German Patent No. 1,079,042, and Ringold and Rosenkrantz, US Patent No. 2,957,895), or its 21-acetate from (C23H27ClO6); ciclesonide (Taylor et al., Am J Respir Crit Care Med (1999) 160(1), 237-43); clobetasol ((11β,16β)-21-chloro-9-fluoro-11,17-dihydroxy-16-methylpregna-1,4-diene-3,20-dione; Elks et al., German Patent No. 1,902,340, and US Patent No. 3,721,687), or its 17-propionate form (C₂₅H₃₂ClFO₅); clobetasone ((16β)-21-chloro-9-fluoro-17-hydroxy-16-methylpregna-1,4-diene-3,11,20-trione; Elks et al., German Patent No. 1,902,340, and US Patent No. 3,721,687), or its 17-butyrate form (C₂₆H₃₂CIFO₅); clocortolone ((6α,11β,16α)-9-chloro-6-fluoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione; Dutch Patent Application No. 6,412,708, Kasper and Philippson, German Patent No. 2,011,559, and US Patent No. 3,729,495), its 21-acetate form (C₂₄H₃₀ClFO₅), or its 21-pivalate form (C₂₇H₃₆ClFO₅); cloprednol ((11β)-6-chloro-11,17,21-trihydroxypregna-1,4,6-triene-3,20-dione; France Patent No. 1,271,981, and US Patent No.3,232,965); coroxon (phosphoric acid 3chloro-4-methyl-2-oxo-2H-1-benzopyran-7-yl diethyl ester; Fusco et al., US Patent No. 2,951,851); cortisone (17.21-dihydroxypregn-4-ene-3.11.20-trione; Reichstein, US Patent No. 2.403,683, and Gallagher, US Patent No. 2,447,325), its 21-acetate form (C₂₃H₃₀O₆), or its 21-cyclopentanepropionate form (C₂₉H₄₀O₆), examples of brand name for cortisone include Cortone Acetate, Adreson, Altesona, Cortelan, Cortistab, Cortisyl, Cortogen, Cortone, and Scheroson; cortivazol ((118,16\alpha)-21-(acetyloxy)-11,17-dihydroxy-6,16-dimethyl-2'-phenyl-2'H-pregna-2,4,6trieno[3,2-c]pyrazol-20-one; Tishler et al., US Patent No. 3,067,194, and US Patent No. 3,300,483); deflazacort ((11\beta,16\beta)-21-(acetyloxy)-11-hydroxy-2'-methyl-5'H-pregna-1,4-dieno[17,16-d]oxazole-3,20-dione; Nathansohn and Winters, Belgium Patent No. 679,820, British Patent No. 1,077,393, and US Patent No. 3,436,389); desonide (((11β,16α)11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione; Bernstein and Allen, US Patent No. 2,990,401, Lee et al., US Patent No. 3,536,586, and Diassi and Principe, US Patent No. 3,549,498); desoximetasone ((11β,16α)-9-fluoro-11, 21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione; Joly et al., France Patent No. 1,296,544, US Patent No. 3,099,654, Belgium Patent No. 614,196, and Kieslich et al., US Patent No. $((11\beta,16\alpha)-9-fluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione;$ 3.232,839): dexamethasone Muller et al., US Patent No. 3,007,923, Arth et al., German Patent No. 1,113,690, and British Patent No. 869,511), its 21-acetate form (C₂₄H₃₁FO₆), its 21-(3,3-dimethylbutyrate) form (C₂₈H₃₉FO₆; Chemerda et al., US Patent No. 2.939,873), its 21-diethylaminoacetate form (C₂₈H₄₁FNO₆), its 21-isonicotinate form (C₂₈H₄₁FNO₆), its 17,21dipropionate form (C₂₈H₃₇FNO₆), or its 21-palmitate form (C₃₈H₅₉FO₆), examples of brand name for dexamethasone include Decadron-oral, Dexameth, Dexone, Hexadrol-oral, Dexamethasone Intensol, Dexone 0.5, Dexone 0.75, Dexone 1.5, and Dexone 4; diflorasone ((6α,11β,16β)-6,9-difluoro-11,17,21-trihydroxy-16-methylpregna-1,4diene-3,20-dione; British Patent No. 881,334, British Patent No. 898,293, Lincoln et al., US Patent No. 3,557,158,

US Patent No. 3.980,778); diffucortolone ((6α,118,16α)-6.9-diffuoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione; Belgium Patent No. 639,708, and Kieslich et al., US Patent No.3,426,128), or its 21-valerate form (C₂₇H₃₆F₂O₅); difluprednate ((6α,11β)-21-(acetyloxy)-6,9-difluoro-11-hydroxy-17-(1-oxobutoxy)pregna-1,4-diene-3,20-dione; Ercoli and Gardi, South African Patent No. 680,386, and Ercoli et al., US Patent No. 3,780,177); enoxolone ((3β,20β)-3-hydroxy-11-oxoolean-12-en-29-oic acid; British Patent No. 833,184), or its 18α-hydrogen form; fluazacort ((11B,16B)-21-(acetyloxy)-9-fluoro-11-hydroxy-2'-methyl-5'H-pregna-1,4-dieno[17,16-d]oxazole-3,20-dione; British Patent No. 1,119,082, and US Patent No. 3,461,119); flucloronide ((6\alpha,11\beta,16\alpha)-9,11-dichlro-6-fluoro-21-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]-pregna-1,4-diene-3,20-dione; Bowers, US Patent No. 3,201,391); flumethasone ((6α,11β,16α)-6,9-difluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione; British Patent No. 902,292, and Lincoln et al., US Patent No. 3,499,016), its 21-acetate form (C₂₄H₃₀F₂O₆), or its 21-pivalate form (C₂₇H₃₆F₂O₆); flunisolide ((6α,11β,16α)-6-fluoro-11,21-dihydroxy-16,17-[(1-methylethylidene) bis(oxy)]pregna-1,4-diene-3,20-dione; British Patent No. 933,867, Ringold and Rosenkranz, US Patent No. 3,124,571, and Ringold et al., US Patent No. 3,126,375), or its 21-acetate form (C₂₆H₃₃FO₇); fluocinolone acetate ((6α,11β,16α)-6,9-difluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]-pregna-1,4-diene-3,20-dione; Mills and Bowers, US Patent No. 3,014,938, and Ringold et al., US Patent No. 3,126,375); fluocinonide ((6α,11β,16α)-21-(acetyloxy)-6,9-difluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]-pregna-1,4-diene-3,20-dione; British Patent No. 916,996, Ringlod and Rosenkranz, US Patent No. 3,124,571, Ringold et al., US Patent No. 3,126,375, and Fried, US Patent No. 3,197,469); fluocortin butyl ((6α,11β,16α)-6-fluoro-11-hydroxy-16-methyl-3,20-dioxopregna-1,4-dien-21-oic acid butyl ester; Laurent et al., German Patent Nos. 2,150,268 and 2,150,270, and US Patent No. 3,824,260); fluocortolone ((6α,11β,16α)-6-fluoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione; Belgium Patent 614,196, and Kieslich et al., US Patent No. 3,232,839), its 21-acetate form $(C_{24}H_{31}FO_5)$, its 21-hexanoate form $(C_{28}H_{39}FO_5)$, or its 21-pivalate form $(C_{22}H_{37}FO_5)$; fluorometholone $((6\alpha,11\beta)-9$ fluoro-11,17-dihydroxy-6-methylpregana-1,4-diene-3,20-dione; Lincoln et al., US Patent No. 2,867,637), or its 17acetate form (C₂₄H₃₁FO₅; Magerlein et al., US Patent No. 3,038,914); fluperolone acetate ([11β,17α,17(S)]-17-[2-(acetyloxy)-1-oxopropyl]-9-fluoro-11,17-dihydroxyandrosta-1,4-dien-3-one; Agnello and Laubach, US Patent No. 3,234,095); fluprednidene acetate ((11\beta)-21-(acetyloxy)-9-fluoro-11,17-dihydroxy-16-methylenepregna-1,4-diene-3,20-dione; Wendler et al., US Patent Nos. 3,065,239, 3,068,224, 3,068,226 and 3,136,760); fluprednisolone ((6α,11β)-6-fluoro-11,17,21-trihydroxypregna-1,4-diene-3,20-dione; Batres et al., German Patent No. 1,079,042, and Lettre and Hotz, German Patent No. 1,088,953), or its 21-acetate form (C₂₃H₂₉FO₆); flurandrenolide ((6α,11β,16α)-6-fluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregn-4-ene-3,20-dione; Ringold et al., German Patent No. 1,131,213, and US Patent No. 3,126,375); fluticasone propionate ($(6\alpha,11\beta,16\alpha,17\alpha)$ -6,9difluoro-11-hydroxy-16-methyl-3-oxo-17-(1-oxopropoxy)androsta-1,4-diene-17-carbothioic acid S-(fluoromethyl) ester; Dutch Patent Application No. 8,100,707, and Phillipps et al., US Patent No. 4,335,121); formocortal ((11β,16α)-21-(acetyloxy)-3-(2-chloroethoxy)-9-fluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]-20oxopregna-3,5-diene-6-carboxaldehyde; Camerino et al., France Patent No. 1,396,602, Dutch Patent Application No. 6,508,458, and US Patent No. 3,314,945); halcinonide ($(11\beta,16\alpha)$ -21-chloro-9-fluoro-11-hydroxy-16,17-[(1methyethylidene)bis(oxy)]pregn-4-ene-3,20-dione; Difazio and Augustine, German Patent No. 2,355,710, and US Patent No. 3,892,857); halobetasol propionate (6\(\pi\),11\(\beta\),16\(\beta\))-21-chloro-6,9-difluoro-11-hydroxy-16-methyl-17-(1oxopropoxy)pregna-1,4-diene-3,20-dione; Kalvoda and Anner, German Patent No. 2,743,069, and US Patent No. 4.619,921); halometasone ((6α,11β,16α)-2-chloro-6,9-difluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione; Anner et al., Dutch Patent Application No. 540,244, US Patent No. 3,652,554, and Swiss Patent No. 551,399), or its monohydrate form (C₂₂H₂₇ClF₂O₅•H₂O); halopredone acetate ((6β,11β)-17,21-bis(acetyloxy)-2bromo-6,9-difluoro-11-hydroxypregna-1,4-diene-3,20-dione; Riva and Toscano, German Patent No. 2,508,136, and Riva et al., US Patent No. 4,226,862); hydrocortamate (N,N-diethylglycine (11B)-11,17-dihydroxy-3,20dioxopregn-4-en-21-yl ester; Pinson and Laubach, German Patent No. 1,016,708, and Richter and Schenck, German Patent No. 1,037,451), or its hydrochloride form (C₂₇H₄₁NO₆•HCl); hydrocortisone ((11β)-11,17,21trihydroxypregn-4-ene-3,20-dione; Murray and Peterson, US Patent No. 2,602,769), its 21-acetate form (C₂₃H₃₂O₆), its 17-butyrate form (C₂₅H₃₆O₆), its 21-phosphate disodium salt form (C₂₁H₂₉Na₂O₈P), its 21-sodium succinate form (C₂₄H₃₃NaO₈), its 17-valerate form (C₂₆H₃₈O₆), or its cypionate form (Munson and Wilson, J Pharm Sci (1981) 70(2), 177-81), examples of brand name for hydrocortisone include Cortef, Hydrocortone, examples of brand name for hydrocortisone cypionate include Cortef Oral Suspension; lotepreduol etabonate ((11β,17α,)-17-

[(ethoxycarbonyl)oxy]-11-hydroxy-3-oxoandrosta-1,4-diene-17-carboxylic acid chloromethyl ester, Bodor, Belgium Patent No. 889,563, and US Patent No. 4,996,335); mazipredone ((11β)-11,17-dihydroxy-21-(4-methyl-1piperazinyl)pregna-1,4-diene-3,20-dione; Tuba et al., Hungarian Patent No. 150,350), or its hydrochloride form (C₂₆H₃₈N₂O₄•HCl); medrysone ((6α,11β)-11-hydroxy-6-methylpregn-4-ene-3,20-dione; Sebek et al., US Patent No. 2,864,837, and Spero and Thompson, US Patent No. 2,968,655); meprednisone ((16\beta)-17,21-dihydroxy-16methylpregna-1,4-diene-3,11,20-trione; British Patent No. 901,092, and Rausser and Oliveto, US Patent No. 3,164,618), or its 21-acetate form ($C_{24}H_{30}O_6$); methylprednisolone ((6α ,11 β)-11,17,21-trihydroxy-6-methylpregna-1,4-diene-3,20-dione; Sebek and Spero, US Patent No. 2,897,218, and Gould, US Patent No. 3,053,832), its 21acetate form (C₂₄H₃₂O₆), its 21-phosphate disodium salt form (C₂₂H₂₉Na₂O₈P), its 21-succinate sodium salt form (C₂₆H₃₃NaO₈), or its aceponate form (C₂₇H₃₆O₇), examples of brand name for methylprednisolone include Medrol-Oral; mometasone furoate ((11β,16α)-9,21-dichloro-17-[(2-furanylcarbonyl)oxy]-11-hydroxy-16-methylpregna-1,4diene-3,20-dione; Shapiro, European Patent Application No. 57,401, and US Patent No. 4,472,393); paramethasone $((6\alpha, 11\beta, 16\alpha)-6-fluoro-11, 17, 21-trihydroxy-16-methylpregna-1, 4-diene-3, 20-dione;$ Edwards Am. Chem. Soc. (1960) 82, 2318), its 21-acetate form ($C_{24}H_{31}FO_6$), its disodium phosphate form, or a mixture of its 21-acetate and disodium phosphate form; prednicarbate ((11\beta)-17[(ethoxycarbonyl)oxy]-11-hydroxy-21-(1oxopropoxy)pregna-1,4-diene-3,20-dione; Stache et al., Germany Patent No. 2,735,110, and US Patent No. 4,242,334); prednisolone ((11β)-11,17,21-trihydroxypregna-1,4-diene-3,20-dione; Nobile, US Patent Nos. 2,837,464 and 3,134,718), its 21-acetate form (C₂₃H₃₀O₆), its 21-tert-butylacetate form (C₂₇H₃₈O₆; Sarrett, US Patent No. 2,736,734), its 21-hydrogen succinate form (C₂₅H₃₂O₈), its 21-succinate sodium salt form (C₂₅H₃₁NaO₈; Shull and Kita, German Patent No. 1,045,400), its 21-stearoylgylcolate form (C41H64O8; Giraldi and Nannini, US Patent No. 3,171,846), its 21-m-sulfobenzoate sodium salt form (C₂₈H₃₁NaO₉S; (11β)-11,17-dihydroxy-21-[(3sulfobenzoyl)oxy]pregna-1,4-diene-3,20-dione monosodium salt; Allais and Girault, US Patent No. 3,032,568, Joly and Warnant, US Patent No. 3,037,034), or its 21-trimethylacetate form (C26H36O6; Joly and Warnant, US Patent No. 3,037,034), examples of brand name for prednisolone include Prelone, Delta-Cortef, Pediapred, Adnisolone, Cortalone, Deltacortril, Deltasolone, Deltastab, Di-Adreson F, Encortolone, Hydrocortancyl, Medisolone, Meticortelone, Opredsone, Panaafcortelone, Precortisyl, Prenisolona, Scherisolona, Scherisolone; prednisolone 21diethylaminoacetate (N,N-diethylglycine (11\beta)-11,17-dihydroxy-3,20-dioxopregna-1,4-dien-21-yl ester; British Patent No. 862,370), or its hydrochloride form (C₂₇H₃₉NO₆•HCl); prednisolone sodium phosphate (11,17dihydroxy-21-(phosphonooxy)pregna-1,4-diene-3,20-dione disodium salt; Sarett, US Patent No. 2,789,117, and Elks and Phillipps, US Patent No. 2,936,313); prednisone (17,21-dihydroxypregna-1,4-diene-3,11,20-trione; Oliveto 30 and Gould, US Patent No. 2,897,216, and Nobile, US Patent Nos. 2,837,464 and 3,134,718), or its 21-acetate form (C₂₁H₂₈O₆), examples of brand name for prednisone include Deltasone, Liquid Pred, Meticorten, Orasone 1, Orasone 5, Orasone 10, Orasone 20, Orasone 50, Prednicen-M, Prednisone Intensol, Sterapred, Sterapred DS, Adasone, Cartancyl, Colisone, Cordrol, Cortan, Dacortin, Decortis, Decortisyl, Delcortin, Dellacort, Delta-Dome, Deltacortene, Deltisona, Diadreson, Econosone, Encorton, Fernisone, Nisona, Novoprednisone, Panafcort, Panasol, Paracort, Parmenison, Pehacort, Predeltin, Prednicort, Prednicot, Prednidib, Predniment, Rectodelt, Ultracorten, Winpred; prednival ((11β)-11,21-dihydroxy-17-[(1-oxopentyl)oxy]pregna-1,4-diene-3,20-dione; Ercoli and Gardi, US Patent No. 3,152,154), or its 21-acetate form (C₂₈H₃₈O₇); prednylidene ((11β)-11,17,21-trihydroxy-16methylenepregna-1,4-diene-3,20-dione; Mannhardt et al., Tetrahedron Letters (1960) 16, 21), or its 21-40 diethylaminoacetate hydrochloride form (C28H39NO6•HCl; German Patent No. 1,134,074); rimexolone ((11β,16α,17β)-11-hydroxy-16,17-dimethyl-17-(1-oxopropyl)androsta-1,4-dien-3-one; Dutch Patent Application No. 7,300,313, and Woods et al., US Patent No. 3,947,478); rofleponide ((22R)-6α,9α-Difluoro-11β,21-dihydroxy-16α,17α-propylmethylenedioxypregn-4-ene-3,20-dione; Thalen and Wickstrom, Steroids (2000) 65(1), 16-23); tipredane ((11β, 17α)-17-(ethylthio)-9α-fluoro-11β-hydroxy-17-(methylthio) androsta-1,4-dien-3-one; Wojnar et al., Arzneimittelforschung (1986) 36(12), 1782-7); tixocortol ((11\beta)-11,17-dihydroxy-21-mercaptopregn-4-ene-3,20-dione; Simons et al., J Steroid Biochem (1980) 13, 311), or its 21-pivalate form (C₂₆H₃₈O₅S; (11β)-21-[(2,2dimethyl-1-oxopropyl)thio]-11,17-dihydroxypregn-4-ene-3,20-dione; Torossian et al., German Patent No. 2,357,778, and US Patent No. 4,014,909); triamcinolone ((11β,16α)-9-fluoro-11,16,17,21-tetrahydroxypregna-1,4diene-3,20-dione; Bernstein et al., US Patent No. 2,789,118, and Allen et al., US Patent No.3,021,347), or its 16,21diacetate form (C₂₅H₃₁FO₈; (11β,16α)-16,21-bis(acetyloxy)-9-fluoro-11,17-dihydroxypregna-1,4-diene-3,20-dione), examples of brand name for triamcinolone include Kenacort, Aristocort, Atolone, Sholog A, Tramacort-D, Tri-Med,

Triamcot, Tristo-Plex, Trylone D, U-Tri-Lone; Triamcinolone acetonide ((11β,16α)-9-fluoro-11,21-dihydroxy-16,17-[1-methylethylidenebis(oxy)]pregna-1,4-diene-3,20-dione; Bernstein and Allen, US Patent No. 2,990,401, and Hydorn, US Patent No. 3,035,050), its 21-acetate crystal form, its 21-disodium phosphate form (C₂₄H₃₀FNa₂O₉P), or its 21-hemisuccinate form (C₂₈H₃₅FO₉); triamcinolone benetonide ((11β,16α)-21-[3-(benzoylamino)-2-methyl-1-oxopropoxy]-9-fluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione; Cavazza et al., German Patent No. 2,047,218, and US Patent No. 3,749,712); and triamcinolone hexacetonide ((11β,16α)-21-(3,3-dimethyl-1-oxobutoxy)-9-fluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione; Nash and Naeger, US Patent No. 3,457,348). Preferably, the steroids comprises budesonide, testosterone, progesterone, estrogen, flunisolide, triamcinolone, beclomethasone, betamethasone, dexamethasone, fluticasone, methylprednisolone, prednisone, hydrocortisone, and mometasone. Another group of preferred steroids are mineralocorticoid steroids including aldosterone, deoxycorticosterone, deoxycorticosterone acetate and fludrocortisone. However, others are also suitable.

Also provided is a method for reducing or depleting adenosine levels, or treating hypersensitivity to adenosine, particularly in the lung, liver, heart and/or brain, or increasing levels of lung surfactant or of ubiquinone in the lung, heart or other tissues, and for treating various respiratory, lung and other diseases and their symptoms, by administering to a subject in need of such treatment a first active agent comprising the anti-sense oligo of the invention, and a second active agent comprising the AIS of chemical formula (Ia) and (Ib) exemplified by corticosteroids and dehydroepiandrosterones, analogues thereof, and pharmaceutically or veterinarily acceptable salts thereof, such as dehydroepiandrosterone sulfate (DHEA-S), and salts of the corticosteroids, and/or a ubiquinone of chemical formula (II) as described above, the active agents being present in amounts effective to reduce or deplete adenosine levels, or reduce adenosine hypersensitivity, or to increase lung surfactant levels or ubiquinone tissue levels, or to inhibit or control a variety of respiratory, lung and other diseases and conditions in the subject. Examples of non-glucocorticoid steroids that may be used to carry out this method are represented by the chemical formula (Ia) shown above.

15

25

Another group of preferred steroids for use in this invention are described below. The hydrogen atom at position 5 of the compound of chemical formula (Ia) may be present in the alpha or beta configuration, and the compound may comprise a mixture of both configurations. Compounds illustrative of compounds of chemical formula (I) above include DHEA, wherein R and R₁ each comprise hydrogen and the double bond is present; 16alpha bromodehydroepiandrosterone, where R comprises Br, R1 comprises H, and the double bond is present; 16alpha-fluorodehydroepiandrosterone, wherein R comprises F, R1 comprises H and the double bond is present; etiocholanolone, where R and R1 each comprise hydrogen and the double bond is absent (the single bond is present); and dehydroepiandrosterone sulphate (DHEA-S), wherein R comprises H, R1 comprises SO₂OM and M comprises sulphatide as defined above, and the double bond is present, among others. In the compound of formula I, R preferably comprises halogen, e.g. bromo, chloro, or fluoro, R1 comprises hydrogen, and the double bond is present. Most preferably the compound of Formula I comprises dehydroepiandrosterone sulphate and 16-αfluorodehydroepiandrosterone. The compounds of formula I may be made in accordance with procedures known in the art, or employing variations thereof that will be apparent to those skilled in the art. See, for example, U.S. Patent No. 4,956,355, UK Patent No. 2,240,472, EPO Patent Application No. 429,187, Patent Publication WO9104030A1; Abou-Gharbia M. et al., J. Pharm. Sci. 70: 1154-1157 (1981), Merck Index Monograph No. 7710, 11th Ed. (1989). Other preferred non-glucocorticoid steroids are those of the formulas (III) and (IV), wherein R15 and R16 together are =O, or where R5 is OH, or where R5 is -OSO2R20, or where R20 is H. Others, however, are also preferred and are encompassed by this patent.

"Corticosteroid", as used herein, means 21-carbon steroid hormone corticoids that bind to glucocorticoid receptors, having the chemical formula of (Ib). Corticosteroids are agonists for the glucocorticoid steroid receptor(s) and interact to promote a transcriptional response. The corticosteroids and other AIS may be used in conjunction with, and for reducing the amount of the oligo(s) employed for reducing inflammation and lung allergy(ies), reducing or depleting levels of, or reducing sensitivity to, adenosine, reducing adenosine receptor levels, producing bronchodilation, and/or for increasing levels of ubiquinone or lung surfactant in a subject, or for treating bronchoconstriction, lung inflammation or allergies or a respiratory or lung disease or condition. The anti-inflammatory steroid(s) may be administered per se or in the form of pharmaceutically acceptable salt, as discussed above. In general, the anti-inflammatory steroid(s), and its(their) salt(s) and crystal forms are suitable, and may be administered in a dosage of about 0.01, about 0.1, about 0.4, about 1, about 5, about 10, about 20 to about 4, about

30, about 70, about 100, about 300, about 1,000, about 3600 mg/kg body weight. These active compounds may be administered once or several times a day, or in any other regime, upon adjustment of the dose in accordance with the dosages of the other agents being administered.

The term "ubiquinone", as used herein, refers to a family of compounds having structures based on a ω 3-dimethoxy-5-methyl benzoquinone nucleus with a variable terpenoid acid chain containing on to twelve non-unsaturated trans-isoprenoid units. Such compounds are also known in the art as "Coenzyme Q_n", wherein n comprises 1 to 12, preferably n comprising 1 to 10, and may be referred to herein as compounds represented by the following chemical formula

$$H_3CO$$
 CH_3
 $CH_2CH=CCH_2)n-H$
 CH_3
 CH_3
 CH_3
 CH_3

wherein n comprises 1 to 10. In the method of the invention, another preferred ubiquinone is a compound according to the above formula, where n comprises 6 to 10, i.e. Coenzyme Q_{6-10} , and most preferably wherein n comprises 10, i.e. Coenzyme Q_{10} .

15

25

30

35

40

45

As discussed above, the "active agents or compounds" may be administered per se or in the form of pharmaceutically acceptable salts, or in the same formulation with the other active agents of the invention, e.g. corticosteroid(s) and/or ubiquinone(s) and the anti-sense oligo, either systemically or topically. In general, they are administered in an amount effective to treat respiratory conditions including bronchoconstriction, respiratory inflammation and allergies, allergic rhinitis, pulmonary hypertension and fibrosis, apnea, sepsis, emphysema, cancers, asthma, COPD, RDS, CF, ARDS, and the like, and/or to off-set lung surfactant depletion or ubiquinone depletion in the lungs and/or heart of the subject if induced by the administration of the anti-inflammatory steroid of the invention. The ubiquinone is preferably administered in a total amount per day of of about 0.1, about 1, about 5, about 10, about 15, about 30 to about 50, about 100, about 150, about 300, about 600, about 900, about 1200 mg/kg body weight per day. More preferred are about 1 to about 150 mg/kg, about 30 to about 100 mg/kg, and most preferred about 5 to about 50 mg/kg. The ubiquinone may be administered in one dose (once or several times a day), and its dose may be adjusted as is known in the art, depending on whether it is administered alone, or with the oligo and/or the anti-inflammatory steroid, and their amounts used. The dosage of the ubiquinone will vary depending upon the condition of the subject and route of administration. The ubiquinone may be administered by itself, or as a mixture of ubiquinones of varying side chain lengths, or concurrently, jointly prior to or subsequent to the anti-sense oligo and/or the anti-inflammatory steroid, for treating the overall symptoms described here, and/or the various diseases associated with them, including asthma, COPD, allergic rhinitis, pulmonary hypertension, vasoconstriction and fibrosis, and others described above. The phrase "concurrently administering", as used herein, means that the steroid, e. g. DHEA, DHEA-S or analogs of formulas (Ia) and (Ib), the anti-sense oligos, and the ubiquinone of chemical formula (II) are administered either (a) simultaneously in time, preferably by formulating the two active agents together in a common pharmaceutical carrier, or (b) at different times during the course of a common treatment schedule through the same or different routes of administration. In the latter case, for example the oligo may be administered once a week or its administration may be varied in accordance with its duration of action, while steroid(s) and ubiquinone(s) is(are) administered at times sufficiently close so that, in addition to its direct effect, the ubiquinone will be also off-setting any ubiquinone depletion in the subject's tissues, e. g. lungs and heart. This timing helps to prevent or counter-balance any deterioration of tissue, e. g. lung and heart, function that may result from the administration of the steroids or analogs thereof. Where the ubiquinone is formulated with a pharmaceutically acceptable carrier and other oral formulation components, it may be administered separately from the steroid and/or the oligo. For example, the steroid and the oligo may be administered into the respiration, by inhalation, nasally or into the lungs (by instillation) of the subject whereas the ubiquinone may be administered systemically. The ubiquinone may be formulated by any of the techniques set forth above.

The composition and formulations of this invention are highly efficacious for preventing and treating diseases and conditions associated with bronchoconstriction, difficult breathing, impeded and obstructed lung

airways, allergy(ies), inflammation and surfactant depletion, among others. Examples of diseases and conditions which are suitably treated by the present method are diseases and conditions, including Acute Respiratory Distress Syndrome (ARDS), asthma, adenosine administration e.g. in the treatment of SupraVentricular Tachycardia (SVT) and other arrhythmias, and in stress tests to hyper-sensitized individuals, ischemia, renal damage or failure induced by certain drugs, infantile respiratory distress syndrome, pain, cystic fibrosis, pulmonary hypertension, pulmonary vasoconstriction, emphysema, chronic obstructive pulmonary disease (COPD), lung transplantation rejection, pulmonary infections, and cancers such as leukemias, lymphomas, carcinomas, and the like, including colon cancer, breast cancer, lung cancer, pancreatic cancer, hepatocellular carcinoma, kidney cancer, melanoma, hepatic metastases, etc., as well as all types of cancers which may metastasize or have metastasized to the lung(s), including breast and prostate cancer. The invention will be mostly described with respect to the adenosine receptors as targets, although data on other targets is also provided, but is similarly applicable to any other target including the listed targets, with respect to the administration of anti-sense oligos. The examples provided below show a complete inhibition of adenosine receptor associated symptoms in a rabbit model for human bronchoconstriction, allergy(ies) and inflammation as well as the elimination of the ability of the adenosine receptor agonist par excellence, adenosine, to cause bronchoconstriction in hyper-responsive monkeys, which are animal models for human hyperresponsiveness to adenosine receptor agonists. The pharmaceutical composition and formulations of the invention, therefore, are suitable for preventing and alleviating the symptoms associated with stimulation of adenosine receptors, such as the adenosine A₁, A_{2a}, A_{2b}, and A₃ receptors, as well as other single or multiple targets. The compositions and formulations of this invention, thus, are also suitable for prevent the untoward side effects of adenosine-mediated hyperresponsiveness in certain individuals, which are generally seen in diseases affecting respiratory activity.

10

15

20

The method of the present invention may be used to treat airway and lung diseases and conditions in a subject of any kind and for any reason, for example, to reduced or eliminated with the intention that the adenosine content of anti-sense compounds, so as to prevent liberation of adenosine upon anti-sense degradation. Examples of diseases and conditions, which may be treated preventatively, prophylactically and therapeutically with the compositions and formulations of this invention, are pulmonary vasoconstriction, inflammation, allergies, asthma, allergic rhinitis, impeded respiration, Acute Respiratory Distress Syndrome (ARDS), renal damage and failure associated with ischemia as well as the administration of certain drugs, side effects associated with adenosine administration e.g. in SupraVentricular Tachycardia (SVT) and in adenosine stress tests, infantile Respiratory Distress Syndrome (infantile RDS), ARDS, pain, cystic fibrosis, pulmonary hypertension, pulmonary vasoconstriction, emphysema, chronic obstructive pulmonary disease (COPD), lung transplantation rejection, pulmonary infections, and cancers such as leukemias, lymphomas, carcinomas, and the like, e.g. colon cancer, breast cancer, lung cancer, pancreatic cancer, hepatocellular carcinoma, kidney cancer, melanoma, metastatic cancer such as hepatic metastases, lung, breast and prostate metastases, among others. The present compositions and formulations are suitable for administration before, during and after other treatments, including radiation, chemotherapy, antibody therapy, phototherapy and cancer, and other types of surgery. The present compositions and formulations may also be administered effectively as a substitute for therapies that have significant negative side effects. The terms "anti-sense" oligonucleotides generally refers to small, synthetic oligonucleotides, resembling single- and double-stranded DNA and RNA, which in this patent are applied to the inhibition of gene expression, e.g. by inhibition of a gene or target messenger RNA (mRNA). See, e.g. Milligan, J. F. et al., J. Med. Chem. 36(14), 1923-1937 (1993); Sharp, P.A. Genes & Development 15, 485-490, 2001; the relevant portion of which is hereby incorporated in its entirety by reference. For consistency's sake, all RNAs, DNAs and oligonucleotides are represented in this patent by a single strand in the 5' to 3' or 3' to 5' direction, when read from left to right, although their complementary and double-stranded sequence(s) is (are) also encompassed within the four corners of the invention. In addition, all nucleotide bases and amino acids are represented utilizing the recommendations of the IUPAC-IUB Biochemical Nomenclature Commission, or by the known 3-letter code (for amino acids). Nucleotide sequences are presented herein by single strand only, in the 5' to 3' direction, from left to right. In addition, nucleotide and amino acids are represented herein in the manner recommended by the IUPAC-IUB Biochemical Nomenclature Commission, or (for amino acids) by three letter code, in accordance with 37 CFR ' 1.822 and established usage. See, e.g., Patentin User Manual, 99-102 (Nov. 1990) (U.S. Patent and Trademark Office, Office of the Assistant Commissioner for Patents, Washington, D.C. 20231); U.S. Patent No. 4,871,670 to Hudson et al. at col. 3, lines 20-43. The present method utilizes anti-sense agents to inhibit or down-regulate gene expression of

target genes, including those listed in Tables 1 and 2 below. This is generally attained by hybridization of the antisense oligonucleotides to coding (sense) sequences of a targeted messenger RNA (mRNA), as is known in the art. The oligos of this invention may be obtained by first selecting fragments of a target nucleic acid having at least 4 contiguous nucleic acids selected from the group consisting of G and C, and then obtaining a first oligonucleotide 4 to 70 nucleotides long which comprises the selected fragment and preferably has a C and G nucleic acid content of up to and including about 20%, about 15%. The oligonucleotide(s) (oligo(s)) may include at least one unmethylated cytosine-guanine (CpG) dinucleotide. The CpG dinucleotide may be substituted for a methylated cytosine present in the anti-sense oligonucleotide(s). The CpG dinucleotide is n immunostimulating sequence and affects the immune response in a subject by activating natural killer cells (NK) or redirecting a subject's immune response from a Th2 to a Th1 response by inducing monocytic and other cells to produce Th1 cytokines. The oligo(s) containing at least one unmethylated CpG can be used for treating and/or preventing respiratory and pulmonary diseases including bronchoconstriction, impaired airways, decreased lung surfactant, asthma, rhinitis, acute respiratory distress syndrome (ARDS), infantile or maternal RDS, chronic obstructive pulmonary disease (COPD), allergies, impeded respiration, lung pain, cystic fibrosis (CF), infectious diseases, cancers such as leukemias, lung and colon cancer, and the like, and diseases whose secondary effects afflict the lungs. A "CpG" or "CpG motif" refers to nucleotides having a cytosine followed by a guanine linked by a phosphate bond. The term "methylated CpG" refers to the methylation of the cytosine on the pyrimidine ring, usually occurring the 5-position of the pyrimidine ring. The term "unmethylated CpG" refers to the absence of methylation of the cytosine on the pyrimidine ring. Methylation, partial removal, or removal of an unmethylated CpG motif in an oligo(s) is believed to reduce its effect. Methylation or removal of all unmethylated CpG motifs in an oligo(s) substantially reduces its effect. The effect of methylation or removal of a CpG motif is "substantial" if the effect is similar to that of an oligonucleotide that does not contain a CpG motif. Preferably the CpG oligonucleotide is in the range of about 8 to 30 bases in size. The oligo(s) can be synthesized de novo using any of a number of procedures well known in the art. For example, the b-cyanoethyl phosphoramidite method (Beaucage, S. L., and Caruthers, M. H., Tet. Let. 22:1859, 1981); nucleoside Hphosphonate method (Garegg et al., Tet. Let. 27;4051-4054, 1986; Froehler et al., Nucl. Acid. Res. 14:5399-5407, 1986; Garegg et al., Tet. Let. 27:4055-4058, 1986, Gaffney et al., Tet. Let. 29:2619-2622, 1988). These chemistries can be performed by a variety of automated oligonucleotide synthesizers available in the market. Alternatively, CpG dinucleotides can be produced on a large scale in plasmids, (see Sambrook, T., et al., Molecular Cloning: A Laboratory Manual, Cold Spring Harbor laboratory Press, New York, 1989) which after being administered to a subject are degraded into an oligo(s). An oligo(s) can be prepared from existing nucleic acid sequences (e.g., genomic or cDNA) using known techniques, such as those employing restriction enzymes, exonucleases or endonucleases. The exogenously administered agents of the invention decrease the levels of mRNA and protein encoded by the target gene and/or cause changes in the growth characteristics or shapes of the thus treated cells. See, Milligan et al. (1993); Helene, C. and Toulme, J. Biochim. Biophys. Acta 1049, 99-125 (1990); Cohen, J. S. D., Ed., Oligodeoxynucleotides as Anti-sense Inhibitors of Gene Expression; CRC Press: Boca Raton, FL (1987), the relevant portion of which is hereby incorporated in its entirety by reference.

10

50

The treatment of this invention enhances the effects of the oligonucleotide and the anti-inflammatory steroid(s) and/or ubiquinone(s) by combining them, either simultaneously, sequentially or separately, for reducing or depleting levels of, or reducing sensitivity to, adenosine, reducing levels of receptor(s), producing bronchodilation, or for increasing levels of ubiquinone or lung surfactant in a subject's tissue (s), or treating bronchoconstriction, lung inflammation or allergies or a respiratory or lung disease or condition, and/or for alleviating bronchoconstriction or lung inflammation or allergy(ies), or ubiquinone or lung surfactant depletion or hyposecretion, in a subject. When administered in combination, the dose of the oligonucleotide or the steroid(s) orubiquinone(s) may be decreased since they potentiate each other's effect. These agents may be administered before, simultaneously with, and/or after each other's administration. Accordingly, the details of administration of the effect enhancer including its amount, route, formulation, method, target organ and/or tissue may be determined as described throughout this specification. Similarly, other therapeutic or bioactive agents may be employed in accordance with this invention. Kits comprising the various agents described above are also part of this invention.

As used herein, "anti-sense oligonucleotide or anti-sense oligo" is generally a short sequence of synthetic nucleotide that hybridizes to any segment of a mRNA encoding a targeted protein under appropriate hybridization conditions and which, upon hybridization, causes a decrease in gene expression of the targeted protein. The terms "desAdenosine" (desA), "des-thymidine" (desT) and "des-uridine (desU) refer to oligonucleotides substantially

lacking either adenosine (desA) or thymidine (desT) (uracil (desU)). In some instances, the desA or desT (desU) sequences are naturally occurring, and in others they may result from substitution of an undesirable nucleotide (A) by another lacking its undesirable activity, such as acting as an agonist or having a triggering effect at the adenosine A receptor(s). In the present context, the substitution is generally accomplished by substitution of A with a "universal or alternative base", presently known in the art or to be ascertained at a later time. As used herein, the terms "prevent", "preventing", "treat" or "treating" refer to a preventative, prophylactic, maintenance, or therapeutic treatment which decreases the likelihood that the subject administered such treatment will manifest symptoms associated with adenosine receptor stimulation. The term "down-regulate" refers to inducing a decrease in production, secretion or availability and, thus, a decrease in concentration, of intracellular target product, be it a receptor, e. g. adenosine A1, A2b, A3, bradykinin 2B, GATA-3, or other receptors, or produce a stimulatory effect on a receptor such as the adenosine A2a receptor. The present technology relies on the design of anti-sense oligos targeted to genea and mRNAs associated with ailments involving nasal and lung airway(s) (respiratory tract) pathology(ies), and on their modification to reduce the potential occurrence of undesirable side effects caused by their release of adenosine upon breakdown, while preserving their activity and efficacy for their intended purpose. In this manner, the inventor targets a specific gene to design one or more anti-sense single or double stranded DNA or RNA oligonucleotide(s) (oligos) that selectively bind(s) to the corresponding gene or mRNA, and then reduces, if necessary, their content of adenosine via substitution with an alternative or a universal base, or an adenosine analog incapable of significantly, or having substantially reduced ability for, activating or antagonizing adenosine A_1 , A_{2b} or A₃ receptors or which may act as an agonist at the adenosine A_{2a} receptor. Any number of adenosines present may be substituted by an alternative and/or universal base, such as heteroaromatic bases, which binds to a thymidine or uridine base but has less than about 0.3 of the adenosine base agonist or antagonist activity at the adenosine A₁, A_{2a}, A_{2b} and A₃ receptors. Based on his prior experience in the field, the inventor reasoned that in addition to "downregulating" specific genes, he could increase the effect of the agent(s) administered by either selecting segments of RNA that are devoid, or have a low content, of thymidine (T) or uridine (U), or alternatively, substitute one or more adenosine(s) present in the designed oligonucleotide(s) with other nucleotide bases, so called universal bases, which bind to thymidine but lack the ability to activate adenosine receptors and otherwise exercise the constricting effect of adenosine in the lungs, etc. Given that adenosine (A) is a nucleotide base complementary to thymidine (T) or uridine (U), wherein when a U appears in the RNA, the anti-sense oligo will have an A at the same position.

10

20

30

40

50

In one aspect of this invention, the anti-sense oligonucleotide has a sequence which specifically binds to a portion or segment of a mRNA molecule which encodes or regulates the production of a protein associated with impeded breathing, allergy(ies), lung inflammation, depletion of lung surfactant or lowering of lung surfactant, airway obstruction, bronchitis, and the like. One effect of this binding is to reduce or even prevent the translation of the corresponding mRNA and, thereby, reduce the available amount of target protein in the subject's lung. In one preferred embodiment of this invention, the phosphodiester residues of the anti-sense oligonucleotide are modified or substituted. Chemical analogs of oligonucleotides with modified or substituted phosphodiester residues, e.g., to the methylphosphonate, the phosphotriester, the phosphorothioate, the phosphorodithioate, or the phosphoramidate, 2' methoxy ethyl and similar modifications, which increase the in vivo stability of the oligonucleotide are particularly preferred. The naturally occurring phosphodiester linkages of oligonucleotides are susceptible to some degree of degradation by cellular nucleases. Many of the residues proposed herein, on the contrary, are highly resistant to nuclease degradation. See, Milligan et al.; Cohen, J. S. D., supra. In another preferred embodiment of the invention, the oligonucleotides may be protected from degradation by adding a "3'-end cap" by which nucleaseresistant linkages are substituted for phosphodiester linkages at the 3' end of the oligonucleotide. See, Tidd, D. M. and Warenius, H.M., Be. J. Cancer 60: 343-350 (1989); Shaw, J.P. et al., Nucleic Acids Res. 19: 747-750 (1991), the relevant section of which are incorporated in their entireties herein by reference. Phosphoramidates, phosphorothioates, and methylphosphonate linkages all function adequately in this manner for the purposes of this invention, as do 2' modifications, such as 2' methoxy ethyl, and the like. The more extensive the modification of the phosphodiester backbone the more stable the resulting agent, and in many instances the higher their RNA affinity and cellular permeation. See, Milligan, et al., supra. In addition, a plurality of substitutions to the carbohydrate ring are also known to improve stability of nucleic acids. Thus, the number of residues which may be modified or substituted will vary depending on the need, target, and route of administration, and may be from 1 to all the residues, to any number in between. Many different methods for replacing the entire phosphodiester backbone with

novel linkages are known. See, Millikan et al, supra. Preferred backbone analogue residues include phosphoramidate, phosphorothioate, methylphosphonate, phosphorotriester, phosphorotriester, thioformacetal, phosphorodithioate, phosphoramidate, formacetal, triformacetal, thioether, carbamate, boranophosphate, 3'thioformacetal, 5'-thioether, carbonate, C5-substituted nucleotides, 5'-N-carbamate, sulfate, sulfonate, sulfamate, sulfonamide, sulfone, sulfite, 2'-O methyl, sulfoxide, sulfide, hydroxylamine, methylene(methylimino) (MMI), methoxymethyl (MOM), and methoxyethyl (MOE), and methyleneoxy(methylimino) (MOMI) residues, and combinations thereof. Phosphorothicate and methylphosphonate-modified oligonucleotides are particularly preferred due to their availability through automated oligonucleotide synthesis. See, Millikan et al, supra. Where appropriate, the agent of this invention may be administered in the form of their pharmaceutically acceptable salts, or as a mixture of the anti-sense oligonucleotide and its salt. In another embodiment of this invention, a mixture of 10 different anti-sense oligonucleotides or their pharmaceutically acceptable salts is administered. A single agent of this invention has the capacity to attenuate the expression of a target mRNA and/or various agents to enhance or attenuate the activity of a pathway. By means of example, the present method may be practiced by identifying all possible deoxyribonucleotide segments which are low in thymidine (T), ribonucleotides that are low in uridine (U), or deoxynucleotide segments low in adenosine (A) of about 7 or more mononucleotides, preferably up to about 60 mononucleotides, more preferably about 10 to about 36 mononucleotides, and still more preferably about 12 to about 21 mononucleotides, in a target mRNA or a gene, respectively. This may be attained by searching for nucleotide segments within a target sequence which are low in, or lack thymidine (DNA) or uridine (RNA), a nucleotide which is complementary to adenosine, or that are low in adenosine (gene), that are 7 or more nucleotides long. In most cases, this search typically results in about 10 to 30 such sequences, i.e. naturally lacking or having less than about 40% adenosine, anti-sense oligonucleotides of varying lengths for a typical target mRNA of average length, i.e., about 1800 nucleotides long. Those with high content of T, U or A, respectively, may be fixed by substitution of a universal base for one or more As. The agent(s) of this invention may be of any suitable length, including but not limited to, about 7 to about 60 nucleotides long, preferably about 12 to about 45, more preferably up to about 30 nucleotides long, and still more preferably up to about 21, although they may be of other lengths as well, depending on the particular target and the mode of delivery. The agent(s) of the invention may be directed to any and all segments of a target RNA. One preferred group of agent(s) includes those directed to an mRNA region containing a junction between an intron and an exon. Where the agent is directed to an intron/exon junction, it may either entirely overlie the junction or it may be sufficiently close to the junction to inhibit the splicing-out of the intervening exon during processing of precursor mRNA to mature mRNA, e.g. with the 3' or 5' terminus of the antisense oligonucleotide being positioned within about, for example, within about 2 to 10, preferably about 3 to 5, nucleotide of the intron/exon junction. Also preferred are anti-sense oligonucleotides which overlap the initiation codon, and those near the 5' and 3' termini of the coding region. The flanking regions of the exons may also be targeted as well as the spliced segments in the precursor mRNAs. The mRNA sequences of the adenosine receptors and of many other targets are derived from the DNA base sequence of the gene expressing either receptors, e. g. the adenosine receptors, the enzymes, factors, or other targets associated with airway disease. For example, the sequence of the genomic human A₁ adenosine receptor is known and is disclosed in U.S. Patent No. 5,320,963 to Stiles, G., et al. The A3 adenosine receptor has been cloned, sequenced and expressed in rat (see, Zhou, F., et al., P.N.A.S. (USA) 89: 7432 (1992)) and human (see, Jacobson, M. A., et al., U.K. Patent Application No. 9304582.1 (1993)). The sequence of the adenosine A_{2b} receptor gene is also known. See, Salvatore, C. A., Luneau, C. J., Johnson, R. G. and Jacobson, M., Genomics (1995), the relevant portion of which is hereby incorporated in its entirety by reference. The sequences of many of the remaining exemplary target genes are also known. See, GenBank, NIH. The sequences of those genes whose sequences are not yet available may be obtained by isolating the target segments applying technology known in the art. Once the sequence of the gene, its RNA and/or the protein are known, an anti-sense oligonucleotides may be produced according to this invention as described above to reduce the production of the targeted protein in accordance with standard techniques. The sequences for the adenosine A22 bradykinin, and other genes as well as methods for preparation of oligonucleotides are also known as those of many other target genes and mRNAs for which this invention is suitable. Thus, anti-sense oligonucleotides that downregulate the production of target sequences associated with airway disease, including the adenosine A1, A2a, A2b, A3, bradykinin, GATA-3, COX-2, and many other receptors, may be produced in accordance with standard techniques. Examples of diseases and conditions which are suitably treated by the present method are diseases and conditions, including Acute Respiratory Distress Syndrome (ARDS), asthma, adenosine administration e.g. in the

treatment of SupraVentricular Tachycardia (SVT) and other arrhythmias, and in stress tests to hyper-sensitized individuals, ischemia, renal damage or failure induced by certain drugs, infantile respiratory distress syndrome, pain, cystic fibrosis, pulmonary hypertension, pulmonary vasoconstriction, emphysema, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, and cancers such as leukemias, lymphomas, carcinomas, and the like, including colon cancer, breast cancer, lung cancer, pancreatic cancer, hepatocellular carcinoma, kidney cancer, melanoma, hepatic metastases, etc., as well as all types of cancers which may metastasize or have metastasized to the lung(s), including breast and prostate cancer.

The adenosine receptors discussed above are mere examples of the high power of the inventor's technology. In fact, a large number of genes may be targeted in a similar manner by the present agent(s), to reduce or down-regulate protein expression. This targeting may be attained by selecting a single target, or multiple targets. In the latter case, the oligos targeted to different sequences may be mixed for their administration or they may be multiple targeted anti-sense oligos (MTAs) in accordance with one embodiment of this invention; that is, the MTA sequence binds to more than one target polynucleotide, be it DNA or RNA. By means of example, if the target disease or condition is one associated with impeded or reduced breathing, bronchoconstriction, chronic bronchitis, pulmonary bronchoconstriction and/or hypertension, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, allergy, asthma, cystic fibrosis, respiratory distress syndrome, cancers, which either directly or by metastasis afflict the lung, the present method may be applied to a list of potential target mRNAs, which includes the targets listed in Table 1 and Table 2 below, among others. The antisense agent(s) of the invention have a low A content to prevent its liberation upon in vivo degradation of the agent(s). For example, if the system is the pulmonary or respiratory system, a large number of genes is involved in different functions, including those listed in Table 1 below.

Table 1: Pulmonary and Inflammatory Targets

10

45

NFkB Transcription Factor Interleukin-8 Receptor (IL-8 R)
Interleukin-5 Receptor (IL-5R) Interleukin-4 Receptor (IL-4R)

25 Interleukin-3 Receptor (IL-3R) Interleukin-1β (IL-1β)

Interleukin- 1β Receptor (IL- 1β R) Eotaxin

 Tryptase
 Major Basic Protein

 β 2-adrenergic Receptor Kinase
 Endothelin Receptor A

 Endothelin Receptor B
 Preproendothelin

Bradykinin B2 Receptor (B2BR)

Interleukin-1 (IL-1)

Interleukin-9 (IL-9)

Interleukin-1 (IL-11)

Interleukin-1 (IL-11)

Interleukin-1 (IL-11)

Interleukin-1 (IL-11)

Interleukin-1 (IL-11)

Inducible Nitric Oxide Synthase Cyclooxygenase (COX)

35 Intracellular Adhesion Molecule 1 (ICAM-1) Vascular Cellular Adhesion Molecule

Substance P (VCAM)

Rantes Endothelial Leukocyte Adhesion Molecule Endothelin ETA Receptor

(ELAM-1)

Cyclooxygenase-2 (COX-2) GM-CSF, Endothelin-1
Monocyte Activating Factor Neutrophil Chemotactic Factor

Neutrophil Elastase Defensin 1,2,3

Muscarinic Acetylcholine Receptors Platelet Activating Factor

 Tumor Necrosis Factor α
 5-lipoxygenase

 Phosphodiesterase IV
 Substance P

 Substance P Receptor
 Histamine Receptor

Chymase CCR-1 CC Chemokine Receptor

Interleukin-2 (IL-2) Interleukin-4 (IL-4)
Interleukin-12 (IL-12) Interleukin-5 (IL-5)
Interleukin-6 (IL-6) Interleukin-7 (IL-7)

50 Interleukin-8 (IL-8) Interleukin-12 Receptor (IL-12R)

Interleukin-7 Receptor (IL-7R) Interleukin-1 (IL-1)

Interleukin-14 Receptor (IL-14R) Interleukin-14 CCR-2 CC Chemokine Receptor CCR-3 CC Chemokine Receptor CCR-4 CC Chemokine Receptor CCR-5 CC Chemokine Receptor **Prostanoid Receptors GATA-3 Transcription Factor** Neutrophil Adherence Receptor MAP Kinase Interleukin-15 Receptor (IL-15R) Interleukin-15 (IL-15) Interleukin-11 Receptor (IL-11R) Interleukin-11 (IL-11) **NFAT Transcription Factors** STAT 4 MCP-2 $MIP-1\alpha$ 10 MCP-3 MCP-4 Phospholipase A2 Cyclophillin (A, B, etc.) Metalloproteinase Basic Fibroblast Growth Factor CSBP/p38 MAP Kinase Tryptase Receptor PDG2 Interleukin-3 (IL-3) Cyclosporin A - Binding Protein 15 Interleukin-10 (IL-10) α4β1 Selectin FK506-Binding Protein α4β7 Selectin Fibronectin cMad CAM-1 LFA-1 (CD11a/CD18) LFA-1 Selectin PECAM-1. 20 C3bi PSGL-1 P-Selectin E-Selectin CD-34 L-Selectin Mac-1 (CD11b/CD18) p150,95 Fucosyl transferase VLA-4 25 STAT-1 STAT-2 CD11b/CD18 CD-18/CD11a ICAM2 and ICAM3 C5a CCR1, CCR2, CCR4, CCR5 CCR3 (Eotaxin Receptor) AP-1 Transcription Factor LTB-4 30 Protein kinase C Cysteinyl Leukotriene Receptor IkB Kinase 1 & 2 Tachykinnen Receptors (tach R) (e.g., Substance P, NK-1 & NK-3 Receptors) Interleukin-2 Receptor (IL-2R) STAT 6 c-mas NF-Interleukin-6 (NF-IL-6) Interleukin-10 Receptor (IL-10R) Interleukin-3 (IL-3) Interleukin-2 Receptor (IL-2R) Interleukin-13 (IL-13) Interleukin-12 Receptor (IL-12R) Interleukin-6 Receptor (IL-6R) Interleukin-14 (IL-14) Interleukin-16 (IL-16) Interleukin-13 Receptor (IL-13R) Interleukin-16 Receptor (IL-16R) Medullasin Adenosine A₁ Receptor (A₁ R) Tryptase-I Adenosine A₃ Receptor (A₃ R) Adenosine A_{2b} Receptor (A_{2b} R) STAT-3 β Tryptase Adenosine A2a Receptor (A2a R) IgE Receptor β Subunit (IgE R β) Fc-epsilon receptor CD23 antigen IgE Receptor α Subunit (IgE R α) IgE Receptor Fc Epsilon Receptor (IgERFc ξ R) Substance P Receptor Histidine decarboxylase Tryptase-1 Eosinophil Cationic Protein Prostaglandin D Synthase Eosinophil Peroxidase Eosinophil Derived Neurotoxin Endothelial Nitric Oxide Synthase **Endothelial Monocyte Activating Factor** Cathepsin G Neutrophil Oxidase Factor Interleukin-8 Receptor α Subunit (IL-8 R α) Macrophage Inflammatory Protein-1-**Endothelin Receptor ET-B** Alpha/Rantes Receptor

H2A histone family, member N Tubulin, beta polypeptide ELL gene (11-19 lysine-rich leukemia gene) 7-dehydrocholesterol reductase

ADP-ribosylation factor-like 7 Karyopherin alpha 2 (RAG cohort 1, importin alpha 1)

EST (AI038433) EST (AI122689) EST (AI092623) ESTs (AI095492) ESTs (AI138216) ESTs (AI128305) ESTs (AI125228) ESTs (AI041482)

ESTs (AI051839) Homo sapiens mRNA; cDNA DKFZp434A1716

ESTs (AI096522) ESTs (AI122807) 10 ESTs (AI041212) EST (AI125651) EST (AI024215) Enolase 1, (alpha)

Homo sapiens mRNA; cDNA DKFZp564H0764 EST (AI034360)

Homo sapiens mRNA for KIAA1363 protein, partial cds

Potassium voltage-gated channel, shaker-related subfamily, beta member 2 ER-associated DNAJ; ER-associated Hsp40 co-chaperone; hDj9; ERj3

ESTs, Weakly similar to p38 protein [H.sapiens] (AA906703) CGI-142 ESTs (AA463249)

Homo sapiens clone 25058 mRNA sequence ESTs (R49144) Squamous cell carcinoma antigen 1 ESTs (AA425700) Myosin X ESTs (AA459692)

CD44 antigen (homing function and Indian blood group system) Epithelial protein lost in neoplasm beta

Coagulation factor III (thromboplastin, tissue factor)

ESTs (AA909635) Adducin 1 (alpha)

5' Nucleotidase (CD73)

20

25 ESTs, Moderately similar to semaphorin C [M.musculus] (AA293300)

ESTs (AA278764) ESTs (AA678160) Calmodulin 2 (phosphorylase kinase, delta) ESTs (R42770)

Chloride intracellular channel 1 High-mobility group (nonhistone chromosomal) protein 17

Filamin B, beta (actin-binding protein-278)

Ubiquitin carrier protein Tubulin, alpha 1 (testis specific)

30 Transglutaminase 2 (C polypeptide, protein-glutamine-gamma-glutamyltransferase)

Sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican)

Proteasome (prosome, macropain) 26S subunit, non-ATPase, 2

Stanniocalcin

Low density lipoprotein receptor (familial hypercholesterolemia)

Plectin 1, intermediate filament binding protein, 500kD

S100 calcium-binding protein A2 Immediate early response 3

Calpain, large polypeptide L2 Pleckstrin homology-like domain, family A, member 1

Melanoma adhesion molecule

Tubulin, beta polypeptide

CD44 antigen (homing function and Indian blood group system)

Programmed cell death 5 Hexokinase 1

Vascular endothelial growth factor Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)

Calumenin Syntaxin 11

Diphtheria toxin receptor (heparin-binding epidermal growth factor-like growth factor)

Fn14 for type I transmenmbrane protein Nef-associated factor 1 High-mobility group (nonhistone chromosomal) protein isoforms I and Y

Collagen, type XVII, alpha 1 ESTs (N58473)

Farnesyl-diphosphate farnesyltransferase 1 RNA helicase-related protein

Interferon stimulated gene (20kD) 50

Catechol-O-methyltransferase

Steroid-5-alpha-reductase, alpha polypeptide 1 (3-oxo-5 alpha-steroid delta 4-dehydrogenase alpha 1)

Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)

C-terminal binding protein 1

Laminin, alpha 3 (nicein (150kD), kalinin (165kD), BM600 (150kD), epilegrin)

Collagen, type XVII, alpha 1 Keratin 18 Heparan sulfate (glucosamine) 3-O-sulfotransferase 1

Tubulin, alpha 2 Adenylyl cyclase-associated protein

Forkhead box D1 Cathepsin C

ESTs, Highly similar to AF151802 1 CGI-44 protein [H.sapiens] (T74688)

Ribonucleotide reductase M2 polypeptide

Laminin, gamma 2 (nicein (100kD), kalinin (105kD), BM600 (100kD), Herlitz junctional epidermolysis bullosa))

Homo sapiens mRNA; cDNA DKFZp586P1622 (from clone DKFZp586P1622)

0 ESTs, Weakly similar to /prediction (AA284245)

Lactate dehydrogenase A

15

25

45

50

Note that in the parantheses after "EST(s)" is GENABNK ACESSION NO.

These genes, and others, are involved in the normal functioning of respiration as well as in diseases associated with respiratory pathologies, including cystic fibrosis, asthma, pulmonary hypertension and vasoconstriction, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, chronic bronchitis, respiratory distress syndrome (ARDS), allergic rhinitis, lung cancer and lung metastatic cancers and other airway diseases, including those with inflammatory response.

Anti-sense oligos to the target receptors, e. g. the adenosine A₁, A_{2a}, A_{2b}, and A₃ receptors, CCR3 (chemokine receptors), bradykinin 2B, VCAM (vascular cell adhesion molecule), and eosinophil receptors, among others, have been shown to be effective in down-regulating the expression of their genes. Some of these act to alleviate the symptoms or reduce respiratory ailments and/or inflammation, for example, by "down regulation" of the adenosine A₁, A_{2a}, A_{2b}, and/or A₃ receptors and CCR3, bradykinin 2B, VCAM (vascular cell adhesion molecule) and eosinophil receptors. These agents may be utilized by the present method alone or in conjunction with antisense oligos targeted to other genes to validate pathway and/or networks in which they are involved. For better results, the oligos are preferably administered directly into the respiratory system, e.g., by inhalation or other means, of the experimental animal, so that they may reach the lungs without widespread systemic dissemination. This permits the use of low agent doses as compared with those administered systemically or by other generalized routes and, consequently, reduces the number and degree of undesirable side effects resulting from the agent's widespread distribution in the body. The agent(s) of this invention has (have) been shown to reduce the amount of receptor protein expressed by the tissue. These agents, thus, rather than merely interacting with their targets, e.g. a receptor, lower the number of target proteins that other drugs may interact with. In this manner, the present agent(s) afford(s) extremely high efficacy with low toxicity. Anti-sense oligonucleotides to the A₁, A_{2b}, A₃, bradykinin B2, GATA-3, VCAM (vascular cell adhesion molecule), eosinophil receptors, and COX-2 receptors, among others, have been shown to be effective in the down-regulation of the respective receptor proteins in the cell. One novel feature of this treatment, as compared to traditional treatments for adenosine-mediated bronchoconstriction, is that administration is direct to the lungs, or in situ to other tissues, organs or systems of the body. Additionally, a receptor protein itself is reduced in amount, rather than merely interacting with a drug, and toxicity is reduced. Other proteins that may be targeted with anti-sense agents for the treatment of lung conditions include, but are not limited to: CCR3 (chemokine) receptors, human A_{2a} adenosine receptor, human A_{2b} adenosine receptor, human IgE receptor β , human Fc-epsilon receptor CD23 antigen, human histidine decarboxylase, human beta tryptase, human tryptase-I, human prostaglandin D synthase, human cyclooxigenase-2, human eosinophil cationic protein, human eosinophil derived neurotoxin, human eosinophil peroxidase, human intercellular adhesion molecule-1 (ICAM-1), human vascular cell adhesion molecule-1 (VCAM-1), human endothelial leukocyte adhesion molecule-1 (ELAM-1), human P selectin, human endothelial monocyte activating factor, human IL-3, human IL-4, human IL-5, human IL-6, human IL-8, human monocyte-derived neutrophil chemotactic factor, human neutrophil elastase, human neutrophil oxidase factor, human cathepsin G, human defensin 1, human defensin 3, human macrophage inflammatory protein-1-alpha, human muscarinic acetylcholine receptor HM3, human fibronectin, human GM-CSF, human tumor necrosis factor α human leukotriene C4 synthase, human major basic protein, and human endothelin 1. Although not intended to be exclusive, a more extensive list of genes and sequences are provided below. Some of these act to alleviate the symptoms or reduce respiratory ailments and/or inflammation, for example, by "down regulation" of the adenosine A1, A20, A2b, and/or A3 receptors and CCR3, bradykinin 2B, VCAM (vascular cell adhesion molecule) and eosinophil receptors. These agents are preferably administered directly into the respiratory system, e.g., by

inhalation or other means, so that they may reach the lungs without widespread systemic dissemination. This permits the use of substantially lower doses of the agent of the invention as compared with those administered by the prior art, systemically or by other generalized routes and, consequently, reduce undesirable side effects resulting from the agent's widespread distribution in the body. The agent(s) of this invention has (have) been shown to reduce the amount of receptor protein expressed by the tissue. These agents, thus, rather than merely interacting with their targets, e.g. a receptor, lower the number of target proteins that other drugs may interact with. In this manner, the present agent(s) afford(s) extremely high efficacy with low toxicity. In these latter targets, and in target genes in general, it is particularly imperative to eliminate or reduce the adenosine content of the corresponding anti-sense oligonucleotide to prevent their breakdown products from liberating adenosine.

10

30

As used herein, the term "treat" or "treating" refers to a treatment which decreases the likelihood that the subject administered such treatment will manifest symptoms of the respiratory, lung or other diseases. The term "downregulate" refers to inducing a decrease in production, secretion or availability (and thus a decrease in concentration) of the targeted intracellular protein. The present invention is concerned primarily with the treatment of human subjects. However, the agents and methods disclosed here may also be employed for veterinary purposes, such as is the case in the treatment of other mammals, such as cattle, horses, wild animals, zoo animals, and domestic animals, e. g. dogs and cats. Targeted proteins may be prokaryotic or eukaryotic or mammalian and more preferably of the same species as the subject being treated. In general, "anti-sense" refers to the use of small, synthetic oligonucleotides, resembling single-stranded DNA, to inhibit gene expression by inhibiting the function of the target messenger RNA (mRNA). Milligan, J. F. et al., J. Med. Chem. 36(14), 1923-1937 (1993). In the present invention, inhibition of gene expression of the A₁ or A₃ adenosine receptor is desired. Gene expression is inhibited through hybridization to coding (sense) sequences in a specific messenger RNA (mRNA) target by hydrogen bonding according to Watson-Crick base pairing rules. The mechanism of anti-sense inhibition is that the exogenously applied oligonucleotides decrease the mRNA and protein levels of the target gene or cause changes in the growth characteristics or shapes of the cells. Id. See, also Helene, C. and Toulme, J., Biochim. Biophys. Acta 1049, 99-125 (1990); Cohen, J. S. D., Ed., Oligodeoxynucleotides as Anti-sense Inhibitors of Gene Expression; CRC Press: Boca Raton, FL (1987). As used herein, "anti-sense oligonucleotide" is defined as a short sequence of synthetic nucleotide that (1) hybridizes to any sense or anti-sense sequence in a mRNA or DNA which codes for the targeted protein or their double stranded counterparts, according to in vitro or in vivo hybridization conditions, described below, and (2) upon hybridization causes a decrease in gene expression of the target, e.g. adenosine or other receptor(s). The receptors discussed above are mere examples of the high power of the present technology. In fact, a large number of genes and mRNAs may be targeted in a similar manner by the present methods, to significantly down-regulate or obliterate their protein expression and observe any changes wrought to one or more functions within a system, e.g. the respiratory system and other lung disease associated targets. By means of example, in the respiratory system, the targets may be associated with difficulties of breathing, bronchoconstriction, inflammation, allergic rhinitis, chronic bronchitis, surfactant depletion, and others associated with diseases and conditions such as chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, inhalation burns, Acute Respiratory Distress Syndrome (ARDS), cystic fibrosis, pulmonary fibrosis, radiation pulmonitis, tonsilitis, emphysema, dental pain, oral inflammation, joint pain, esophagitis, cancers afflicting the respiratory system either directly such as lung cancer, esophageal cancer, and the like, or indirectly by means of metastases, among others. These functions are of great interest because of their association with respiratory dysfunction, as is the case in asthma, allergies, allergic rhinitis, pulmonary bronchoconstriction and hypertension, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary infections, allergy, asthma, cystic fibrosis (CF), Acute Respiratory Distress Syndrome (ARDS) as well as infantile and pregnancyrelated RDS, cancer, etc., which either directly or by metastasis afflict the lung, the present anti-sense oligonucleotides may be directed to a list of target mRNAs, which includes the targets listed in Table 1 above, among others.

Oligonucleotides, whether DNA or RNA, may be synthesized by methods known in the art that need not be further described here. The low adenosine oligos of this invention may be obtained by first selecting fragments of a target nucleic acid having at least 4 contiguous nucleic acids selected from the group consisting of G and C and/or having a specific type and/or extent of activity, and then obtaining a first oligonucleotide 4 to 60 nucleotides long which comprises the selected fragment and has a thymidine (T) or uridine (U) nucleic acid content of up to and including about 15%, preferably, about 12%, about 10%, about 7%, about 5%, about 3%, about 1%, and more

preferably no thymidine or uridine. In one preferred embodiment, oligo(s) have a higher than natural content of Cs and Gs (orCpGs) to produce immunostimulation. The latter step may be conducted by obtaining a second oligonucleotide 4 to 60 nucleotides long comprising a sequence which is anti-sense to the selected fragment, the second oligonucleotide having an adenosine base content of up to and including about 15%, preferably about 12%, about 10%, about 7%, about 5%, about 3%, about 1%, and more preferably no adenosine. When the selected fragment comprises at least one thymidine or uridine base, an adenosine base may be substituted in the corresponding anti-sense nucleotide fragment with a universal base selected from the group consisting of heteroaromatic bases which bind to a thymidine or uridine base but have less than about bout 10%, preferably less than about 1%, and more preferably less than about 0.3% of the adenosine base agonist activity at the adenosine A₁, A_{2a}, A_{2b} and A₃ receptors, and heteroaromatic bases which have no activity at the adenosine A_{2a} receptor, when validating in the respiratory system. Other adenosine activities in other systems may be determined in other systems, as appropriate. The analogue heteroaromatic bases may be selected from all pyrimidines and purines, which may be substituted by O, halo, NH2, SH, SO, SO2, SO3, COOH and branched and fused primary and secondary amino, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, alkoxy, alkenoxy, acyl, cycloacyl, arylacyl, alkynoxy, cycloalkoxy, aroyl, arylthio, arylsulfoxyl, halocycloalkyl, alkylcycloalkyl, alkenylcycloalkyl, alkynylcycloalkyl, haloaryl, alkylaryl, alkenylaryl, alkynylaryl, arylalkyl, arylalkenyl, arylalkynyl, arylcycloalkyl, which may be further substituted by O, halo, NH2, primary, secondary and tertiary amine, SH, SO, SO2, SO3, cycloalkyl, heterocycloalkyl and heteroaryl. The pyrimidines and purines may be substituted at all positions as is known in the art, but preferred are purines that are substituted at positions 1, 2, 3, 6 and/or 8, and pyrimidines that are substituted at 2, 3, 4, 5 and/or 6. More preferred are pyrimidines and purines such as those having the chemical formula

20

25

30

35

PYRIMIDINES

wherein R¹, R², R³, R⁴, and R⁵ are independently H, alkyl, alkenyl or alkynyl and R³ is H, aryl, dicycloalkyl, dicycloalkynyl, dicycloalkynyl, cycloalkyl, cycloalkynyl, O-cycloalkyl, O-cycloalkyl, O-cycloalkynyl, NH₂-alkylamino-ketoxyalkyloxy-aryl, or mono or dialkylaminoalkyl-N-alkylamino-SO₂aryl, and R4 and R5 are independently R1 and together are R3, and the pyrimidines and purines optionally comprise theophylline, caffeine, dyphylline, etophylline, acephylline piperazine, bamifylline, enprofylline or xantine, among others. Similar modifications in the sugar are also embodiments of this invention. Reduced adenosine content of the anti-sense oligos corresponding to the thymidines (T) present in the target DNA or uridines (U) in the target RNA serves to prevent the breakdown of the oligos into products that free adenosine into the system, e.g. the lung, brain, heart, kidney, etc., tissue environment and, thereby, to prevent any unwanted effects due to it. By means of example, the NfkB transcription factor may be selected as a target, and its mRNA or DNA searched for low thymidine (T), low uridine (U) or desthymidine (desT) or desuridine (desU) fragments. Only desU and desT segments of the mRNA or DNA are selected which, in turn, will produce desA anti-sense as their complementary strand. When a number of DNA or RNA that are desT or desU segments are found, the sequence of the anti-sense segments may be deduced. Typically, about 10 to 30 and even larger numbers of desA anti-sense sequences may be obtained. These anti-sense sequences may include some or all desA anti-sense oligonucleotide sequences

corresponding to desU or desT segments of the mRNA or DNA of the target, such as anyone of those shown in Table 1 above, in Table 2 below, and others associated with functions of the brain, cardiovascular and renal systems, and many others. For each of the original desA anti-sense oligonucleotide sequences corresponding to the target gene, e.g. the NFkB transcription factor, typically about 10 to 30 sequences may be found within the target gene or RNA which have a low content of thymidine (DNA) or uridine (RNA). In accordance with this invention, the selected fragment sequences may also contain a small number of thymidine (DNA) or uridine (RNA) nucleotides within the secondary or tertiary or quaternary sequences. In some cases, a large adenosine content may suffice to render the anti-sense oligonucleotide less active or even inactive against the target. In accordance with this invention, these so called "non-fully desA" sequences may preferably have a content of adenosine of less than about 15%, about 12%, about 10%, about 7%, about 5%, and about 2% adenosine. Most preferred is no adenosine content (0%). In some instances, however, a higher content of adenosine is acceptable and the oligonucleotides still fail to show detrimental "adenosine activity". A particular important embodiment is that where the adenosine nucleotide is "fixed" or replaced by a "universal or alternative" base that may base-pair with similar or equal affinity to two or more of the four nucleotides present in natural DNA: A, G, C, and T.

A universal or alternative base is defined in this patent as any compound, more commonly an adenosine analogue, which has substantial capacity to hybridize to thymidine or uridine, while at the same time having reduced, or substantially lacking, ability to bind adenosine receptors or other molecules through which adenosine may exert an undesirable side effect in the experimental animal or in a cell system. Alternatively, adenosine analogs which completely fail to activate, or have significantly reduce ability for activating, adenosine receptors, such as the adenosine A₁, A_{2b} and/or A₃ receptors, most preferably A₁ receptors, and those that may even act as agonists of the adenosine A2a, receptor, may be used. One example of a universal base is 2'-deoxyribofuranosyl-(5-mitroindole), and an artisan will know how to select others. This "fixing" step generates further novel sequences, different from those anti-sense to the ones found in nature, that permits the anti-sense oligonucleotide to bind, preferably equally well, with the target RNA. Other examples of universal or alternative bases are 2'-deoxyribosyl-(5-nitroindole). Other examples of universal bases are 3 - nitropyrrole - 2' - deoxynucleoside, 5 - nitro-indole, 2' - deoxyribosyl - (5 nitroindole), 2'-deoxyribofuranosyl - (5-nitroindole), 2' - deoxyinosine, 2' -deoxynebularine, 6H, 8H-3,4dihydropyrimido [4, 5 - c] oxazine - 7 - one and 2 - amino - 6 -methoxy aminopurine. In addition to the above, Universal bases which may be substituted for any other base although with somewhat reduced hybridization potential, include 3 - nitropyrrole - 2' - deoxynucleoside 2' - deoxyribofuranosyl - (5 - nitroindole), 2' - deoxyinosine and 2' - deoxynebularine (Glen Research, Sterling, VA). More specific mismatch repairs may be made using "P" nucleotide, 6H, 8H - 3, 4 - dihydropyrimido [4,5 - c] [1, 2] oxazin - 7 - one, which base pairs with either guanosine (G) or adenosine (A) and "K" nucleotide, 2 - amino - 6 - methoxyaminopurine, which base pairs with either cytidine (C) or thymidine (T)-uridine (U), among others. Others that are known in the art or will become available are also suitable. See, for example, Loakes, D. and Brown, D. M., Nucl. Acids Res. 22:4039-4043 (1994); Ohtsuka, E. et al., J. Biol. Chem. 260(5):2605-2608 (1985); Lin, P.K.T. and Brown, D. M., Nucleic Acids Res. 20(19):5149-5152 (1992; Nichols, R. et al., Nature 369(6480): 492-493 (1994); Rahmon, M. S. and Humayun, N. Z., Mutation Research 377 (2): 263-8 (1997); Amosova, O., et al., Nucleic Acids Res. 25 (10): 1930-1934 (1997); Loakes D. & Brown, D. M., Nucleic Acids Res. 22 (20): 4039-4043 (1994), the entire sections relating to universal bases and their preparation and use in nucleic acid binding being incorporated herein by reference. When non-fully desT sequences are found in the naturally occurring target, they typically are selected so that about 1 to 3 universal base substitutions will suffice to obtain a 100% "desA" anti-sense oligonucleotide. Thus, the present method provides either anti-sense oligonucleotides to different targets which are low in, or devoid of, A content, as well as anti-sense oligonucleotides where one or more adenosine nucleotides, e. g. about 1 to 3, or more, may be "fixed" by replacement with a "universal" or "replacement" base. Universal bases are known in the art and need not be listed herein. An artisan will know which bases may act as universal bases, and replace them for A. Table 2 below provides a selected number of targets to which the agents of the invention are effectively applied. Others, however, may also be targeted.

	Table 2:	Cancer Targets
Transforming	Therapy	
Oncogenes	Targets	
ras	thymidylate synthetase	
src	thymidylate synthetase	

15

50

myc dihydrofolate reductase
bcl-2 thymidine kinase
deoxycytidine kinase
ribonucleotide reductase
Angiogenesis factors Adhesion Molecules
Oncogenes Folate Pathway Enzymes
DNA repair genes (One Carbon Pool)

Telomerase

HMG CoA Reductase Farnesyl Transferase

Glucose-6-Phosphate Transferase Akt2 (Bases 1-1715)

Akt3 (1-1547)

Ampiregulin (1-1230))

Ap-2 (1-1391)

15 Ap-2 Beta

10

Ap-2 Gamma Sphingomyelinase

Beta-2-Adernergic Receptor

Beta Catenin

20 E2F-Related Transcription Factor

HM bFGF

B-cell translocation gene 1 (BTG1)

cyclin-dependent kinase 2 (CDK2)

cyclin-dependent kinase 2 (CDK2)

25 cyclin-dependent kinase 3 (CDK3)

cyclin-dependent kinase 4 (CDK4)

cyclin-dependent kinase 5 (CDK5)

c-ets-1 proto-oncogene

checkpoint kinase Chk1 (CHK1)

30 type IV collagenase

40

50

hepatocyte growth factor receptor (c-met)

MYB proto-oncogene protein (MYB)

A group of preferred targets for the treatment of cancer are genes associated with any of different types of cancers, or those generally known to be associated with malignancies, whether they are regulatory or involved in the production of RNA and/or proteins. Examples are transforming oncogenes, including, but not limited to, ras, src, myc, and BCL-2, among others. Other targets are those to which present cancer chemotherapeutic agents are directed to, such as various enzymes, primarily, although not exclusively, thymidylate synthetase, dihydrofolate reductase, thymidine kinase, deoxycytidine kinase, ribonucleotide reductase, and the like. The present technology is particularly useful in the treatment of cancer ailments given that traditional cancer therapies are fraught with the unresolved problem of selectively killing cancer cells while preserving normal living cells from the devastating effects of treatments such as chemotherapy, radiotherapy, and the like. The present technology provides the ability of selectively attenuating or enhancing a desired pathway or target. This approach provides a significant advantage over standard treatments of cancer because it permits the selection of a pathway, including primary, secondary and possibly tertiary targets, which are not generally expressed simultaneously in normal cells. Thus, the present agent may be administered to a subject to cause a selective increase in toxicity within tumor cells that, for instance, express all three targets while normal cells that may expresses only one or two of the targets will be significantly less affected or even spared. A group of preferred targets for the treatment of cancers are genes associated with different types of cancers, or those generally known to be associated with malignancies, whether they are regulatory or involved in the production of RNA and/or proteins. Examples are transforming oncogenes, including, but not limited to, ras, src, myc, and BCL-2, among others. Other targets are those to which present cancer chemotherapeutic agents are directed to, such as various enzymes, primarily, although not exclusively, thymidylate synthetase, dihydrofolate

reductase, thymidine kinase, deoxycytidine kinase, ribonucleotide reductase, and the like.

10

In one embodiment, at least one of the genes or mRNAs to which the oligo of the invention is targeted encodes or is involved in the regulation of a protein such as transcription factors, stimulating and activating factors, intracellular and extracellular receptors and peptide transmitters in general, interleukins, interleukin receptors, chemokines, chemokine receptors, endogenously produced specific and non-specific enzymes, immunoglobulins, antibody receptors, central nervous system (CNS) and peripheral nervous and non-nervous system receptors, CNS and peripheral nervous and non-nervous system peptide transmitters, adhesion molecules, defensines, growth factors, vasoactive peptides and receptors, and binding proteins, among others; or the mRNA is corresponding to an oncogene and other genes associated with various diseases or conditions. Examples of target proteins are eotaxin, major basic protein, preproendothelin, eosinophil cationic protein, P-selectin, STAT 4, MIP-1α, MCP-2, MCP-3, MCP-4, STAT 6, c-mas, NF-IL-6, cyclophillins, PDG2, cyclosporin A-binding protein, FK5-binding protein, fibronectin, LFA-1 (CD11a/CD18), PECAM-1, C3bi, PSGL-1,CD-34, substance P, p150,95, Mac-1 (CD11b/CD18), VLA-4, CD-18/CD11a, CD11b/CD18, C5a, CCR1, CCR2, CCR4, CCR5, and LTB-4, among others. Others are, however, suitable, as well. In another embodiment, at least one of the mRNAs to which the oligo is targeted encodes intracellular and extracellular receptors and peptide transmitters such as sympathomimetic receptors, parasympathetic receptors, GABA receptors, adenosine receptors, bradykinin receptors, insulin receptors, glucagon receptors, prostaglandin receptors, thyroid receptors, androgen receptors, anabolic receptors, estrogen receptors, progesterone receptors, receptors associated with the coagulation cascade, adenohypophyseal receptors, adenohypophyseal peptide transmitters, and histamine receptors (HisR), among others. However others are also contemplated. The encoded sympathomimetic receptors and parasympathomimetic receptors include acetylcholinesterase receptors (AcChaseR) acetylcholine receptors (AcChR), atropine receptors, muscarinic receptors, epinephrine receptors (EpiR), dopamine receptors (DOPAR), and norepinephrine receptors (NEpiR), among others. Further examples of encoded receptors are adenosine A₁ receptor, adenosine A_{2b} receptor, adenosine A₃ receptor, endothelin receptor A, endothelin receptor B, IgE high affinity receptor, muscarinic acetylcholine receptors, substance P receptor, histamine receptor, CCR-1 CC chemokine receptor, CCR-2 CC chemokine receptor, CCR-3 CC chemokine receptor (Eotaxin Receptor), interleukin-1 β receptor (IL-1 β R), interleukin-1 receptor (IL-1R), interleukin-1\(\beta\) receptor (IL-1\(\beta\)R), interleukin-3 receptor (IL-3R), CCR-4 CC chemokine receptor, cysteinyl leukotriene receptors, prostanoid receptors, GATA-3 transcription factor receptor, interleukin-1 receptor (IL-1R), interleukin-4 receptor (IL-4R), interleukin-5 receptor (IL-5R), interleukin-8 receptor (IL-8R), interleukin-9 receptor (IL-9R), interleukin-11 receptor (IL-11R), sympathomimetic receptors, parasympathomimetic receptors, GABA receptors, adenosine receptors, bradykinin receptors, e.g. bradykinin B2 receptor, insulin receptors, glucagon receptors, prostaglandin receptors, thyroid receptors, androgen receptors, anabolic receptors, estrogen receptors, progesterone receptors, receptors associated with the coagulation cascade, adenohypophyseal receptors, and histamine receptors (HisR). Others are also contemplated even though not listed herein. The encoded enzymes for development of the oligos of the invention include synthetases, kinases, oxidases, phosphatases, reductases, polysaccharide, triglyceride, and protein hydrolases, esterases, elastases, and , polysaccharide, triglyceride, lipid, and protein synthases, among others. Examples of target enzymes are tryptase, inducible nitric oxide synthase, cyclooxygenase (Cox), MAP kinase, eosinophil peroxidase, β2-adrenergic receptor kinase, leukotriene c-4 synthase, 5-lipooxygenase, phosphodiesterase IV, metalloproteinase, tryptase, CSBP/p38 MAP kinase, neutrophil elastase, phospholipase A2, cyclooxygenase 2 (Cox-2), fucosyl transferase, chymase, protein kinase C, thymidylate synthetase, dihydrofolate reductase, thymidine kinase, deoxycytidine kinase, and ribonucleotide reductase, among others. Any enzyme associated with a disease or condition, however, is suitable as a target for this invention. Suitable encoded factors for application of this invention are, among others, NfkB transcription factor, granulocyte macrophage colony stimulating factor (GM-CSF), AP-1 transcription factor, GATA-3 transcription factor, monocyte activating factor, neutrophil chemotactic factor, granulocyte/macrophage colony-stimulating-factor (G-CSF), NFAT transcription factors, platelet activating factor, tumor necrosis factor α (TNF α), and basic fibroblast growth factor (BFGF). Additional factors are also within the invention even though not specifically mentioned. Suitable adhesion molecules for use with this invention include intracellular adhesion molecules 1 (ICAM-1), 2 (ICAM-2) and 3 (ICAM-3), vascular cellular adhesion molecule (VCAM), endothelial leukocyte adhesion molecule-1 (ELAM-1), neutrophil adherence receptor, mad CAM-1, and the like. Other known and unknown factors (at this time) may also be targeted herein. Among the cytokines, lymphokines and chemokines preferred are interleukin-1 (IL-1), interleukin-1\(\beta\) (IL-1\(\beta\)), interleukin-3 (IL-3), interleukin-4 (IL-4), interleukin-5 (IL-5), interleukin-8 (IL-8),

interleukin-9 (IL-9), interleukin-11 (IL-11), CCR-5 CC chemokine, and Rantes. Other examples include H2A histone family, member N, Tubulin, beta polypeptide, ELL gene (11-19 lysine-rich leukemia gene) 7dehydrocholesterol reductase, ADP-ribosylation factor-like 7, Karyopherin alpha 2 (RAG cohort 1, importin alpha 1), EST (AI038433), EST (AI122689), EST (AI092623), ESTs (AI095492), ESTs (AI138216), ESTs (AI128305), ESTs (AI125228), ESTs (AI041482), ESTs (AI051839), Homo sapiens mRNA; cDNA DKFZp434A1716, ESTs (AI096522), ESTs (AI122807), ESTs (AI041212), EST (AI125651), Enolase 1, (alpha), EST (AI024215), EST (AI034360), Homo sapiens mRNA; cDNA DKFZp564H0764, Homo sapiens mRNA for KIAA1363 protein, partial cds, Potassium voltage-gated channel, shaker-related subfamily, beta member 2, ER-associated DNAJ; ERassociated Hsp40 co-chaperone; hDj9; ERj3, ESTs, Weakly similar to p38 protein [H.sapiens] (AA906703), CGI-142, ESTs (AA463249), Homo sapiens clone 25058 mRNA sequence ESTs (R49144), Squamous cell carcinoma antigen 1, ESTs (AA425700), Myosin X, ESTs (AA459692), Epithelial protein lost in neoplasm beta, CD44 antigen (homing function and Indian blood group system), Coagulation factor III (thromboplastin, tissue factor), ESTs (AA909635), Adducin 1 (alpha), 5' Nucleotidase (CD73), ESTs, Moderately similar to semaphorin C [M.musculus] (AA293300), ESTs (AA278764), ESTs (AA678160), Calmodulin 2 (phosphorylase kinase, delta), ESTs (R42770), Chloride intracellular channel 1, High-mobility group (nonhistone chromosomal) protein 17, Ubiquitin carrier protein, Tubulin, alpha 1 (testis specific), Transglutaminase 2 (C polypeptide, protein-glutamine-gammaglutamyltransferase), Sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican), Proteasome (prosome, macropain) 26S subunit, non-ATPase, 2, Tubulin, beta polypeptide, Filamin B, beta (actin-binding protein-278), Stanniocalcin, Low density lipoprotein receptor (familial hypercholesterolemia), Plectin 1, intermediate filament binding protein, 500kD, S100 calcium-binding protein A2, Immediate early response 3, Calpain, large polypeptide L2, Pleckstrin homology-like domain, family A, member 1, Melanoma adhesion molecule, CD44 antigen (homing function and Indian blood group system), Programmed cell death 5, Hexokinase 1, Vascular endothelial growth factor, Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor), Calumenin, Syntaxin 11, Diphtheria toxin receptor (heparin-binding epidermal growth factor-like growth factor), Fn14 for type I transmenmbrane protein, Nef-associated factor 1, High-mobility group (nonhistone chromosomal) protein isoforms I and Y. Catechol-O-methyltransferase, C-terminal binding protein 1, Collagen, type XVII, alpha 1, ESTs (N58473), Farnesyl-diphosphate farnesyltransferase 1 RNA helicase-related protein, Interferon stimulated gene (20kD), Steroid-5-alpha-reductase, alpha polypeptide 1 (3-oxo-5 alpha-steroid delta 4-dehydrogenase alpha 1), Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase), Laminin, alpha 3 (nicein 30 (150kD), kalinin (165kD), BM600 (150kD), epilegrin), Collagen, type XVII, alpha 1, Keratin 18, Heparan sulfate (glucosamine) 3-O-sulfotransferase 1, Tubulin, alpha 2, Adenylyl cyclase-associated protein, Forkhead box D1, Cathepsin C, ESTs, Highly similar to AF151802_1 CGI-44 protein [H.sapiens] (T74688), Ribonucleotide reductase M2 polypeptide, Laminin, gamma 2 (nicein (100kD), kalinin (105kD), BM600 (100kD), Herlitz junctional epidermolysis bullosa)), Homo sapiens mRNA; cDNA DKFZp586P1622 (from clone DKFZp586P1622), ESTs, Weakly similar to /prediction (AA284245), and Lactate dehydrogenase A. Others, however, may also be targeted, as they are known to be involved in specific diseases or conditions to be treated, or for their generic activities, such as inflammation. Examples of defensins for the practice of this invention are defensin 1, defensin 2, and defensin 3, and of selectins are 04\$\beta\$1 selectin, 04\$\beta\$7 selectin, LFA-1 selectin, E-selectin, P-selectin, and L-selectin. Examples of oncogenes, although not an all inclusive list, are ras, src, myc, and bcBCL. Others, however, are also suitable for use 40 with this invention.

The agents administered in accordance with this invention are preferably designed to be anti-sense to one or more target genes and/or mRNAs usually related in origin to the species to which it is to be administered, although they may be directed, to foreign sequences, e.g. of viruses. When treating humans, the agents are preferably designed to be anti-sense to a human gene or RNA. The agents of the invention encompass oligonucleotides which are anti-sense to naturally occurring DNA and/or RNA sequences, fragments thereof of up to a length of one (1) base less than the targeted sequence, preferably at least about 7 nucleotides long, oligos having only over about 0.02%, more preferably over about 0.1%, still more preferably over about 1%, and even more preferably up to about 4% adenosine nucleotides, and up to about 30%, more preferably up to about 15%, still more preferably up to about 10% and even more preferably up to about 5%, adenosine nucleotide, or lacking adenosine altogether, and oligos in which one or more of the adenosine nucleotides have been replaced with so-called universal bases, which may pair up with thymidine or uridine nucleotides but fail to substantially trigger adenosine receptor activity. Examples of human sequences and fragments, which are not limiting, of anti-sense oligonucleotide of the

50

invention are the following fragments as well as shorter segments of the fragments and of the full gene or mRNA coding sequences, exons and intron-exon junctions encompassing preferably 7, 10, 15, 18 to 21, 24, 27, 30, n-1 nucleotides for each sequence, where n is the sequence's total number of nucleotides. These fragments may be selected from any portion of the longer oligo, for example, from the middle, 5'- end, 3'- end or starting at any other site of the original sequence. Of particular importance are fragments of low adenosine nucleotide content, that is, those fragments containing less than or about 30%, preferably less than or about 15%, more preferably less than or about 10%, and even more preferably less than or about 5%, and most preferably those devoid of adenosine nucleotide, either by choice or by replacement with a universal base in accordance with this invention. The agent of the invention includes as a most preferred group sequences and their fragments where one or more adenosines present in the sequence have been replaced by a universal base (B), as exemplified here. Similarly, also encompassed are all shorter fragments of the B-containing fragments designed by substitution of B(s) for adenosine(s) (A(s)) contained in the sequences, fragments thereof or segments thereof, as described above. A limited list of sequences and fragments is provided below.

Some of the examples of anti-sense oligonucleotide sequence fragments target the initiation codon of the respective gene, and in some cases adenosine is substituted with a universal or alternative base adenosine analogue denoted as "B", which lacks ability to bind to the adenosine A₁ and/or A₃ receptors. In fact, such replacement nucleotide acts as a "spacer". Many of the examples shown below provide one such sequence and many fragments overlapping the initiation codon, preferably wherein the number of nucleotides n is about 7, about 10, about 12, about 15, about 18, about 21 and up to about 28, about 35, about 40, about 50, about 60.

20 Human Receptor-related Antisense Polynucleotide

Human Receptor-related Antisense Polynucleotide 5'GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGGG C TGCTTTTCT TTTCTGGGCC TCTGTGGTCT CCCTTCTCC GCCCTTCTTG CTGGGCCTCT GCTGCTGCTG GTGCTGTGGC CCCCGTACA CCGAGGAGCC CATGATGGGC ATGCCACAGA CGACAGGCGT BCBCCGBGGB GCCCBTGBTG GGCBTGCCBC BGBCGBCBGG C GGC GCC GTG CCG CGT CTT CCC CGG GCG CCC CCT CCC CTC TTG CTC GGG TCC CCG TG ACA GCG CGT CCT GTG TCT CCA GCA GCA TGG CCG GGC CAG CTG GGC CCC BCB GCG CGT CCT GTG TCT CCB GCB GCB TGG CCG GGC CBG CTG GGC CCC ACA GAG CAG TGC TGT TGT TGG GCA TCT TGC CTT CCC AGG G BCB GBG CB TGC TGT TGT TGG GCB TCT TGC CTT CCC BGG GCC CTT TTC TGG TGG GGT GGT GCT GTT GTG GGG CTT TCT TCT GTT CCC BCB GBG CBG TGC TGT TGT TGG GCB TCT TGC CTT CCC BGG GCC CTT TTC TCT CCT ATT ACT TTC TGT GTC CAT TTT TTC ATT AAC CGA GCT GT BTT TGC TCT CCT BTT BCT TTC TGT GTC CBT TTT TTC BTT BBC CGB GCT GT GCC TGT GTC TGT CCT CCT GCT TCG TTC CTC TCG TTC CTG CTT GGT GCC CTT GCC G GTC CTG CTC TCT TGC TCT GGG CCT GGC TGT GGC CGT GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC TCT CTG AAT ATT GAC CTT CCT CCA TGG CGG TCC TGC TTG GAT TCT CCC GA TCT CTG BBT BTT GBC CTT CCT CCB TGG CGG TCC TGC TTG GBT TCT CCC GB GCC TTT CCT GGT TCT GTT GTT TTT GGG GTT TGG CTT ACA GTA GAG TAG GGG ATT CCA TGG CAG GAG CCA TCT TCA TGG ACT CC TTC AAG GAG ACC TTA GGT TTC TGA GGG ACT GCT AAC ACG CCA TCT GGA GC BCB GTB GBG TBG GGG BTT CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC GTT GTT TTT GGG GTT TGG CTT GCC TTT CCT GGT TCT CTT BCB GTB GBG TBG GGG BTT CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB CCG BCB GGC CGT GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC GAT CTC TGA ATA TTGA CCT TCC ATG GCG GTC CTG CTT GGA GBT CTC TGB BTB TTGB CCT TCC BTG GCG GTC CTG CTT GGB TCT GGG GTG TCC TGG CCT TCG TGG TTC CTC TTC CTT CGT TTG CCG TCC GCG GGG GCC CCC GGG CCT GGC TGC GCT CCT GCC CCG CCT CTT TCC COO GCT CTT GCG CTG TOO TOT TOO TTO GIT TGC CGT CCG CGG GGG CCC CCG GGC CT GGC GCT CCT GCC CCG CCT CTT TCC CGG GCT CTT CGA TCA GGA GCA GCG TGA GCC AAA GGA GGA CCA TCG GGA ACG CAG CTC CGG AAC GCA GGA CAG AGG TGC C GC BGG BGB CBG GGC BGG GCG BTC BGG BGC GTG BGC CBB BGG BGG BCC BTC GGG BBC GCB GCT CCG GBB CGC BGG BCB GBG GTG CC TCT GCC CTG TCC GCC GGC TCT TCG GTG GCT CGG CCC CGC TCC TTG TCT TGC CGC GGG TTG GTT CCT GGG CTC GGG CGG CTG CGG GCG CTC GTG CCT GGT CCG CTC CCT GGG GGT GCT CCT TCC CTT TCC CCG CTC GTG GGG TTT CTG TGC CCC TTT CCT CTG CTG GGT CCC CCT CCC GTT CCA AGC TGC ACC GCA CAG ACC GGC GCT ACA GGA CAG AGC CAG GCA AGC ACC CAT GGG GAT CCA GGC CCA GCT GTT CCB BGC TGC BCC GCB CBG BCC GGC GCT BCB GGB CBG BGC CBG GCB BGC BCC CBT GGG GBT CCB GGC CCB GCT G CTCAGTGGCC CCCAAAAGGA TGAGTAATAC ATGCGCCACG ATGATCATAT CCTTTTTACT ATGAGGCCGT GTCTTTCGTG TCTTTCCTTT GCTCTTGGTG TGTCTTTGCT GTGCCCTGCC 65

GTGTCTTTCC TTTGCTCTTG GTGTGTCTTT GCTGTGCCCT GCCTCTCTGC GGGGGTGGCT TCCTGCCGCG TCTCTGGGCC GGCGCTGCCC TGCGCGGGC GCTGGCCCCT GCTGGCCGTC GGCTGCGGCC TGCTGGCCG CCTGCTGGCC GCGCCGGGGC CTGTCCGCCT CTGCGGGCGC TGTCTCCTGG CTTGTCTTCC GGCTCTTCTG CTGGGGTGGG GCTGGGCCGGC CGGCCCGGTG CATGCTTCCT CCTCGGCTAC CACTCCATGG TCCCGCAGAG GCGGACAGGC GCBCGCCTC TTGCCBCCTC CTGCGCBGGG CBGCGCCTTG GGGCCBGCGC CGCTCCCGGC GCGGCCBGCB GGGCBGCCBG CBGCGCCBG CCGBCGGCCB GCBTGCTTCC TCCTCGGCTB CCBCTCCBTG GTCCCGCBGB GGCGGBCBGG C GCTGCCCGGC GGGGTGTGCG CTTGGCGCTC CCGTGCTCGG TTCTCTGTCT CCCGGTCCCC CTTGCCTGGC GTCTCGGGCC TTCGTCCTCT TCCTCTTCTT CCTTCCGCTC CGTGGGGGCT GCTTGGTGGG GGCCTGTGCCT CGGGGTCCCG GGGCTTCTGG CCCTTGCCGT TCATGGTGGC TAGGTGGGGC GTTCBTGGTG GCTBGGTGGG GC GGG GTG GGT BGG CCG TGT CTG GGGGTT GGC CBT GTT GGT TGC CTCT TGG TGG TGC GCC GGG CGCG CCG TGT CTG GGGGTT GGC CAT GTT GGT TGC CGGG CCC GCG GCT GCA GGG G ACAGGGGCTG TAATCITCATC TGCAGGTGGC ATGCCAGTGA AATTTAGATC ATCAAAATCC CACATCTGTG GATCTGTAAT ATTTGACATG TCCTCTTCAG TTTCAGCAAT GGTTTGATCT AACTGAAGCA CCGGCCAGGB CBGGGGCTGT BBTCTTCBTC TGCBGGTGGC BTGCCBGTGB BTTTTBBTC CBCBTCTGTG GBTCTGTBBT BTTTGBCBTG TCCTCTTCBG TTTCBGCBB TGGTTTGBTC TBBCTGBBGC BCCGGCCBGG CTCTGTGCCCC TGTTGTTGCG GCGCTCGGTT GGTGTGGCCC CTGTGGTGCT TCGTTTCCCC CTCTTTCTCT TTGTTCGGGG GTTCTTGTGG CGGGCTGCTT GTCTCGTTCC GCCCTGTCGG GCGGGAAGCC
TCTCTCCTCT CCCCAGATC CGCGACAGGC CGCAGGCAAG AACCAGCGCA ACCAGGGCGC GTCCGCACAG ACTTGGAGGC
GGCTGCATGC TGCTACCTGC TCCAGAAGCG TCCGGTGGCC GCCGCGCC CTGTCGGGCG GGBBGCCTCT CTCCTCTCCC
CBGBTCCGCG BCBGGCCGCB GGCBBGBBCC BGCGCBBCCB GGGCGGCTC GCBCBGBCTT GGBGGCGGCT GCBTGCTGCT BCCTGCTCGGGCG GGBBGCCTCCG GTGGCCGCCC CGCGTCCGGT GGCCGCCGCG CCTCTCTCCT CTCCCCGTGG CCCTGTCGGG GGTGGGTGGC GCGGGCTGCC GGGTCCGCGC GGCGCCTGGG CCCTTGTGCT GCTTTTTGCT TGTTCCGTTC TGGCTGCTCC GGTCTGTGTT GTGGTTGTTT TGTTTCTTCT TGGGTGTGGG CCTTGGGTT TTGGCTGTGG GCCCTTTGGC
CTGGCTCGTC TGTCCTCCCC GTCTCCTCCC ACTGCTTCT CCCGGGGGCT TCCCCGGCTT CGGGTGGCC GTGTCCCGGG
CTCCGGCGCG GCGCGGCTT CGGCTGCGG TGGGTGGCG GGCTGCCGG GTCCCCGGCG CCCTGGGCC
TTTTTGCTTG TTCCGTTCTG GCTGCTCCG TCTGTGTTGT GGTTGTTTTG TTTCTTCTTG GGTGTGGCC TTGCGGTTTT
GGCTGTGGGC CCTTGGGGC CTTGGCTTCT GGCTCCAT CCACATGATT GCTTAGATTT GTTCAGGATTT
CTCCAGGATTT
CTCCAGGATT
CTCCAGATT
CTCCAGGATT
CTCCAG GGCTGTGGGC CCTTTGGGGC CTTGGCTTCT GGCTCCAT CCACATGATT GCTTAGATT GTGTGTATC TICLCAGATT
ATCACTGATT ACACATCCAA CCAGTGCCAG CCAAAAGGAT GCCCTGAGGC AAAGGGTTTC CATCTTGAGG CAAATTTGAG
GACBTCCBC BTGBTTGCTT BGBTTTGTC TGTBTCCCTC BGGBTTBTCB CTGBTTBCBC BTCCBBCCBG TGCCBGCCBB
BBGGBTGCCC TGBGGCBBBG GGTTTCCBTC TTGBGGCBBB TTTGBGGBGGGGTBBGBT GBTCCBCTC
TGCCCBCCBC BGBGTCBCC BCBBTGBCCG TGTBGGCBC TGCCCBBBGG BCBBTTTGCC BGGCTGGTTG CBCGBBCTGB
TTGGGTTCCG BGGTGTTBGT GGBGBTGTTT GGGGBGBGGT CTGBTCCBC CGGGBGGBCG TTBTCCBTTT CGBBGCTBGG
CGGTBBBGCC CTBCTBTCTG TBCBCCBBCCC CCCTCTGCBG CBGBGTCCTG TCGTGGCGCC TGGGGCTCBG GGTCCGGGC
TAAGATGATC CACATCACTA CCACGTTTGCC CACCACAGGT GTCACCACAA TGACCGTGTA GGCAGCTGCC CAAAGGACAGT
TTTGCCAGGC TGCTTGCACGA ACCTGATTGG GTTCACCAGGT TTTAGTGGAG ATGTTTGGGG AGAGGTCTGA GTCACCCGGG TTTGCCAGGC TGGTTGCACG AACTGATTGG GTTCCGAGGT GTTAGTGGAG ATGTTTGGGG AGAGGTCTGA GTCCACCGGG AGGACGTTAT CCATTTCGAA GCTAGGCGGT AAAGCCCTAC TATCTGTACA CAACCCCCCT CTGCAGCAGA GTCCTGTCGT GGCGCCTGGG GCTCAGGGTC CGTCCTGTCG TGGCGCCTGG GGCTCTTCTT TTGTGGGCTC TTTGGTGGCT GTGGCTGTGG 45 TCTCTGTGGT TGCTGCCCTG GGTCTGGGGG TGTGGCCTTG GGGCCGTCCT CTGGCTCCTC CTCGTGGGCC CCC GGTGBCBTTG BGCBTGTCGG CGCGGTCCCG TTBBGBGTGG GCCCGCCAGC CCAGCCACTC CACTTGGGGG CGGGTGGCCA GCACGAACAG CACCAGAGG AAGGGGGGC GCCCAGAAGG GCAGCCCGCA GGCCAGGATC AGGTCTGCTG CGGCCGGAGA TAATGGCATT CACCACGCGG CGGCCCAGCG CACGCCGCG ATCCGGCCCG GGTTCTGACC TGCAGCCCCC GTCTCCTTGG CATTCCTGGG CCCCAGTCAC TCCTCTCCCT GCCCCCTTG CTGGGGCAGG GACGGGGTG BCBTTGBGCB TGTCGGCGCG GTCCCGTTBB GBGTGGGCCC GCCAGCCCAG CCACTCCACT TGGGGGCGGG TGGCCAGCAC GAACAGCACC CAGAGGAAGG GGGGCGGCCC AGAAGGCAG CCCGCAGGCC AGGATCAGGT CTGCTGCGGC CGGAGATAAT GGCATTCACC ACGCGGCGGC CCAGCGCACG AGAAAGGCAG CCCACAGGC AGAACAGC COCCACAGC COAAAAAA GCCACAGC CACACAGC CCCCGGCATCC GGCCCGGGTT CTGACCTGCA GCCCCGTCT CCTTGGGCCCC AGTCACTCCT CTCCCTGCCC CCCTTGCTGG GGCAGGGACG GCCGTGTTGT CBGTGGTGCT GCCCGTTTGB GGTBTGGCGC TCCBCCBBTT CCCTTTTCTC CTTGTTTTCC GTTTCTTTTC CCGTCTGTGG TT ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTCTCG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC ATTGGGCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG CCCCTATGT TTGGCTGGAA CAACTCTGAGT GCGGTGGAGC GGCCTGGGC AGCCACGGC AGCATGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT CCGCACAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGGTTG AAGATCGCCA AGTCCTGCC CCTCATCTC TTCCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTC ACAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGCCAAC TCGGCCATGA CCCCATTGT CTATGCCTTC CGCATCCAC ACACCCCAG AGTCCTCAC ACATCCTCA ACTCCATCAC CCCCATTGT CTATGCCTTC CGCATCCTC TCCTCTTCTC CACATCCTC ACAGCCCAG AGTCCTCACAGA AGTTCCGCCT CACCTTCCTT AAGATTTGCA ATGACCATTT CCGCTGCCAGCCCACGCACC CCCCCATGA CCCCCATTGA CGACGCCAC GAAGAGAGGC CTGATGACTA GAAGTTTGAA GGGTGCCTGT CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA G ATGAGTGTCA GAAGTGTGAA GGGTGCCTGT TCTGAATCCC AGAGCCTCCT CTCCCTCTGT GAGGCT0GCA GGTGAGGAAG GGTTTAACCT CACTGOAAGG AATCCCTGGA
GCTAGCGGCT GCTGAAGGCG TCGAGGTGTG GGGGCACTTG GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG GCCCTACGCG CGCGGCCCGG AGCTCTGTTC CCTGGAACTT TGGGCACTGC CTCTGGGACC CTGCCGGCC AGCAGGCAGG ATGGTGCTTG CCTCCTGGCCC CTTGGTGCCC GTCTGCTGAT TGGGCACC TGTGCCGCC ATGCCGCCC CATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGCAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTGTCG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC

CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCCTC TTCCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC ACAAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA GACCCCGCCT TCCGCTCCCA CCAGCCCACA TCCAGTGGGG TCTCAGTCCA GTCCTCACAT GCCCGCTGTC CCAGGGGTCT CCCTGAGCCT GCCCCAGCTG GGCTGTTGGC TGGGGGCATG GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GCCCTGCAGG AGGCCTGGGA GGGCAAGGGT CCTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTTCTG AGCCCCCACC TGCCTGACCA TCCCATGAGC AGTCCAGCGC TTCAGGGCTG GGCAGGTCCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT GGGCTGGGAG AAGGTGCTTG GGCTTCTGCG GTGAGGCAGG GGAGTCTGCT GAGGTTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG GCCAGAGGCA GCTAAGGGGC AGGAATCAAG GAGCCTCCGT TCCCACCTCT GAGGACTCTG GACCCCAGGC CATACCAGGT GCTAGGGTGC CTGCTCTCT TGCCCTGGGC CAGCCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA TTTCTGATGA TTTGCTGGAG TGCTGGCTCC ACGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA CGAGGTGGTA GCTCTGAGCC CTCCTTCTTG CCCTGAGCTT TCCGGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG CCACCAGCTC CACTGGCCCC CGTTGCCGGG CCTGGACTGT CCTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGOA GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC TCAGTGTTGA CTGTAGGCGC CCCTGGGGTG GGTTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCCC TGAGAGCATG TGGGGGAAGG CCTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTTT GGAAGCTCTG TTGCAGGTGT CCGGGGGTCT AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC CCCTGTGTTG GGGGGCAAGG TGGGGGAGCC TGGAGCCCCT GTGTGGGAGG GCGAGGCGGG GGAGCCTGGA GCCCCTGTGT GGGAGGGCGA GGCGGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTCGGTTG ACCTTCTGAA CATGAGTGTC AACTCCAGGA CTTGCTTCCA AGCCCTTCCC TCTGTTGGAA ATTGGGTGTG CCCTGGCTCC CAAGGGAGGC CCATGTGACT AATAAAAAC TGTGAACCCT CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTTGAAGAG AGACAAAGGA AGGAAAATTT AAATCCTTAG ATTCAAGCAG TGAGATGGAG TCTCGCTGTG TTACCGGGAG CGACAGAGCC GCACGGCCGA GTCGAGTCCC AGCCAGCTAC CATCCCTCTG GAGCTTACCG GCCGGCCTTG GCTTCCCCAG GAATCCCTGG AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTTG GTGACCTTGG GTGCTTGCCT CGTGCCCCTT GGTGCCCGTC TGCTGATGTG CCCAGCCTGT GCCCGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT GCTGGTGATC TGGGCGGTGA AGGTGAACCA GGCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTCGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCCTG GTCATCCCC TCGCCATCCT CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCCT GTCCGGTCCT CATCCTCACC CAGAGCTCCA TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC CCTCTCCGGT ACAAGATGGT GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CCTTCGTGGT GGGACTGACC CCTATGTTTG GCTGGAACAA TCTGAGTGCG
GTGGAGCGGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC CCGTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GTACATGGTC TACTTCAACT TCTTTGTGTG GGTGCTGCCC CCGCTTCTCC TCATGGTCCT CATCTACCTG GAGGTCTTCT ACCTAATCCO CAAGCAGCTC AACAAGAAGG TGTCGGCCTC CTCCGGCGAC CCGCAGAAGT ACTATGGGAA GGAGCTGAAG ATCGCCAAGT CGCTGGCCCT CATCCTCTTC CTCTTTGCCC TCAGCTGGCT GCCTTTGCAC ATCCTCAACT GCATCACCCT CTTCTGCCCG TCCTGCCACA AGCCCAGCAT CCTTACCTAC ATTGCCATCT TCCTCACGCA CGGCAACTCG GCCATGAACC CCATTGTCTA TGCCTTCCGC ATCCAGAAGT TCCGCGTCAC CTTCCTTAAG ATTTGGAATG ACCATTTCCG CTGCCAGCCT GCACTICCCA TTGACGAGGA TCTCCCAGAA GAGAGGCCTG ATGACTAGAC CCCGCCTTCC GCTCCCACCG CCCACATCCA
GTGGGGTCTC AGTCCAGTCC TCACATGCCC GCTGTCCCAG GGGTCTCCCT GAGCCTGCCC CAGCTGGGCT GTTGGCIGGG
GGCATGGGGG AGGCTCTGAA GAGATACCCA CAGAGTGTGG TCCCTCCACT AGGAGTTAAC TACCCTACAC CTCTGGGCCC TGCAGGAGGC CTGGGAGGGC AAGGGTCCTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA GGGCTGGGCA GGTCCTGGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGGC TGGGAGAAGG TGCTTGGGCT TCTGCGGTGA GGCAGGGGAG TCTGCTTGTC TTAGATGTTG GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAG TTGAGGATGC ACTGGCCTGT TCTGTAGGAG AGACTGGCCA GA CCCAGCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT CACGCGGCTG CCCCTCGCCC GGCGCGCCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT GCTGGAGACA CAGGACGCG TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTTCGGT GGCGGGCAAC GTGCTGGTGT GCGCCGCGGT GGGCACGGCG AACACTCTGC AGACGCCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGC CGACGTGGCC GTGGGGCTCT TCGCCATCC CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCCTCGC CTGCTTCGTG CTGGTGCTCA CGCAGAGCTC CATCTTCAGC CTTCTGGCCG TGGCAGTCGA CAGATACCTG GCCATCTGTG
TCCCGCTCAG GTATAAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCCT TGCCTTTGGC ATCGGATTGA CTCCATTCCT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTC AATTTCTTTG GGTGTGTTCT GCCCCCACTG CTTATAATGC TGGTGATCTA CATTAAGATC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC GGTGTGTTCT GCCCCCACTG CTTATAATGC TGGTGATCTA CATTAAGATC TECTGGTGG CCTGCAGGCA GCTTCAGGGCA
ACTGAGCTGA TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT
TTTTGCCCTG TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCACTCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA
AGTGGGCAAT GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA
GACTTCCGCT ACACTTTTCA CAAAATTATC TCCAGGTATC TTCTTGCCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC
TGGGGGAACAG CCTGCTCTCG GTGTGGGCCT ATGATCTAGG CTCTCCGCTC TTCCAGGAGAA AGATACAAAT CCACAAGAAA CAAAGAGGAC ACGCCTGGTT TTCATTGTGA AAGATAGCTA CACCTCACAA GGAAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC CACGTATCTA GCTAATATGT ATGTGTCAGT AGTAGCACCA AGGATTGACA AATAATTTA TGATCTATTC AGCTGCTTTT ACTGTGGA TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTTG TTTTAAAAG TCTGCCTTGT TTATGGTGGA AAATTACTGA AACTATTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTT AACTTAGAGG CAATGGAAAA ATAAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT TATTCGGCCG GGCATGGTGG CTCACACCTG TAATTCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCACG AGGTCAGGAG TTCAAAACCA GCCTGTCCAA TATAGTG GGGCAATTTG TTAGTTATCC GCCGCCACCA AGACGCGGCA CGGCGCCTGG

ACCGGAGGGG CCCCGCGCGG GCGCGAACTT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCCGAGA CGGGCGGGCG CGCGGGCCAA TGGGTGCCGC CTCTTGGCCG CGGGGGGCCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCCGAGG CTCAGAAGCG GCAGGCGGAG GCGCGGTCCG GGCGCTATGG CCATGCCCGG CGGGTTCAC GCGGCTGCCC CTCGCCCGGC GCGCCTTCGG TAGGGGGCGC CCGGGGCCCA GCTGGCCCGG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCCACCAA CTACTTCCTG GTGTCCCTGG CTGCGGCCGA CGTGGCCGTG GGGCTCTTCG CCATCCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC TGACTTCTAC GGCTGCCTCT TCCTCGCCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT CTTCAGCCTT CTGGCCGTGG CAGTCGACAG ATACCTGGCC ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACCGGGGA CCCGAGCAAG AGGGGTCATT GCTGTCCTCT GGGTCCTTGC CTTTGGCATC GGATTGACTC CATTCCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA CCCTGGGATG GAACCACGAA TGAAAGCTGC TGCCTTGTGA AGTGTCTCTT
TGAGAATGTG GTCCCCATGA GCTACATGGT ATATTTCAAT TTCTTTGGGT GTGTTCTGC CCCACTGCTT ATAATGCTGG
TGATCTACAT TAAGATCTTC CTGGTGGCCT GCAGGCAGCT TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC CAAGTCACTG GCCATGATTG TGGGGATTTT TGCCCTGTGC TGGTTACCTG TGCATGCTGT
TAACTGTGTC ACTCTTTTCC AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTCAC
ATGCCAATTC AGTTGTCAAT CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA CTTTTCACAA AATTATCTCC AGGTATCTTC TCTGCCAAGC AGATGTCAAG AGTGGGAATG GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCCTATG ATCTAGGCTC TCGCCTCTTC CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTC ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA TTCTAACAGA CTCTTTTGTT TTTAAAAGTC TGCCTTGTTT ATGGTGGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAA TACTTTTTAA CITAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAAA ATG GAATTCCCAG ATGGGCAGAG GTGGCTGGGC TGGTGACCCT AAGTGTGTCT CCTGCCTTTA TTCTCTCTAG TGGGTTATTC CTTTTCAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAATT CAGTTGGAGA GGACTGCCCT TTTTAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTTGGTAA GACTTGGATC AACTTGGGAT ACAGGGTGGG GGTCGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA GGACCCTGAT GAGCCCCAGG CAGAGGCGTC TCCCTTATGC CCCACTCTGA AGTGTTTGTT AGTAAACACC AGAACGCCAT TGTTGTTACT GCTGAATTTT ATTTTGGGCT GTACATATTT AGATGCTTAA GGTAAAAATG ATAAAGCCCT CAAGCCACTG
TGTGGGTTTG GGTCCAAGTG TTCCTTCTTG CTGCCTCTCT AACACGCCTG GTTAAAATAA TCCCTTTGGA TGGTGCTGAG
AAGCACCTGA ACCAAGTGGG TCCCCAAATA ACAATGGCGT GCAAGTGTCT GGTTCCCAGA AGTTGGTGAC TAGGTAAGCA GCTTCAGGGA GAGGGGGCTG ATTCCCAGAC AGTCGCCTGT TCCTGCGGGG ATGGGGCTGA GGCTTGGGGA ATGTGGGCAO GAGGATATGC CATTTGATTC TGTTGCACAC GTTCTTTTCC CTTCTTTCTG TATGTCTGGT CATTCTGCTA TTCTGTCGTT CCTCACATAG GTTGGACATT GGCCGGCTGC CAGCATAAGT GCCAGTGTGA TTTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTTTGCTGCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTICTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTTCCT CTGCTTCTCC CGTTTGCCTC CTTATCATGA
40 GATCTTTTTG CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCCAGCT CTGCTCCCAC CTGATCCTCC ACTGTCCTCT
GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCTT TCCATCTTTT TGCTGAGAGT TCTGAGCTCT GTACTTCCTC TTGGCCCATC TCACTTCCTG AAACACCCCT GAAGAGGGTT GCTTATCTTG ATGGAACTCA AAAAGCCAAA AAGCTGCAGG CAGAGGCGTT GAGGACATCT GTTTGGGGAA CTAAGAGCAG CAGCACTITC AGATTCAGTC CATATAGAGC TGTCCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGTGACC CACCTGTGAT GAGCCCTTTC TAAGGAGAAG GGTTTCCAAG AGATCACCCC ACCAGAAAAG GGTAGGAATG AGCAAGTTGG GAATTTTAGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCCGAG AGCTAGGCCC ACTGGCCCTA AGCAGTTGG GAATTTAGA CTGTCACTGC ACATGGACCT CIGGGAAGAC GICTGGCCAG AGCTAGGCCC ACIGGCCCTA
CAGACGGATC TTGCTGGCTC ACCTGTCCCT GTGGAGGTTC CCCTGGGAAG GCAAGATGCC CACAACAGC ACTGCTCTGT
CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCATCTGC
GTGGTCAAGC TGAACCCCAG CCTGCAGACC ACCACCTTCT ATTTCATTGT CTCTCTAGCC CTGGCTGACA TTGCTGTTGG
GGTGCTGGTC ATGCCTTTGG CCATTGTTGT CAGCCTGGGC ATCACAATCC ACTTCTACAG CTGCCTTTTT ATGACTTGCC
TACTGCTTAT CTTTACCCAC GCCTCCATCA TGTCCTTGCT GGCCATCGCT GTGGACCGAT ACTTGCGGGGT CAAGCTTACC GTCAGGTAGC CTGCGGCGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGC CTGCTGAATT TTATTTTGGA CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAGCC CTCAAGCCAC TGTGTGGGTT GGGTCCAAGT
GTTCCTTGCT GCTGCCTCTC TAACACGCCT GGTTAAAAATA ATCCCTTTGG ATGGTGCTGA GAAGCACCTG AACCAAGTGG
GTCCCCAAAT AACTATGGCG TGCAAGTGTC TGGTTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGGA GAGGGGCTGA TTCCCAGACA GTCGCCTGTT CCTGCTGGGA TGGGGCTGAG GCTTGGGGAA TGTGGGCAGG AGGATATGCC ATTTGATTCT
GTTGCACACG TTCTTTTCCC TTCTTTCTGT ATGTCTGGTC ATTCTGCTAT TCTGTCGTTC CTCACATAGG TTGGACATTG
GCCGGCTGCC AGCATAAGTG CCAGTGTGAT TTTGCTAGGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA
TGCTTCTCAG AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTTTGCTCCA
AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA AGGCTGCCACC AAAGTCTCTT TTTTGTTCCT CTGCTTCTCC CGTTTGCCTC CTTATCATGA GATCTTTTTG CTAAGCTGGC AGAAAGATTG CATAATCAGT GCTTCCAGCT CCGCTCCCAC CTGATCCTGC ACTGTCCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCTT TCCATCTTTT TGCTGAGAGT TACTGAGCTC TGTACTTCCT CTTGGCCCAT CTCACTTCCT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAACTC AAAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTTTGGGGA ACTAAGAGCA GCAGCACTTT CAGATTCAGT CCATATAGAG CTGTCCTACA GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGGAAGTGAC CCACCTGTGA TGAGCCCTTT CTAAGGAGAA GGGTTCCAA GAGATCACCC CACCAGAAAA GGGTAGGAAT GAGCAAGTTG GGAATTTTAG ACTGTCACTG CACATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTTGCTGGCT CACCTGTCCC TGTGGAGGTT CCCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG CGAATTCGGG GGACATCTGT
TTGGGGAACT AAGAGCAGCA GCACTTTCAG ATTCAGTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG AAGTGACCCA CCTGTGATGA GCCCTTTCTA AGGAGAAGGG TTTCCAAGAG ATCACCCCAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTITAGACT GTCACTGCAC ATGGACCTCT GGGAAGACGT CTGGCGAGAG CTAGGCCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT GGAGGTTCCC CTGGGAAGGC AAGATGCCCA ACAACAGCAC TGCTCTGTCA TTGGCCAATG TTACCTACAT CACCATGGAA ATTTTCATTG GACTCTGCGC CATAGTGGGC AACGTGCTGG TCATCTGCGT GGTCAAGCTG AACCCCAGCC TGCAGACCAC CACCTTCTAT TTCATTGTCT CTCTAGCCCT

GGCTGACATT GCTGTTGGGG TGCTGGTCAT GCCTTTGGCC ATTGTTGTCA GCCTGGGCAT CACAATCCAC TTCTACAGCT GCCTTITTAT GACTIGCCTA CTGCTTATCT TTACCCACGC CTCCATCATG TCCTTGCTGG CCATCGCTGT GGACCGATAC TTGCGGGTCA AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACAGAAG AATATGGCTG GCCCTGGGCC TTTGCTGGCT GGTGTCATTC CTGGTGGGAT TGACCCCCAT GTTTGGCTGG AACATGAAAC TGACCTCAGA GTACCACAGA AATGTCACCT TCCTTTCATG CCAATTTGTT TCCGTCATGA GGATGGACTA CATGGTATAC TTCAGCTTCC TCACCTGGAT TTTCATCCCC CTGGTTGTCA TGTGCGCCAT CTATCTTGAC ATCTTTTACA TCATTCGGAA CAAACTCAGT CTGAACTTAT CTAACTCCAA AGAGACAGGT GCATTITATG GACGGGAGTT CAAGACGGCT AAGTCCTTGT TTCTGGTTCT TTTCTTGTTT GCTCTGTCAT GGCTGCCTTT ATCTCTCATC AACTGCATCA TCTACTTTAA TGGTGAGGTA CCACAGCTTG TGCTGTACAT GGGCATCCTG CTGTCCCATG CCAACTCCAT GATGAACCCT ATCGTCTATG CCTATAAAAT AAAGAAGTTC AAGGAAACCT ACCTTTTGAT CCTCAAAGCC TGTGTGGTCT GCCATCCACT TGATTCTTTG GACACAAGCA TTGAGAAGAA TTCTGAGTAG TTATCCATCA GAGATGACTC TGTCTCATTG ACCTTCAGAT TCCCCATCAA CAAACACTTG AGGGCCTGTA TGCCTGGGCC AAGGGATTTT TACATCCTTG ATTACTTCCA CTGAGGTGG AGCATCTCCA GTGCTCCCCA ATTATATCTC CCCCACTCCA CTACTCCTTT CCTCCACTTC ATTITTCCTT TGTCCTTTCT CTCTAATTCA GTGTTTTGGA GGCCTGACTT GGGGACAACG TATTATTGAT ATTATTGTCT GTTTTCCTTC TTCCCAATAG AAGAATAAGT CATGGAGCCT GAAGGGTGCC TAGTTGACTT ACTGACAAAA GGCTCTAGTT GGGCTGAACA TGTGTGTGGT GGTGACTCAT TTCCATGCCA TTGTGGAATT GAGCAGAGAA CCTGCTCTCG GAGGATGCCT AGGAGATGTT GGGAACAGAA GAAATAAACT GAGTITAAGG GGGACTTAAA CTGCTGAATT C CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA
TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTITA TGGCTCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT
25 GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCACC AGCCGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA CCTGGAGGGC ATCTGGAGGA AGAAAACAGG TGAAAGAAGA AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAA AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA CGTGATGGTC TGAGACCCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGCATT CACATCCAAA CGAGAAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAAA ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA
CCTTCTGCTT CATCGTCTCG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCCCCCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCCTC TTCCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC ACAAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA G ATGAGTGTCA GAAGTGTGAA GGGTGCCTGT TCTGAATCCC AGAGCCTCCT CTCCCTCTGT GAGGCTGGCA GGTGAGGAAG GGTTTAACCT CACTGGAAGG AATCCCTGGA GCTAGCGGCT GCTGAAGGCG TCGAGGTGTG GGGGCACTTG GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG GCCTACGCG CGCGGCCCGG AGCTCTGTTC CCTGGAACTT TGGGCACTGC CTCTGGGACC CCTGCCGGCC AGCAGGCAGG ATGGTGCTTG CCTCGTGCCC CTTGGTGCCC GTCTGCTGAT GTGCCCAGCC TGTGCCCGCC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TIGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTGTG CTGGCGGTGG CTGATGTGGC CGTGGTGGCC
CTGGTCATCCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT
CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC
GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCCTC TTCCTCTTTG CCCTCAGCTG

GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC ACAAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA AGTTCCGCGT CACCTTCCTT AAGATITGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA GACCCCGCCT TCCGCTCCCA CCAGCCCACA TCCAGTGGGG TCTCAGTCCA GTCCTCACAT GCCCGCTGTC CCAGGGGTCT CCCTGAGCCT GCCCCAGCTG GGCTGTTGGC TGGGGGCATG GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GCCCTGCAGG AGGCCTGGGA GGGCAAGGGT CCTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTTCTG AGCCCCCACC TGCCTGACCA TCCCATGAGC AGTCCAGCGC TTCAGGGCTG GGCAGGTCCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT GGGCTGGGAG AAGGTGCTTG GGCTTCTGCG GTGAGGCAGG GGAGTCTGCT TCCCACCTCT GAGGACTCTG GACCCCAGGC CATACCAGGT GCTAGGGTGC CTGCTCTCT TGCCCTGGGC CAGCCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA TTTCTGATGA TTTGCTGGAG TGCTGGCTCC ACGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA CGAGGTGGTA GCTCTGAGCC CCCTTCTTG CCCTGAGCTT
TCCGGGGAGG AGCCTGAGT GTAATTACCT GTCATCTGG CCACCAGCTC CACTGGCCC CGTTGCCGGG CCTGACTGT
CCTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC TCAGTGTTGA CTGTAAGGCC CCCTGGGGTG GGTTTAGCAG
GCTGCAGCAG GCAGAGGAGG AGTACCCCC TGAGAGCATG TGGGGGAAGG CCTTGCTGTC ATGTGAATCC CTCAATACCC
CTAGTATCTG GCTGGGTTT CAGGGGCTTT GGAAGCTCTG TTGCAGGTGT CCGGGGGTCT AGGACTTTAG GGATCTGGGA
TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC CCCTGTGTTG GGGGGCAAGG TGGGGGAGCC TGGAGCCCCT GTGTGGGAGG GCGAGGCGGG GGAGCCTGGA GCCCCTGTGT GGGAGGGCGA GGCGGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTCGGTTG ACCTTCTGAA CATGAGTGTC AACTCCAGGA CTTGCTTCCA AGCCCTTCCC TCTGTTGGAA ATTGGGTGTG CCCTGGCTCC CAAGGGAGGC CCATGTGACT AATAAAAAC TGTGAACCCT CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTTGAAGAG AGACAAAGGA AGGAAAATTT AAATCCTTAG ATTCAAGCAG TGAGATGGAG TCTCGCTGTG TTACCGGGAG CGACAGAGCC GCACGGCCGA GTCGAGTCCC AGCCAGCTAC CATCCCTCTG GAGCTTACCG GCCGGCCTTG GCTTCCCCAG GAATCCCTGG AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTTG GTGACCTTGG GTGCTTGCCT CGTGCCCCTT GGTGCCCGTC TGCTGATGTG CCCAGCCTGT GCCCGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT GCTGGTGATC TGGGCGGTGA AGGTGAACCA GGCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTCGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCCTG GTCATCCCC TCGCCATCCT CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCCT GTCCGGTCCT CATCCTCACC CAGAGCTCCA TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC CCTCTCCGGT ACAAGATGGT GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CCTTCGTGGT GGGACTGACC CCTATGTTTG GCTGGAACAA TCTGAGTGCG GTGGAGCGGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC CCGTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GCACCTCCCA TTGACGAGGA TCTCCCAGAA GAGAGGCCTG ATGACTAGAC CCCGCCTTCC GCTCCCACCG CCCACATCCA
GTGGGGTCTC AGTCCAGTCC TCACATGCCC GCTGTCCCAG GGGTCTCCCT GAGCCTGCCC CAGCTGGGCT GTTGGCTGGG
GGCATGGGGG AGGCTCTGAA GAGATACCCA CAGAGTGTGG TCCCTCCACT AGGAGTTAAC TACCCTACAC CTCTGGGCCC
TGCAGGAGGC CTGGGAGGGC AAGGGTCCTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA GGGCTGGGCA GGTCCTGGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGGC TGGGAGAAGG TGCTTGGGCT TCTGCGGTGA GGCAGGGGAG TCTGCTTGTC TTAGATGTTG GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAGG TTGAGGATGC ACTGGCCTGT TCTGTAGGAG AGACTGGCCA GA CCCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT CACGCGGCTG CCCCTCGCCC GGCGCGCCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT GCTGGAGACA CAGGACGCGC TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTTCGGT GGCGGGGCAAC GTGCTGGTGT GCGCCGCGGT
GGGCACGGCG AACACTCTGC AGACGCCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGGC CGACGTGGCC GTGGGGCTCT
TCGCCATCCC CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCCTCGC CTGCTTCGTG
CTGGTGCTCA CGCAGAGCTC CATCTTCAGC CTTCTGGCCG TGGCAGTCGA CAGATACCTG GCCATCTGTG TCCCGCTCAG GTATAAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCCT TGCCTTTGGC ATCGGATTGA CTCCATTCCT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTC AATTTCTTTG GGTGTGTTCT GCCCCCACTG CTTATAATGC TGGTGATCTA CATTAAGATC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCCTG
TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCACTCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT
GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT
ACACTTTTCA CAAAATTATC TCCAGGTATC TTCTCTGCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC TGGGGTACAG
CCTGCTCTCG GTGTGGGCCT ATGATCTAGG CTCTCGCCTC TTCCAGGAGA AGATACAAAT CCACAAGAAA CAAAGAGGAC ACGGCTGGTT TTCATTGTGA AAGATAGCTA CACCTCACAA GGAAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC CACGTATCTA GCTAATATGT ATGTGTCAGT AGTAGCACCA AGGATTGACA AATATATTTA TGATCTATTC AGCTGCTTTT ACTGTGTGGA TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTTG TTTTTAAAAG TCTGCCTTGT TTATGGTGGA AAATTACTGA AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA ATAAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT TATTCGGCCG GGCATGGTGG CTCACACCTG TAATTCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCACG AGGTCAGGAG TTCAAAACCA GCCTGTCCAA TATAGTG GGGCAATTTG TTAGTTATCC GCCGCCACCA AGACGCGGCA CGGCGCTGG ACCGGAGGGG CCCCGCGGG GCGCAACTT TGGGCTCGGG CQAGTGGGTG GTGCTCCGCC CAGCCCGAGA CGGGCGGGCC CGCGGGCCAA TGGGTGCCGC CTCTTGGCCG CGGGGGGCCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCCGAGG CTCAGAAGCG GCAGGCGGAG GCGCGTTCCG GGCGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCCC CTCGCCCGGC GCGCCTTCGG TAGGGGGCCC CCGGGGCCCA GCTGGCCCGG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCCACCAA CTACTTCCTG GTGTCCCTGG CTGCGGCCGA CGTGGCCGTG GGGCTCTTCG CCATCCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC TGACTTCTAC GGCTGCCTCT TCCTCGCCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT CTTCAGCCTT

CTGGCCGTGG CAGTCGACAG ATACCTGGCC ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG AGGGGTCATT GCTGTCCTCT GGGTCCTTGC CTTTGGCATC GGATTGACTC CATTCCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA CCCTGGGATG GAACCACGAA TGAAAGCTGC TGCCTTGTGA AGTGTCTCTT TGAGAATGTG GTCCCCATGA GCTACATGGT ATATTTCAAT TTCTTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTTC CTGGTGGCCT GCAGGCAGCT TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC CAAGTCACTG GCCATGATTG TGGGGATTT TGCCCTGTGC TGGTTACCTG TGCATGCTG TAACTGTGTC
ACTCTTTTCC AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTCAC ATGCCAATTC
AGTTGTCAAT CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA CTTTTCACAA AATTATCTCC AGGTATCTTC
TCTGCCAAGC AGATGTCAAG AGTGGGAATG GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCCTATG ATCTAGGCTC TCGCCTCTTC CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTC ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA TTCTAACAGA CTCTTTTGTT TTTAAAAGTC TGCCTTGTTT ATGGTGGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAA TACTTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAAA ATG GAATTCCCAG ATGGGCAGAG GTGGCTGGGC TGGTGACCT AAGTGTGTC CCTGCCTTA TTCTCTCAG TGGGTATTC TTTCATGTGG
TATCTTGCCT ACAGCATGCT GTGTTTGGAC ACAAACCCCT TTCCTTGGTT TCTCTGACCC AGCTGAGATG GACTGATTCC
AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTTGCAGT ATTTAACTAA GGTTCAAAGA GTGCTATATA
GTGAGAAAGG CTTCTTTTT TTTTTTTTTT TTTTTTTGCA GAGTGCTGCC TCCTAGAAAT TTCTCTTGGT AACTTCCTTC
TCTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT TTATGAGGGA CACATTGGAAG CCCATTGGAAG
TCCACGCACTTC COCACACTTC ACACTTCCAAAT ATACTACAAT CACTTCCAAAT CACTTCCAAT CACTTCCAAAT CACTTCAAAT CACTTCCAAAT CACTTCCAAAT CACTTCCAAAT CACTTCAAAT CACTTCCAAT CACTTCCAAAT CACTTCCAAAT CACTTCCAAAT CACTTCAAAT CACTTCAAAT CACTTCA 15 TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAATT CAGTTGGAGA GGACTGCCCT TTTTAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTTGGTAA GACTTGGATC AACTTGGAT ACAGGGTGGG GGTCGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA GGACCCTGAT GAGCCCCAGG CAGAGGCGTC TCCCTTATGC CCCACTCTGA AGTGTTTGTT AGTAAACACC AGAACGCCAT TGTTGTTACT GCTGAATITT ATTITGGGCT GTACATATIT AGATGCTTAA GGTAAAAATG ATAAAGCCCT CAAGCCACTG TGTGGGTTTG
GGTCCAAGTG TTCCTTCTTG CTGCCTCTCT AACACGCCTG GTTAAAATAA TCCCTTTGGA TGGTGCTGAG AAGCACCTGA
ACCAAGTGGG TCCCCAAATA ACAATGGCGT GCAAGTGTCT GGTTCCCAGA AGTTGGTGAC TAGGTAAGCA GCTTCAGGGA GAGGGGGCTG ATTCCCAGAC AGTCGCCTGT TCCTGCGGGG ATGGGGCTGA GGCTTGGGGA ATGTGGGCAG GAGGATATGC GAGGGGGCTG ATTCCCAGAC AGTCGCCTGT TCCTGCGGGG ATGGGGCTGA GGCTTGGGGA ATGTGGGCAG GAGGATATGC
CATTTGATTC TGTTGCACAC GTTCTTTTCC CTTCTTCTG TATGTCTGGT CATTCTGCTA TTCTGTGGTT CCTCACATAG
GCAGGTGTGA TGCTCTCAG AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAAAGAGAGG TGGAGGCTAA
GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT
CTTTGCTGCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT
AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTTCCT CTGCTTCTC CGTTTGCCTC CTTATCATGA GATCTTTTTG
CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCCAGCT CTGCTCCCAC CTGATCCTGC ACTGTCCTCT GGTCCCTGAA
TGAATGAACT CTGATACCCA ATCTTGTCTC TGGCCCATC TAGCCCCC TAGGCCCTC TTCTGCTCTT TCCATCTTTT
TGCTGAGAGT TCTGAGCTCT GTACTTCCT TTGGCCCATC TCACTTCCTG AAACACCCCT GAAGAGGGTT GCTTATCTTG
AGATTCAGTC CATATAGAGC TGTCCTCAGG CAGGGCCTT GAGGACATCT GTTTGGGGAA CTAAAGGGGCT GGAAGTGACC AGATTCAGTC CATATAGAGC TGTCCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGTGACC CACCTGTGAT GAGCCCTTTC TAAGGAGAAG GGTTTCCAAG AGATCACCCC ACCAGAAAAG GGTAGGAATG AGCAAGTTGG GAATTTTAGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGCTAGGCCC ACTGGCCCTA CAGACGGATC TIGCTGGCTC ACCTOTCCCT GTGGAGGTTC CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT CATTGGCCAAC
TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCATCTGC GTGGTCAAGC
TGAACCCCAG CCTGCAGACC ACCACCTTCT ATTTCATTGT CTCTCTAGCC CTGGCTGACA TTGCTGTTGG GGTGCTGGTC
ATGCCTTTGG CCATTGTTGT CAGCCTGGGC ATCACAATCC ACTTCTACAG CTGCCTTTTT ATGACTTGCC TACTGCTTAC CTTTACCCAC GCCTCCATCA TGTCCTTGCT GGCCATCGCT GTGGACCGAT ACTTGCGGGT CAAGCTTACC GTCAGGTAGC CTGCGGCGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGCS CTGCTGAATT TTATTTTGGA CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAGCC CTCAAGCCAC TGTGTGGGTT GGGTCCAAGT GTTCCTTGCT GCTGCCTCTC TAACACGCCT GGTTAAAATA ATCCCTTTGG ATGGTGCTGA GAAGCACCTG AACCAAGTGG GTCCCCAAAT AACTATGGCG TGCAAGTGTC TGGTTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGGA GAGGGGCTGA TTCCCAGACA GTCGCCTGTT CCTGCTGGGA TGGGGCTGAG GCTTGGGGAA TGTGGGCAGG AGGATATGCC ATTTGATTCT GTTGCACACG
TTCTTTCCC TTCTTTCTGT ATGTCTGGTC ATTCTGCTAT TCTGTCGTTC CTCACATAGG TTGGACATTG GCCGGCTGCC
AGCATAAGTG CCAGTGTGAT TTTGCTAGGG TGTGAGCTGA GAAAGAGAG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGATGAGIG CCAGIGIGAI TITIGCTAGGG IGIGAGCTIGA GAAAGAGAGG IGGAGGCTAA GCAGGIGIGA IGCTICLAG
AGGATGCTGAG TITITTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTTTGCTCCA AAGGCTGGGT
AAAGTCTCTT TITTGTTCCT CTGCTTCCTCC CGTTTGCCTC CTTATCATGA GATCTTTTTG CTAAGCTGGC AGAAAGATTG
CATAATCAGT GCTTCCAGCT CCGCTCCCAC CTGATCCTGC ACTGTCCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA
ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TCTGTCTCTT TCCATCTTTT TGCTGAGAGT TACTGAGCTC
TGTACTTCCT CTTGGCCCAT CTCACTTCCT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAACTC AAAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTTTGGGGA ACTAAGAGCA GCAGCACTIT CAGATTCAGT CCATATAGAG CTGTCCTACA GCATTCTGGA AACTTGAGGA CTGTCCTACA GCATTCTGAA AACTTGAGGA CTGTCCTACA GGATTCCACA GAGATCACCC CACCAGAAAA GGGTAGGACT TGGAAGTTGAC CCACCTGTGA TGAGCCCTTT CACATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTTGCTGGCT CACCTGTCCC TGTGGAGGTT CCCCTGGGAA GGCAAGATCG CCAACAACAG CACTGCTCCT CGAATTCAGG GGACATCTGT TTGGGGGAACT TTGGGGAACT TTGGGGGAACT TTGGGGGAACT TTGGGGGAACT TTGGGGGAACT TTGGGGGAACT TTGGGGAACT TTGGGGAACT TTGGGGAACT TTGGGGGAACT TTGGGGGAACT TTGGGGAACT TTGGGGAACT TTGGGGAACT TTGGGGGAACT TTGGGGAACT TTGGGGA AAGAGCAGCA GCACTITCAG ATTCAGTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAAC TTGAGGATGT GCGGTGCATA
AACGGGCTGG AAGTGACCCA CCTGTGATGA GCCCTTTCTA AGGAGAAGGG TTTCCAAGAG ATCACCCCAC CAGAAAAGGG AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACAGAAG AATATGGCTG GCCCTGGGCC TTTGCTGGCT GGTGTCATTC
CTGGTGGGAT TGACCCCCAT GTTTGGCTGG AACATGAAAC TGACCTCAGA GTACCACAGA AATGTCACCT TCCTTTCATG CCAATTIGIT TCCGTCATGA GGATGGACTA CATGGTATAC TTCAGCTTCC TCACCTGGAT TITCATCCCC CTGGTTGTCA TGTGCGCCAT CTATCTTGAC ATCTTTTACA TCATTCGGAA CAAACTCAGT CTGAACTTAT CTAACTCCAA AGAGACAGGT GCATTTTATG GACGGGAGTT CAAGACGGCT AAGTCCTTGT TTCTGGTTCT TTTCTTGTTT GCTCTGTCAT GGCTGCCTTT

			mom , omm		CO C COTTO	TOOTOTAGAT	COCOLTCCTC	OTCTCCCATC
	ATCTCTCATC A	ACTGCATCA	ICIACITIAA	TGGTGAGGTA	CCACAGCTIG	IGCIGIACAI	ACCEPTE	CIGICCCAIG
	CCAACTCCAT G	ATGAACCCI	AICGICIAIG	CCIAIAAAAI	AAAGAAGIIC	AAGGAAACCI	TTATCCATCA	CAGATGACTC
	TGTGTGGTCT G	CCATCCCTC	TGATTCTTIG	GACACAAGCA	IIGAGAAGAA	TOCOTOCOC	1 IA ICCATCA	TACATOCTTC
_	TGTCTCATTG A	CCTTCAGAT	TCCCCATCAA	CAAACACTIG	AGGGCCTGTA	1GCC1GGGCC	AAGGGATITI	DOTCC A COTTC
5	ATTACTTCCA C	TGAGGTGGG	AGCATCTCCA	GIGCICCCCA	ATTATATOTO	CCCCACTCCA	CIACICICIT	LCTCCACTTC
	ATTTTTCCTT TO	GICCITICI	CICIAATICA	GIGITIIGGA	GGCCTGACTT	TA COTTO A COTTO	IATIATIOAL	ATTATIGICE
	GTTTTCCTTC T	ICCCAATAG A	AAGAATAAGT	CATGGAGCCT	GAAGGGTGCC	TAGTIGACTI	ACTUACAAAA	GUCTCTAGTT
	GGGCTGAACA T	GTGTGTGGT	GGTGACTCAT	TICCATGCCA	TIGIGGAATI	GAGCAGAGAA	CCTGCTCTCG	GAGGATGCCI
••	AGGAGATGTT G							
10	TTTGTTAAAT G	CTTTTTAAA .	ATGAATGCTT	TAAGCCGGGT	GCAGTGCCTC	ACATCIGIAA	TCCCAGCACT	TIGGAGCCGA
	GCGGGTGGAT T	GTGTGAGGT	CAGGAGTTCG	AGACCAACCT	GGCCAACATG	GCAAAACCIC	ACTOTOTACC	AAAAATACAA
	AAATTAGCCA G	GCATGGTGG	CAGGCACCTG	TGATCCCAGC	TACTCAGGAG	GCTGAGACAG	GAGAATCGCT	TGAACCCGGG
	AGGCAAGGTT G	CAGTGAGCC	AAGATTACGC	CATTGTACTC	CAGCCTGGGT	GACAGAGAGA	GACTCCGTCT	CAAAAAAAAA
4.5	AAAAAAAAA	AAAAAATTAC	GCTTCAAACA	CATGATCTCT	CACCACTGTT	GAATITICIT	TCTATGAGCC	CAGGAGGGCC
15	TCTCAGAGAG	GAAAGCTCCT	AGGTCTTCCT	TTCCCTCTGC	AAACTCCCTG	CCTTGAAGGT	TCAGAAGGAC	TGTGCGTGCT
	CGTTGCATCC T	TTGCAAGTG	TCCAAACCCT	GATCCCAGCT	GTGCTTAGGG	GTTCCTGCAA	ACCTITICCA	GGTGTTAATT
	ACCTCCCACT T	CATTTCCTG	TTTACCAACT	CAGCTTTTTG	TTTTAGTGTG	TITGAATICC	CTGAACTGAC	CGTTGTCTGA
	TCTCCACCTC CO	CAACTGAAT '	TAGGGGAGCT	GGGCTTCTGG	AAACCCAGGT	GCCGGGTGTT	GCAGAGTGGC	TGAAAGCTGG
	GATGTGGCAG A	ATCCGTGGCT	ACATTCATGC	ACACACACAC	ACCCACATAC	CCACACATGC	ACACACACAC	ACACACCCGC
20	ACTCACACAC T							
	GTGAAGTCCT G							
	TGCGCCTTGT T							
	GGGCGGTCAG A							
	GGCTGAGAAC T	TTGACAGCAC	CTTGTAATTG	GTAAGCCAAG	CCCGAAGGGA	. CTGGAAATAC	TCAGATGTGT	CTGTCTCCCT
25	TATTAGGTTC A	AAGTCCCTC	AAGACCCTGT	CTCCATCACA	GTGCTCCAGT	CCAGACCCCT	CCTCTGAGCT	CCAGACCCTG
	CTGGACCCAA C	CAGCCCTAT	GGGGTCGCAT	CCCCACCTGC	CTGGAATTCT	CCAAAGAACC	TCCCCTTTAA	CAGTTCCAGC
	CTTTAACAGT T							
	CATGACACCT C	CCTCGCCCC	TGTCCTCACC	CCATCCATGT	CCAATCAAGC	ACTAGGCATG	TCAGGTTTAC	CCTCTAAACT
	CCTCTGGAAT C	CAGTCTCTC	AGTCTCCATC	ATCCCAGGTC	GAAGCTAATG	GGCTAACTGG	TCCTTGCTTC	CACTCTACCC
30	CCACTGCAGT C	CTGACTTCC	TGAGCAGCAG	CCAGGGCCTA	ATCGATATTC	ACACCAAGCG	CCAACCTGAC	TGAGATATCC
	TCCTGCACCA T							
	GCGTTTGGGA C	CCCCATGTTC	TATGCTCTCA	CAGGACCTTT	TGCTTGATTT	TTCACTGTAC	TTAGGTCAGT	TTGCAGTTAT
	TAAGTGACTG A							
	CACGTGACAA A							
35	TCCCCAGCCC C	CTGTGCCATC	TAACCATCTT	TTCTTCTCTG	TTCAGCCCAG	GTGTGGCCTC	ACTCACATCC	CACTCTGAGT
	CCAAATGTTC T							
	GAGTCAAAGG (GATTCCTCAG	TTCACTAGTT	AGGGGAGGTG	GGCAGACACC	CTGGAGAACT	CCCTGGAAAG	CTCAACTCTC
	ATGCCCCGGA C	CAACAGTTGA	AGGAACCATG	GTGATGTTAA	GCCCAAAGAC	AAAACCTCTC	AGGTGTCCAA	GTCCCTGTTG
	GAATCTTGGG A							
40	ATATGTTTCT AT	TCTATCCCA (GATGAACTTG (GAAGTGAAGG	GAAGAGAGTT	AAACATTAAA	GTAAATACCC	AGTGGATCAG
	ACAGCAATGT G	CCAGATTGC	CTTGGAAACA	AAATATCTCC	AACACATGGC	TGACATTTGG	TGGGAGATCA	GAACACCCTA
	AAGAGAGAAT T	TAAGGGGAG	GGGGAGGAGG	ACCTGAGCCA	GAGTAGAAGC	AGAGGATAGG	GAGATCTGTT	CTTGGGGACA
	GCATTTGCAA G	AAACAAGGC	TGAGGGGTCC	ACTCCAACCT	CTCCACCCTG	CTGCAGGTGC	TGCCTATGAT	GAAGATGAGC
	AGATGGCCAT C	TCAGCTGGG	GCCACAGTGC	ACTGGACCTA	TAGTTTCCAA	TTCCGCACTC	AGCAGGCATC	TTTCTGATGA
45	TCCGATGGCT T							
	TCTGGTGCTA T.	ACTITGGTC '	TCTAGTGAGT	TAGCTCATGA .	AAGATGATAG	ACTCTCCAAG	CCAGGGGTAT	GCAGGAAATG
	GGTTTTCTGT AG							
	GGAAAGGAGG (CTGCAAGTTT	TCATGGGTCA	AGAATTCAGA	GCCCAGTAGA	GACAGCTTAT	CTCTGTTCCA	AGATGTCTGG
	GGCCTTGGTT G							
50	GTGGCAAGTT G	GTTCCCCCC	ATGTGGCTGC	TTGAGTATCC	TCACATGGCG	GCTCACATCC	TTCCAAGTAA	GCAATGCAAA
	AGGCCAAGAA A	AGATGCTGCA	AAGATGTTAT	GACCTAGCCT	CAGAAATCAC	ACACCATCCC	TGCCACCATT	AGTAAGAAGT
	CCAGCCCACG T	CCAGGAGAA	GAGGAAGCAG	ATTCCTCCTT	TTGAAATGAA	GAATATCAAG	TAATTCGGGG	GGCATATGAA
	AGCCACCACA C	CACCACAGGG	ATCTTTTTAG	AGCATACTTC	TTATACCATC	ACTGTAGTTC	CTTAAGACTC	AGGGGCAAAG
	CCTCACTTCC T	TAGCACCCA	GTGAAGACCA	CGCTTACTCC	CTCACTCAAC	CTCTTGCTAC	TTCCCACCTC	TCCTGTCCAA
55	CATCTAGTGT C	CACTTTCCAG	AACATACCAA	CAGCTTCCCC	AGTTCTGTGC	CTCTGCTCAG	GCTGTTCCCC	CTGCCTGGTC
	CACTTGTCCT C	CTTCTTGTC	CGGTCAAAAT	GCTTCTTATC	CTTCAAGACC	CAGCTCTAGA	GTCACCTCCA	ACCCCTTACC
	CACCAGCCCC C	TCTCCAAGT	CTGTGTCCCA	CAACCCCCCT	GCTCCCTCCA	GGGCACCCTC	CACCCTCTGG	GCCACAGTTG
	TCAGGAGTCA G	GCAGGGCAG	GGGCCGGGTG	GTGTCTTCTT	TGTGTTCTTG	CACTCAGGGC	AGAGCTCAGC	ACAGAGCAGA
	CGCTCAAAAA A	CATTTAAAG	GATAGAAGCA	TTGATTTGTG	GGTCCCCCAG	TCTGGCTCCA	GGATGCCAGC	CAGCTGCTCC
60	TAGAAGCAAA (CGGACTTTTC	CTGGGAAATC	CCAGAGGTGA	TGATCAGTAA	TCTCTCCCGT	GACTCGTAGT	TCAGCTCTTC
	CTCCATGAGC C	TGACTATCA	GTGGACCTTC	CAGAAAGAGC	CCCTTTTCCT	TCTCTCACCC .	ACAGCACAGG	GCACTGGGAA
	AATGCCCAAT C	GAGTCCTGCC	TCTGGGTTGT	GCTTTGGACT	TTTCAGTGTG	TCTCGCATCC	ACTCTTCAAC	TTGAATGTTG
	CAACAGCCAT G	AAAAAAGAA	ATGCAAAGCG	ATTCAGGATG	AGAGCAATAC	CCTACTCCAA	AGAAGGCAAC	ATAGAAGCTC
	AGAGAGATCA A							
65	GGTAGAGATG A							
05	GCCAGTGGGT T							
	ACTAATGTTT A	TTGAGCCTA	GTGCAGTGCG	TGGGGCATTT	TGCACATTGT	CTCTGATCCC	TATGACAACC	CTGAGAGGTA
	GTGGTTTTAA C							
	TAAGTAAGGC A							
70	AATCACTTCA G	TOUCHOUNTE	1DADDOARDA	TAACCCIAICI	CACCATOCA	CAGACTGTCC	2474944994	AAACTAGGCA
70	GATGGGCTGG C	TOCTTIOUT (TURCOOMMAI	AGGTCTGG A A	TGATATCATT	TTTTTTTTTTT	AATAAATTAA
	CTCACCCACC A	CYCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	GAGAGGGGGG	AAGTTGAGGA	VCACCOCANA VOOTOTOGANA	GAGGGCCCCG	DOLVATADATA	AAGGAACCTC
	AATCCTCCCA T	CACCOCIII	TTCAAGGAGG	TCAAGGGTCC	AACACTTGAG	PLOSTEDITA	CICATACO	ATACTCCCCA
	AGGAAATATC C	CACCOCAACC	T T CAMOUNDU	AGAACATGAG	CUCCUCCETES	AGAACCAACC	CIGITOGIGG	COTOTOTO A
75	ACCCAGGGGA	CAGIGGAGC	CICONONION	DADIAJAADA ADADDYAJABA	AAACAGCCC	PACCECCY COL	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	TTCTCTCTCTCC
75	ACCCAGGGGA (TOUGGIGCA	CIOGNOCOCO	JUCATUCAUA	AAACAGCCIC	, ACCICCACCI	COOCHICICE	1101001000

TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTTC CACTITCTIT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG TTCGTGCTGG CCACCCTAGA GAACATCTIT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGGC CATCACCATC TCCAACAACT TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGCG TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGGTCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA GGGAGCAGAC AGTGAGCAAA TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA AGGACAATTT CTTGCATTAA
TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA GCCAGGTTCC AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGGC TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGAÇCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCCT CTGGCCCTCC
TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTTT TAAGGCTTCA AAAAAAAATG
TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC TCCGAAGAAA CGGCCGCGTG
TCTCAGGGGA GCGCAAACAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTCGCC TTGGGAGCCG TACGTGGCAT
GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA CACCTTCCGC GTAAACGCCC ACTGTTTACA TCCAAAACTC AGACACAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCCAC GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA GTTTCCCTGT GGTCGTGGGA AGTTGGGAAA AGTTCCCTTC CTTCCGGAGG GAGG CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAACGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCACC AGCCGGTACC TGGGAAGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA TAGAACCTGG AGGGAATGAA CCTGGAGGGC TAGAACCTGG AGAATGAGAA AAATTTACAT GGCAAAGAGC CCATAAATCC

	AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAA AAAAAGAGGC TGTGTTTTGT CACACAG	GGC
	AGTCATTCAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT GTGGGGA	TCC
	ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAAC	ATC
	TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAAA	CAT
_		
5	GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAA AAATGATAGA CCGTCAA	
	TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA TCCCAGCACT TTGGAGC	CGA
	GCGGOTGGAT TOTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC ACTCTCTACC AAAAATA	CAA
	AAATTAGCCA GCCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCC	CCC
	AAATTAGCCA OGCATOGTOG CAGOCACCTO TOATCCCAGC TACTCAGGAG GCTOAGACAG GAGAATCGCT TOATCCCAG	300
	AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAG GACTCCGTCT CAAAAAA	AAA
10	AAAAAAAAA AAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT TCTATGAGCC CAGGAGG	GCC
	TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT TCAGAAGGAC TGTGCGT	GCT
	CGTTGCATCC TTTGCAAGTG TCCAAACCCT GATCCCAGCT GTGCTTAGGG GTTCCTGCAA ACCTTTTCCA GGTGTTA	ATT
	ACCTCCCACT TCATTTCCTG TTTACCAACT CAGCTTTTTG TTTTAGTGTG TTTGAATTCC CTGAACTGAC CGTTGTC	
	TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT GCAGAGTGGC TGAAAGC	TGG
15	GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACA ACCCACATAC CCACACATGC ACACACACA ACACACAC	
~~	ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA CTTGGTATCC TGGAGAG	AGT
	ACTIVIDATE TO THE PROPERTY OF	LTC
	GTGAAGTCCT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA CAAGTCACCA CCAACCC	
	TGCGCCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC CCCCTGGATG GGAGTGATGT GAAACTT	GAA
	GGGCGGTCAG AGCAAGGGTC GGGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA GGGGCACAGA GGAGGCC	CTG
20	GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC TCAGATGTGT CTGTCTC	
20		
	TATTAGGTTC AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT CCTCTGAGCT CCAGACC	
	CTGGACCCAA CCAGCCCTAT GGGGTCGCAT CCCCACCTGC CTGGAATTCT CCAAAGAACC TCCCCTTTAA CAGTTCC	AGC
	CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCCTCT AAATCAGCCC CCCATCTCTG CCTTTGCAGG AGATGGA	AGC
	CATGACACCT GCCTCGCCCC TGTCCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG TCAGGTTTAC CCTCTAA	
25		
23	CCTCTGGAAT CCAGTCTCTC AGTCTCCATC ATCCCAGGTC GAAGCTAATG GGCTAACTGG TCCTTGCTTC CACTCTA	
	CCACTGCAGT CCTGACTTCC TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG CCAACCTGAC TGAGATA	
	TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACA	GGC
	GCGTTTGGGA CCCCATGTTC TATGCTCTCA CAGGACCTTT TGCTTGATTT TTCACTGTAC TTAGGTCAGT TTGCAGT	
	TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC CTAGCACCGC TGTGTGG	
20		
30	CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTTGG	
	TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC ACTCACATCC CACTCTG	AGT
	CCAAATGTTC TCTCCCTGGA AGATATCAAT GTTTCTGTCT GTTCGTGAGG ACTCCGTGCC CACCACGGCC TCTTTCA	.GGT
	GAGTCAAAGG GATTCCTCAG TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT CCCTGGAAAG CTCAACT	
	ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC AGGTGTCCAA GTCCCTG	
25		
35	GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTT	
	ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA GTAAATACCC AGTGGAT	
	ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG TGGGAGATCA GAACACC	CTA
	AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTTGGGG	ACA
	GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATG	
40	AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCCGCACTC AGCAGGCATC TTTCTGA	
40		
	TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC TGAGAAATTT ATAAGCA	
	TCTGGTGCTA TACTITGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCCAAG CCAGGGGTAT GCAGGAA	ATG
	GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTTC AGAGGAC	TCT
	GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTC	TGG
45	GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG CCAGAGGATC CACTTTC	AAG
73		
	GTGGCAAGTT GGTTCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC TTCCAAGTAA GCAATGC	
	AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGA	AGT
	CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG TAATTCGGGG GGCATAT	GAA
	AGCCACCACA CACCACAGGG ATCTTTTTAG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC AGGGGCA	AAG
50	CCTCACTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC CTCACTCAAC CTCTTGCTAC TTCCCACCTC TCCTGTC	
30		
	CATCTAGTGT CACTTTCCAG AACATACCAA CAGCTTCCCC AGTTCTGTGC CTCTGCTCAG GCTGTTCCCC CTGCCTG	
	CACTTGTCCT CCTTCTTGTC CGGTCAAAAT GCTTCTTATC CTTCAAGACC CAGCTCTAGA GTCACCTCCA ACCCCTT	
	CACCAGCCC CTCTCCAAGT CTGTGTCCCA CAACCCCCT GCTCCCTCCA GGGCACCCTC CACCCTCTGG GCCACAG	TTG
	TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGTCTTCTT TGTGTTCTTG CACTCAGGGC AGAGCTCAGC ACAGAGC	
55	CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA GGATGCCAGC CAGCTGC	
33		
	TAGAAGCAAA CGGACITITC CTGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCGT GACTCGTAGT TCAGCTC	
	CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC ACAGCACAGG GCACTGG	GAA
	AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC ACTCTTCAAC TTGAATG	TTG
	CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA AGAAGGCAAC ATAGAAG	
~ 0		
60	AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA AGCCCCATGC CTCTGCT	
	GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA TGAAAGA	GGA
	GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT AAGGGTGCAA AATGTAA	ATT
	ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC TATGACAACC CTGAGAG	
	GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGC	
65	TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC CCTCGCCATC TGTATCC	
	AATCACTICA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AAACTAG	GCA
	GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT TTTCTCTTTT AATAAAT	TAA
	CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG GTTGATAAGG AAGGAAC	
	AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG CTGTTGGTGG ATACTGG	CCA
70	AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG ATCAGAGGGG GCTCTGT.	
	ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT CGGCTTCTCC TTGTCCT	
	TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCT	
	AUDITORIA MARCOCCA ATOCTOLATO ROLOGIA A ACCORDA CITALOCCAL CONTROL ROLOGIA	TCC
	CACTITETIT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAA	
_	CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG TTCGTGCTGG CCACCCT	
75	GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGGG AACCTGG	CCG

CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGGC CATCACCATC TCCAACAACT TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGCG TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCCT GCTGCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG
ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC
ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA GGGAGCAGAC AGTGAGCAAA
CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG ACAGTTGCTT TTCAGCATGG GCCCAGGAAT GCCAAGGAGA AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAAATCACA ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAAA AGACTCAAGT GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA GCCAGGTTCC AGCTCACCAA TACTATTIGCA CACCACCTGT CCTGCCTC CTGCAGAAAA CAGCCTGAGC TCCACCTCGG CTTCTCCTTG CCCTGGCTGG
TTGTCCTTAA CCCCTGTCTC CTTCTGGACC AGTTTTTGTC CTTCCCTTGT GACCCTGAGG GGTAACAGCC TCTTTTCCAC
TTTCTTTCAG CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAGACCG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGTAC GCTGCICCTG AGCTCACCCA TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GNCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGCAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAATCCA ATAAGCACAT ATTGAGCACT TGCTGTATAT GCAGTATTGA GCACTGTAGG CAAGAGGGAA GAAAGAGAAG GAGCCATCTC CATCTTGAAG GAACTCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA
TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGA TGATCCTATC ACAACCTGAG AGTAGTTTT ACTCCATTTA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG
AATCTCCAGG TCTGGAATGA TATCATTTT CTCTTTTAAT AAATTAACTC ACCCACCACA CGGCTTTGAG AGGCTCAAAA
GGGCTCCAACT CCCTTGGGAG GGCCCCGGTT GATAAGGAAG GAATGTGAAT CCTCCCATCA CGGAAGCTTC AAGGAGGTCA
AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGAACATGAG
GCCCCGTTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA CCCAGGGGAG TCAGGTGCAC TGGAGCGCG GCTGCAGAAA
ACAGCCTGAG CTCCACCTCG GCTTCTCTT GCCCTGGCTG GTTGTCCTTA ACCCCTGTCT CCTTCTGGAC CAGTTTTTGT
CCTTCCCTTG TGACCTGAGG GGTAACAGCC TCTTTTCCAC TTTTTCTAG CGCCGACATG CTCAATGTCA CCTTGCAAGG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT
GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCTC GGCATCCTCT
CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACAC
GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTGTTGA TGTCTCCGGT
AAAACACCGG AGACTAATTC CTGCCCTGCC CAATTTTCGA GGGAGCATGG CTGTGAGGAT GGGGTGAACT CACGCACAGC

CAAGGACTCC AAAATCACAA CAGCATTACT GTTCTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCCTTC CCAGGAGTGG AGGAGGCCTG GGGGAGGGAG AGGAGTGACT GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCCCCAGCAA GACAACTTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG TGCAATGGCT GAGTGCACAA GTGAGTTGTT GCCCTGGGTT TCTTTAATCT ATCAGCTAGA ACTITGAAGG ACAATTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAAC AACCTGGAGA
CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA TGAGCACTTC
TGTATATCAG TATTGAGCAC TGTAGGCA ATGTTCTCTC CCTGGAAGAT ATCAATGTTT CTGTCTGTTT GTGAGGACTC
CGTGCCCACC ACGGCCTCTT TCAGGCGCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC
AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T ATGTTCTCTC CCTGGAAGAT ATCAATGITT CTGTCTGTC GTGAGGACTC CGTGCCCACC ACGCCCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC
AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG
CCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTCTTCTGCC TGCACAAGAG
CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTGG
TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG
GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT
CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG
TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC
CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGCAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGGAGA AGGTGGGTGC CGGGCAGGG CTGCTCCAGC CGCCTCACCT CTGCTGGGAG GACAACCTGT CCCAGCACAG AGGAGGGAG GGAGGGCAGG CAGCGGGGA AAGTTTCCCT GTGGTCGTGG GGAGTT GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGC TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCCT CGGCCGCGTG TCTCAGGGGA GCGCAAACAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTCGCCC TTGGGAGCCG
TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA CACCTTCCGC GTAAACGCCC ACTGTTTACA TCCAAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCCAC GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACC GTGGGGACAT CAGGCTGCCC CGCAGTACCA GGGAGGACT GAGGTGCCC TCCGGAGAAG GGGAGGACT GCTCCAGCCC CGCAGTACCA GGGAGGACT GAGGTGCCC AGCCCCTTG CTCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCC CTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGA AGGCAGGCA GCGGGGAGAA GTTTCCCTGT GGTCGTGGG AGTTGGGAAA AGTTCCCTTC CTTCCGGAGG GAGG CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTICACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TCAGCTAGA ACTTTGAAGG ACAATTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC

ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCACC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA CCTGGAGGGC TAGAACCTGG AGAATGAGAA AAATTTACAT GGCAAAGAGC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAA AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT GTGGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAAA AAATAGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC ACTCTCTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA GACTCCGTCT CAAAAAAAA AAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT TCTATGAGCC CAGGAGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT TCAGAAGGAC CAGGAGGGCC CCTCCACACTC AGGICTATICCA AGCITCT TOTAL AGGICTATIC AGGICTATIC TOTAL AGGICTATIC TO GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC TCAGATGTGT
CTGTCTCCCT TATTAGGTTC AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT CCTCTGAGCT
CCAGACCCTG CTGGACCCAA CCAGCCCTAT GGGGTCGCAT CCCCACCTGC CTGGAATTCT CCAAAGAACC TCCCCTTTAA CAGTTCCAGC CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCCTCT AAATCAGCCC CCCATCTCTG CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG TCAGGTTTAC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT CCCTGGAAAG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA GTAAATACCC ACTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCCAAG CCAGGGGTAT 55 GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG CCAGAGGATC CACTTICAAG GTGGCAAGTT GGTTCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGAAGT CCAGCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG TAATTCGGGG GCCACAGTTG TCAGGAGTCA GGCAGGCAG GGGCCGGGTG GTGTCTTCTT TGTGTTCTTG CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTITTC CTGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCGT GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA

TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC CCTCGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AAACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT TTTCTCTTTT AATAAATTAA CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG CTGTTGGTGG
ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT CGGCTTCTCC TTGTCCTGGC TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGGG
AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGC CATCACCATC TCCAACAACT TCGACTGGCT
CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG
TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGCG TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCT CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA
GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG
TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGG ACAGTTGCTT TTCAGCATGG GCCCAGGAAT TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGA GCCAGGTTCC
AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC CTGCAGAAAA CAGCCTGAGC TCCACCTCGG CTTCTCCTTG
CCCTGGCTGG TTGTCCTTAA CCCCTGTCTC CTTCTGGACC AGTTTTTGTC CTTCCCTTGT GACCCTGAGG GGTAACAGCC
TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCITTGTC CTCAGCCTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGTAC GCTGCTCCTG AGCTCACCCA TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGGGC ATCATCGATG
TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GNCCTGCCCA ATTITGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGCAGGGAGA GGAGTGACTG AGCTTCCCTC CCGGTGGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGACTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAATCCA ATAAGCACAT ATTGAGCACT TGCTGTATAT GCAGTATTGA GCACTGTAGG CAAGAGGGAA GAAAGAGAAG GAGCCATCTC CATCTTGAAG GAACTCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTIT ACTATAAGGA AAAGACACTG AGGTCTAGA TGATCCTATC ACAACCTGAG AGTAGTTITT ACTCCATTTA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTTAAT AAATTAACTC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTTGGGAG GGCCCCGGTT GATAAGGAAG GAATGTGAAT CCTCCCATCA CGGAAGCTTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGAACATGAG GCCCCGTTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA CCCAGGGGAG TCAGGTGCAC TGGAGCGCGG ATCCAGCCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA

CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGTAC GCTGCTCCTG AGCTCACCCA GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TIGGTGATCT GGGGGTGTAC GCTGCTCCTG AGCTCACCCA
TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC
ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT
GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG
TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCTC
GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG
CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGGCC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC
AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC
CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAACACA CACTGCGGA CCTCCATCTC CGTGGAACTT
TTGACGCACA ACCTGCAGA CTCCCCCC CACCAATGCC AACGAACACA CTCTATGCACCA CCTTGGGAAA TGCAGTGTGTG 10 CACGCACAGC CAAGGACTCC AAAATCACAA CAGCATTACT GTTCTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCCTTC CCAGGAGTGG AGGAGGCCTG GGGGAGGGAG AGGAGTGACT GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCCCCAGCAA GACAACTTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG TGCAATGGCT GAGTGCACAA GTGAGTTGTT GCCCTGGGTT TCTTTAATCT ATCAGCTAGA ACTITGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA AACCTGGAGA CCAGGATTTT ATGGCTCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA
TGAGCACTTC TGTATATCAG TATTGAGCAC TGTAGGCA ATGTTCTCTC CCTGGAAGAT ATCAATGTTT CTGTCTGTTT
GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG
ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT
GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA
TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC
TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTG AAAACCATGT CCATGAGCC GATGCGCGG GTGCGCTTGT
CCTGATGCTG GTGAGCATCA ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCC GATGCGCGC GTGCGCTTGG
CCAAGCTCTA CAGCTTGGTG ACCGCCT TGTGTCATCA CCCTACCCATC CCCTCATCTGG GAAGTGTTCA CCCAACACTGCT 20 TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T ATGTTCTCTC CCTGGAAGAT ATCAATGTTT CTGTCTGTTC GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA
CACCATCCAG CCCCCTTCC TCTGGGTGCT GTTCGTGGTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTTCTTCGCC
TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG
CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT
CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCCG GATGCGCGGC CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGA CGGTGGGGAC ATCAGGCTGC CCCGCAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGGAGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCCTCACCT CTGCTGGGAG GACAAACTGT CCCAGCACAG AGGGAGGGAG GGAGGCAGG CAGCGGGGAG AAGTTTCCCT GTGGTCGTGG GGAGTT GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGGC TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCCT CTGGCCCTCC TGTCTCTCCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTTT
TAAGGCTTCA AAAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT
GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC TCCGAAGAAA CGGCCGCGTG TCTCAGGGGA GCGCAAACAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTCGCCC TTGGGAGCC TACGTGGCAT GACAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA CACCTTCCGC
GTAAACGCCC ACTGTTTACA TCCAAAACAC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG
TTACGCGAGG CAAATTTATT CACATGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGAG GGACGTTTTT GCCGTCCCAC
GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA GTTTCCCTGT GGTCGTGGGG

CAATAAGAGA TATTTCCTCA AATTTGCCTC AAGATGGAAA CCCTTTGCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA CAGCACAAAT CTAAGCAATC ATGTGGATGA TITCACCACT TTTCGTGGCA CAGAGCTCAG CITCCTGGTT ACCACTCATC AACCCACTAA TTTGGTCCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAAAATTAC ITCAGCTTTC AAATACATTA ACACTGTGAT ATCITGTACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT TIGGCGTATT TCTTTGCAAG CTGTTCCCCT TTTTGCAGAA GTCCTCGGTG GGGATCACCG TCCTCAACCT CTGCGCTCTT AGTGTTGACA GGTACAGAGC AGTTGCCTCC TGGAGTCGTG TTCAGGGAAT TGGGATTCCT TTGGTAACTG CCATTGAAAT TGTCTCCATC TGGATCCTGT CCTTTATCCT GGCCATTCCT GAAGCGATTG GCTTCGTCAT GGTACCCTTT GAATATAGGG GTGAACAGCA TAAAACCTGT ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT GCCCTTGGTG TGCACTGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA AACAGTTTTC TGCTIGGTTG TAATTITIGC TCTTTGCTGG TTCCCTCTTC ATTTAAGCCG TATATTGAAG AAAACTGTGT ATAACGAGAT GGACAAGAAC CGATGTAAT TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAAACCC CATAGCTCTG TATTTTGTGA GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT GAACTGACCA CCCTTAGAAG CACTCCTCGG TACTCCCATA ATCCTCTCGG AGAAAAAAT CACAAGGCAA CTGTGAGTCC GGGAATCTCT TCTCTGATCC TTCTTCCTTA ATTCACTCCC ACACCCAAGA AGAAATGCTT TCCAAAACCG CAAGGGTAGA CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTTCTT TAATTGATCT AATTTACATA TTCTGCGTGT TGTATTCAGC ACTAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTACTACTITT TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT GGTGAATGTT CAATGGGAAC TGGTCACCAT GAAACTTAG AGATTAACGA CAAGATTTTC TACTTTTTTT AAGTGATTTT TTTGTCCTTC AGCCAAACAC AATATGGGCT CAAGTCACTT TTATTTGAAA TGTCATTTGG TGCCAGTATC CCGAATTC GCCACCATGG AAACCCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG ATACAGCACA AATCTAAGCA ATCATGTGGA TGATTTCACC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACTC ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACTAT TGCCCACAGC AGACTAAAAT TACTTCAGCT TTCAAATACA
TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCAACTCTGC TCAGGATCAT TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA TTGATCTCCC TATCAATGTA TITAAGCTGC TGGCTGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC AAGCTGTTCC CCTTTTTGCA GAAGTCCTCG GTGGGGATCA CCGTCCTCAA CCTCTGCGCT CTTAGTGTTG ACAGGTACAG AGCAGTTGCC TCCTGGAGTC GTGTTCAGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCCTCC ATCTGGATCC TGTCCTTTAT CCTGGCCATT CCTGAAGCGA TTGGCTCGT CATGGTACCC TTTGAATATA GGGGTGGACA GCATAAAACC TGTATGCTCA ATGCCACATC AAAATTCATG GAGTTCTACC AAGATGTAAA GGACTGGTGG CTCTTCGGGT TCTATTTCTG TATGCCCTTG GTGTGCACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTTGAACAG AAGGAATGGC AGCTTGAGAA TTGCCCTCAG TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TTCTGCTTGG TTGTAATTTT TGCTCTTTGC TGGTTCCCTC TICATITAAG CCGTATATIG AAGAAAACTG IGTATAACGA GATGGACAAG AACGGATGTG AATTACITAG TITICTIACIG CTCATGGATT ACATCGGTAT TAACTTGGCA ACCATGAATT CATGTATAAAAAA CCCCATAGCT CTGTATTTTG TGAGCAAGAA ATTTAAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG GAACAAGCAT CCAGTGGAAG AACCACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG CATGAACTGA CCACCCTTAG AAGCACTCCT GAATTCGGGA AAAAGTGAAG GTGTAAAAGC AGCACAAGTG CAATAAGAGA TATTTCCTCA AATTTGCCTC AAGATGGAAA CCCTTTGCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA CAGCACAAAT CTAAGCAATC ATGTGGATGA TTTCACCACT TTTCGTGGCA CAGAGCTCAG CTTCCTGGTT ACCACTCATC AACCCACTAA TTTGGTCCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAAAATTAC TICAGCTITC AAATACATTA ACACTGTGAT ATCTTGTACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA
GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT
GTGGTCATTG ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT TTGGCGTATT
TCTTTGCAAG CTGTTCCCCT TTTTGCAGAA GTCCTCGGTG GGGATCACCG TCCTCAACCT CTGCGCTCTT AGTGTTGACA
GGTACAGAGC AGTTGCCTC TGGAGTCGTG TTCAGGGAAT TGGGATTCCT TTGGTAACTG CCATTGAAAT TGTCTCCATC TGGATCCTGT CCTTTATCCT GGCCATTCCT GAAGCGATTG GCTTCGTCAT GGTACCCTTT GAATATAGGG GTGAACAGCA TAAAACCTGT ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT GCCCTTGGTG TGCACTGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA AACAGTTTTC TGCTTGGTTG TAATTTTTGC
TCTTTGCTGG TTCCCTCTTC ATTTAAGCCG TATATTGAAG AAAACTGTGT ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAACCC CATAGCTCTG
TATTTTGTGA GCAAGAAATT TAAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT GAACTGACCA CCCTTAGAAG CACTCCTCGG TACTCCCATA ATCCTCTCGG AGAAAAAAAAT CACAAGGCAA CTGTGAGTCC GGGAATCTCT TCTCTGATCC TTCTTCCTTA ATTCACTCC ACACCCAAGA AGAAATGCTT TCCAAAACCG CAAGGGTAGA CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTTCTT TAATTGATCT AATTTACATA TTCTGCGTGT TGTATTCAGC ACTAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTACTACTTT TGCATGAAAA TAGAGCTTC AAGTACATG CTAGCTTTA TGGCAGTTCT GGTGAATGT CAATGGGAAC TGGTCACCAT
GGAACTTTAG AGATTAACGA CAAGATTTC TACTTTTTTT AAGTGATTTT TTTGTCCTTC AGCCAAACAC AATATGGGCT
CAAGTCACTT TTATTTGAA TGTCATTTGG TGCCAGTATC CCGAATTC AACAAGAAAA GCGTTGGTAG CTCTGGTGAA
TCCCAAAAGA ATGTGGCAGT TGCTAGCCAT GCTCCTGAAT ATGTATAAAC AGTACATCAT ATGACTAAGA GTTTGACTTA
AGGTTCAGTT TTTATGTGTT TGAACCCCAA ATTAGTTATT TAATAGTTGG CACCCCAAAA CAAGTTACTT AACCTCACTA
AGGTTCAGTT TTCCTGTTTA TAAAATGTAG ATAGTGATTAG TAAGATTACTT TAAGAGTTAATT TTTAGGAATAA AAATGAAATA
AATGAAATTACTTTAGCGAAC ACCTGCCATA TCTTTGCTAT TAAGAATTAC TTTAGGAATTACT TTTAGGAAAAAT AAATGAAATA
TTTAGGAATTACTTTAGCGAAC ACCTGCCATA TCTTTGCTAT TAAGAATTAC TTTAGGAATTACTTTATTCTCCC TTTAGCTTCACTTCCTTCCTTCACTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTTCACCATTTAGCTTCACCATTTAGCTTTTAGCTTTTAGCTTTAGCTTTTAGCTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTAGCTTAGCTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTTAGCTTAGCTTAGCTTA TCAGATTTAT TTAGGATAAC ACCTGGCATA TGTTTGGTAT TCAGAATTAG TTGCTGCTGT TTTATTCTGC TCTCCCTTGC ATCCCACTTT TCTAAGTTGT AAACTAAATA GTTGTACACA GATTGACAGA TTAAGAAAGG CTTGTGATTG TGCTAGACCT ATGCCTATGC CTCTGTCTCA CCAGATTCCA GGTGTATATG TGGAGGTGGG ATAGGGAGTG GAGTAAGTGG GTAAATATTA AATTOCCCAG TTGGGCACCA TCCTGAATAT TATCTCTAAA GAAAGAAGCA AAACCAGGCA CAGCTGATGG GTTAACCAGA
TATGATACAG AAAACATTTC CTTCTGCTTT TTGGTTTTAA GCCTATATTT GAAGCCTTAG ATCTCTCCAG CACAGTAAGC ACCAGGAGTC CATGAAGAAG ATG GATCTTCATG TGGAATGACT GGTTTCATTC AATAGACTTA ATTCAGCAGT CTGTGGGGAA GAGCAAGGTA TGATAGAATG GTTCCTCAAG TGCTTCAGAT GTGAAGTGGG TTTAAATATA CTGTCCCTGT CTTCTTCAGA GTTTTGGTAA AGATAAAATA GGACACTCAT TTAAAAGCAA TCTTTGCAAA TGACAAGCCA CTATAGACAT TAATAGAGTT

TTCATTTCCA GTATTATCAT TAATATCAGA TCCTGGAAGA AGGTTGAGCC TTGACCTAGA GCAAAAAAAC AGAAGAATTA TGTGTTCTGA GCCAGATTAG GGCACAGTAG AGAAAGAGGA GTCTCTGAAA ATGTTTCCAA TTTCGCTGGT CAGACAGCGG ATCATCAGTG AATCAGATGA AAATTTGTGG ATTTATGCAC TAACTGATCA GCAGGAAATT AAACAAGAAA AGCGTTGGTA GCTCTGGTGA ATCCCAAAAG AATTTGGCAG TTGCTAGCCA TGCTCCTGAA TATGTATAAA CAGTACATCA TATGACTAAG AGTITGACTT AGGGGTTAGA TTTTATGTGT TTGAACCCCA AATTAGTTAT TTAATAGTTG GCACCCCAAA ACAAGTTACT TAACCTCACT AAGATTCAGT TTTCCTGTTT ATAAAATGTA GATAGTGATA GTATGTACTT TATAGGATTA TTGTGAAAAA TAAATGAAAT ATCAGATTTA TTTAGGATAA CACCTGGCAT ATGTTTGGTA TTCAGTAATT AGTTGCTGCT GTTTTATTCT ACCAGATATG ATACAGAAAA CATTTCCTTC TGCTTTTTGG TTTTAAGCCT ATATTTGAAG CCTTAGATCT CTCCAGCACA GTAAGCACCA GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GGTAAGTAGA GATTCAATTA CCCCTCCCAG GGAGGCCCAA ATGAATTTGG GGAGCAGCTG GGGTAGGAAC CTTTACTGTG GGTGGTGACT TTTTCTAGGA CATGTGCAAA CTATTGGGCA TTTCCCAGGG ACTCTGTAGT GGAGCCAAGC TAGAAAGCAG AGGCAAGTGG GCTGAGCAAC ACCTAAGGAG GAAGCCAGAC TGAAAGCTTG GTTCCTTGCA TTTGCTCTGG CATCTTCCAG
AGTGCAAATT TCCTACCAAG GTAATGAGGG TAGAGGAGAG AAAGAAGCTC TTTCTTCCCC TGATTCTCAT TCCTGAAAAG
ACGGTTGGTC CTTAAAATTC CATGGATGTA GATCTTATCC CCACACCCAG ATTCTAGTCC TCTGGAGATA AAGAAGACTG ACGGTTGGTC CTTAAAATTC CATGGATGTA GATCTTATCC CCACACCCAG ATTCTAGTCC TCTGGAGATA AAGAAGACTG CTGGACACTA ATGTATCCTC TCTGGACTTT TGCAGCTCCA GATGGCGTGT TAGCAGGTGA GTCCTCTGTT CTTGTTCCCT TGGTGTATCA ACATGTCTGT GCATTGCTT CCTCTCACTA TTTTCTCGT CCCATCACTT CTGCTTTCTA ATGAGCATGA ATCTAGTCCT TGGCCAGACT ACTTCCCTC TCCACCTTGC CTTGTCTTTC TTTTTTTCCC TGATTCATTG CATTCTCTCA AGACACTTTG GCATGATCTC GCTCAATAAT TACATTATA CCATGTCTGT TGCACATATA CATGTCTCAT TCTCTCTCCT AGACACTTTG GCTGGTTACAT GGCTAAGGAA CTGGATTTCA ACGTAAGTTC CTTGGACTATA ACTCCAGTTC TCTCTCTCCT ACTCACTACT TTTGTTATCA CCATGTATCT ACCTCATTTTGGACT ACTCCCCT GTTCCAGGAA GCCATTCAGA ACTGACTTTC TAGTGCCTC TCACTACTTT CTGGAACTGA ACTCCCTT GTTCCAGGAA GCCATTCAAG ACTGACTTTC TAGTGCCTC TCACTACTTT CTGGAACTGA ACATCCCCTT GTTCCAGGAA GCCATTCAAG ACTGACTTTC TAGTGCCTC TCACTACTTT CTGGAACTGA ACATCCCCTT GTTCCAGGAA GCCATTCAAG ACTCACTTTC TAGTGCCTC TCACTACTTT CTGGAACTGA ACATCCCTT TCACTCTGACT ACATCACTT TAAAATAGT CAAAAATATT CAGAGCTTGG AGAAACCTTA TATTTCACC AGTCCAGTAA ATTTAACCAC CCATAATTCA CTCATTCATT TACAGAATAA ATATTTAATG TAACAAGAGT AGAGTGAGTC AGACCGGG GCACCAATAC TAATTTCAC AGACTCCATTAAAAACA ATGGTTCCCT TCACTCCCT TGGTTGGGC GTTCCCTGGG GCACCAATAC TAATTTCTC TTCCCCTAGA AATCAAAAACA GGGTCTTATC ACCAACAGAA TAAGGACAGG TTGACCACTG ATTGTCACGAA TAGTTCTCC TTCCCCTAGA AATCAAAAACA GGGTCTTATC ACCAACAGAA TAAGGACAGGA TAAGGACAGG TTGACCACTG ATTGTCACGAA TATTTCTCC TTTCCCCTAGA AATCAAAAACA GGGTCTTATC ACCAACAGAA TAAGGACAGG TTGACCACTG ATTGTCACAAA TAATTTCTCC TTTCCCCTAGA AATCAAAAACA GGGTCTTATC ACCAACAGAA TAAGGACAGGA TAAGGACAGGA TAAGGACAGGA TATGCTCTCCTTTATCACCACTG ATTGTCACTCC TTTCCCCTAGA AATCAAAACA GGGTCTTATC ACCAACAGAA TAAGGACAGG TIGACCACTG ATTGTCAGAA TATTGCTTCG TTTGTACTTT
TAAGCCTAGA CAGTTTTCAA TGACTTTTT TCTCTCTACA TGTCTTTTCA TATTTTTATC TTCTTGAAGT CCCTCAGAAA
CCTAAGGTCT CCTTGAACCC TCCATGGAAT AGAATATTTA AAGGAGAGAA TGTGACTCTT ACATGTAATG GGAACAATTT
CTTTGAAGTC AGTTCCACCA AATGGTTCCA CAATGGCAGC CTTTCAGAAG AGACAAATTC AAGTTTGAAT ATTGTGAATG CCAAATTTGA AGACAGTGGA GAATACAAAT GTCAGCACCA ACAAGTTAAT GAGAGTGAAC CTGTGTACCT GGAAGTCTTC AGTGGTAAGT TCCAGGGATA TGGAAATACA GATCTCTCAT GTGAGGGATG GCTCATCTGA AGATGGGAAA AAACAGGTTA TTCCAAGGGT TAGGACACCA GAGTGGGATT CAAGGCCTCT CATTTTTAAG ACCCCTGCAT TGGCTGGGCA CAGTGGCTCA CGCCTGTAAT CCCAGCACTT TGGGAGGCTG AGGCAGGTGG ATCACGAGGT CAGGAGATCG AGACCATCCG GCTAACATGG
TGAAACCCCA TCTCTGCTAA AAAATATATA TATATAAAAT TAGCCGGGCG TAGTGGTGGG CACCTGTAGT CCCAGGTACT CGGGAGGCTG AGGCAGGAGA ATGGTGTGAA CCCAGGAGGT GGAGGTTGCA GTGAGCTGAG ATCACGCCAC TGCCCTCCAG CCTGGGCTAC AGAGCAAGAC TCCGTCTCAA AAAATAAATA AATAAATAAA AAAGACCCCT GCATCTCTTT TCTTCTACCC CCTTCCCTTT TGATTACTTG TATGCCTTCT TTCAATATTC TAGTCATCTC TCAATATTAT TCCTCCACCC TATTTTCCTC CCTTCCCTTT TGATTACTTG TATGCCTTCT TICAATATTC TAGTCATCTC TCAATATTAT TCCTCCACCC TATTTTCCTC
TATCTTTCTT GCCTAGATTC AGGTATATAT TATGTGGTCA AACAGCATGA CATATATGTG AACATTTCAA AGAGCTGGT
ATCTGGAATA GGATCAAAAG GTTTGACTTA AAGTTTTGCT CTGCATAATC CATATGGCAG ACCTGAATA TTAGGTTGTA
CTCTTCGTTA TGAAACATAT CTGGGTACAT TTCCTTATGT CCTCTGTGT TACTTAAGAA CACATATTC ATGCTTGTT
CATTTTTATC ACTCCTACTG CCAACAAATA GCATAGCATG CTTAGGCACA TGTGGCTTAA TTAGCAAATG TTGAATAAAC
AAATTAATGA TTTTGAATAG TGACCAATAG GTCTCTTTTA TACTCTATAT TTTTCCTTTG AGTGAAAAAA AATGTTTCAA
CCTCCATATG TAAATTCCAA ACACAAACTA AAGCAATGTA GAATAGCTTC TTTATTCCCT GGAGTAGGTT CTAGAGAAGT
CCTAAAGGAT TGGTCCTAAA TTAATTATGC TTATTTATGCT AGCGATATTT CCTTTCAAAA TTCTCCTTTA ATGAATGCT
TTTAATTTTT ACAAAAGCAT TAACCATAGA ATGTGATTCT TGTCTTTCAC TGACCAACAT GAATGTAGAA CTAGACAGGG ACCTACCAAC TCCTAAGTAT TGCTACCAAC TCCTAAATAC TGTGTTGGGC ATTCAGAATA GAATGTAGAA CTAGACAGGG TCCCTGACTT CTTGGAGCAC AGAGCAGTAT GGGAAGAGGA CATTAAATAA AGAATTACAT AAGTAATTAA TTTAAATTAT ACATGITITG AAGAAGTITI TITITGACAA CTATAATTAA CACTAGAACT GGGAAGTITC TATAAGGTAA GAGAGGACAA 55. AATAGACACT CTCCTAAGCT AAAATTCCCA AGAAAGACTG TTTATTTTCC CCTAACTAAC TAGAACTAGC AACAGAAGAT CTGAAAGGAA TTCTGGCTTT CAAGTGTTCC ATGTATGGAC TCATCAGGGA GGTCCGAGAG GCTTTGTGGC CCCAGACTGA CTITICAGGA GGGGAAAGGA TITATCAATA CACAAGACAG GCTCTAAGCA TIATITITGTG CCCTITAAAA ATCCACTITA TGAGCCAAAA AGTGAGTTAA TGATAATTCA TAGTTTCTGA CACATGCTCT ATGCGTGGCT CTCTTTTCTC TATTCATTCT CTCTCTCTTC ATTTATTGTT AAATAAATAA TGTAATGAAT GTTCTTCAGA CTGGCTGCTC CTTCAGGCCT CTGCTGAGGT GGTGATGGAG GGCCAGCCC TCTTCCTCAG GTGCCATGGT TGGAGGAACT GGGATGTGTA CAAGGTGATC TATTATAAGG ATGGTGAAGC TCTCAAGTAC TGGTATGAGA ACCACAACAT CTCCATTACA AATGCCACAG TTGAAGACAG TGGAACCTAC TACTGTACGG GCAAAGTGTG GCAGCTGGAC TATGAGTCTG AGCCCCTCAA CATTACTGTA ATAAAAGGTG AGTTGGTAAA GGAAAGGAAA AGCATCCATA GCAGGGGAAG GAAGAGAGAA CTTCTGAGCC TGAGCAGTTG CAGCTTGTAG AAGGGGGGGCA CCTGTGATAC ACTGGAAAGC CTACCAGACT TGCAATGAGG AGACCTGGGT GATAGTATAT ATCTCAATCT CTGTTTCAAA GCCTTGACTT GTTAAATGGT GATAGTAATA CCTGCTTGCA CTATGAAATT TTTATGAAGA TTAATGTGGT AATATTTGTG
AAATGACTTT GTAAACTGTT AAGCACTACC CAAGCATAAC AGATTGTGAT TACTATTTTG ATCTCAAAGT CATCTGTTGC
TCCTGGGGGA ACACTTATAT TTATCAAATT GAAAAAAAGT TTCAAAGTTG AATGAAGAAA GGATATAAAG AGCTTGAGGA TCCTGGGGGA ACACITATAT TTATCAAATT GAAAAAAAGT TTCAAAGTTG AATGAAGAA GGATATAAAG AGCTTGAGGA
GCCCATTCCA GCTTAGGAGG GCTGGGAAAG GAAACCAGCA AGTCAGTAAG CTGTGTGCCT GTGATTGAG GGAGGAGGGA
ATGGACTTGA TATGGAGAGG GTAGGGAGGT GGACTGCCTC TATGGCCTGT AAGAAAAACT GCTCTCCCA AACTCTTTAT
AAGAGAGGGA GCCTGTGAAG TATTCACITT TGAAGGAGAA AGTTAGACTT TTCCTTCACA CACTTTGTAC ATAATAATGT
TTAAAAAAGC ATGAGGTCAA AATACATAAT TAAGTCCTAG CAGTTCTCTG TTAACTAATT TGAGACTGAA GTGCTATGTA
CTTGTCTCTA GGCTTCCAGT ATCTTCATCT GTAAAACAGA ATATTTGGTC TAGATTCCAT TAGAATCATT TGATAACTTA
AAAAATATAT TGATGCTCAT GTCTCATTTC TTGAGATTCT GATTTAATTG GTTTGGGGTG CAGCCTGGGT ATACGTATTT
TTCATAGGTC TTTCACATAA TGGTAATGGG TAGCCAATAT TGAGAATCAC TTGTCTAGGT GATCTTTAAA TGATTTCTGG
ATGTAATATT CTGAGGCTCT ATAATTTGAG ACTAATCACA AAAATCGGTA CAGTTTATAA ACAGACTAAC AGAACCACAA

AATAATAGAA TTGGAAGGCA ATTTAACTAG TGCAATTTCT TCATTTTGCC TAACAGGCAT GTAAGAAATG ATGATTGATT GAGTAATAGG CATTGATGAC CCCTGTCCTC ACTTTGTCCC CTTTCCACCC CTTAATTATA TGTGAATTCT GGTCTTGTCA TITICGAATAA GGGGTTTATC TTTCCTATTG TCTTCCCCTC TGGGCACGGC ACACTGGCTA CTGGAGTTAA GAGGAAATGC TTAGGACTCC CTGTGGCTCC AGGGAGCACC AACAGAGCAA CTCAACCTAG TGTTAATCTG AGTGTTTTCT CTGTGCTTCT GGATGCCACA TCACGCTAAA AATGAAGGAC AAAGCTTGGT CTTTCTCTTA GGGAGGATGA AACTCTGAAC CTCATTTTTC AGTTCCCAAG ATGAATTATG TTTCTCATTG CATCTGTGTT CCACTACAGC TCCGCGTGAG AAGTACTGGC TACAATTTTT TATCCCATTG TTGGTGGTGA TTCTGTTTGC TGTGGACACA GGATTATTTA TCTCAACTCA GCAGCAGGTC ACATTTCTCT TGAAGATTAA GAGAACCAGG AAAGGCTTCA GACTTCTGAA CCCACATCCT AAGCCAAACC CCAAAAACAA CTGATATAAT TACTCAAGAA ATATTTGCAA CATTAGTTTT TTTCCAGCAT CAGCAATTGC TACTCAATTG TCAAACACAG CTTGCAATAT ACATAGAAAC GTCTGTGCTC AAGGATTTAT AGAAATGCTT CATTAAACTG AGTGAAACTG GTTAAGTGGC ATGTAATAGT AAGTGCTCAA TTAACATTGG TTGAATAAAT GAGAGAATGA ATAGATTCAT TTATTAGCAT TTGTAAAAGA GATGTTCAAT CTAAAGGCAA GGACCATGAA GTTCTAGATT GGAAATGTCC TCTCTTGACT ATTGCAAGTG CGATCTAGGA ATGAAAAGAC ATAGGAGGAT GCCAGTGAGG TGGATCATTT TTATGCTTCT TCTTCAGCTT ACTAAATATG AACTTTCAGT TCTTGGCAGA ATCAGGGACA GTCTCAAGAC ATAGGACTCT CAGGATGAAG TAGAGTCCAG GATTCCTCTG TGATTGTTTT GCCCCTCCCA AATTIATATC TITGAACTIAT GITCTIGTATC TITATACAGC ACCIGAACCA AGCATTITIGG AGAAATTICA GCIAATAATA ATAACCAAAA CCTTCGGCTC TGAAAACAGT CCAGGACTGA ATAAGATCTT GGGCAAAAGA ACTAGACGT TITGGTTTAT TITCCCTTTC ATTITATGTC TTCATCATAG TCATTGGAGG CTCATTCTTC TIGTCATGGA GTAAATGGGA TTAAAGTTC TACTAAGAGT CTCCAGCATC CTCCACCTGT CTACCACCGA GCATGGGCCT ATATTTGAAG CCTTAGATCT CTCCAGCACCA GTAAGCACCA GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GCTCCAGATG GCGTGTTAGC AGTCCCTCAG AAACCTAAGG TCTCCTTGAA CCCTCCATGG AATAGAATAT TTAAAGGAGA GAATGTGACT CTTACATGTA ATGGGAACAA TTTCTTTGAA GTCAGTTCCA CCAAATGGTT CCACAATGGC AGCCTTTCAG AAGAGACAAA TTCAAGTTTG AATATTGTGA ATGCCAAATT TGAAGACAGT GGAGAATACA AATGTCAGCA CCAACAAGTT AATGAGAGTG AACCTGTGTA CCTGGAAGTC TTCAGTGACT GGCTGCTCCT TCAGGCCTCT GCTGAGGTGG TGATGGAGGG CCAGCCCCTC TTCCTCAGGT GCCATGGTTG GAGGAACTGG GATGTGTACA AGGTGATCTA TTATAAGGAT GGTGAAGCTC TCAAGTACTG GTATGAGAAC CACAACATCT CCATTACAAA TGCCACAGTT GAAGACAGTG GAACCTACTA CTGTACGGGC AAAGTGTGGC AGCTGGACTA TGAGTCTGAG CCCCTCAACA TTACTGTAAT AAAAGCTCCG CGTGAGAAGT ACTGGCTACA ATTITITATC CCATTGITGG TGGTGATTCT GTTTGCTGTG GACACAGGAT TATTTATCTC AACTCAGCAG CAGGTCACAT TTCTCTTGAA GATTAAGAGA ACCAGGAAAG GCTTCAGACT TCTGAACCCA CATCCTAAGC CAAACCCCAA AAACAACTGA TATAATTACT CAAGAAATAT TTGCAACATT AGTTTTTTC CAGCATCAGC AATTGCTACT CAATTGTCAA ACACAGCTTG CAATATACAT AGAAACGTCT GTGCTCAAGG ATTTATAGAA ATGCTTCATT AAACTGGTG AAACTGGTTA AGTGGCATGT AATAGTAAGT GCTCAATTAA CATTGGTTGA ATAAATGAGA GAATGAATAG ATTCATTTAT TAGCATTTGT AAAAGAGATG TCTCAATATA ATAATATTCT TTATTCCTGG ACAGCTCGGT TAATGAAAAA ATGGACACAG AAAGTAATAG GAGAGCAAAT CTTGCTCTCC CACAGGAGCC TTCCAGTGTG CCTGCATTTG AAGTCTTGGA AATATCTCCC CAGGAAGTAT CTTCAGGCAG ACTATTGAAG TCGGCCTCAT CCCCACCACT GCATACATGG CTGACAGTTT TGAAAAAAGA GCAGGAGTTC CTGGGGGTAA CACAAATTCT GACTGCTATG ATATGCCTTT GTTTTGGAAC AGTTGTCTGC TCTGTACTTG ATATTTCACA CATTGAGGGA GACATTTTTT CATCATTTAA AGCAGGTTAT CCATTCTGGG GAGCCATATT TTTTTCTATT TCTGGAATGT TGTCAATTAT ATCTGAAAGG AGAAATGCAA CATATCTGGT GAGAGGAAGC CTGGGAGCAA ACACTGCCAG CAGCATAGCT GGGGGAACGG
GAATTACCAT CCTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAATT TTTTGAGACC
AAGTGCTTTA TGGCTTCCTT TTCCACTGAA ATTGTAGTGA TGATGCTGTT TCTCACCATT CTGGGACTTG GTAGTGCTGT GTCACTCACA ATCTGTGGAG CTGGGGAAGA ACTCAAAGGA AACAAGGTTC CAGAGGATCG TGTTTATGAA GAATTAAACA TATATTCAGC TACTTACAGT GAGTTGGAAG ACCCAGGGGA AATGTCTCCT CCCATTGATT TATAAGAATC ACGTGTCCAG AACACTCTGA TTCACAGCCA AGGATCCAGA AGGCCAAGGT CTTGTTAAGG GGCTACTGGA AAAATTTCTA TTCTCTCCAC AGCCTGCTGG TTTT AAGCTTTCA AAGGTGCAAT TGGATAACTT CTGCCATGAG AAATGGCTGA ATTGGGACAC AAGTGGGGAC AATTCCAGAA GAAGGGCACA TCTCTTTCTT TTCTGCAGTT CTTTCTCACC TTCTCAACTC CTACTAAAAT GTCTCATTT CAGGTTCTGT AAATCCTGCT AGTCTCAGG AAAATTATGC TCCAGGAGTC TCAAATTTTC TTATTTCATA
TTAGTCTTTA TTTAGTAGAC TTCTCAATTT TTCTATTCAT CACAAGTAAA AGCCTGTTGA TCTTAATCAG CCAAGAAACT
TATCTGTCTG GCAAATGACT TATGTATAAA GAGAATCATC AATGTCATGA GGTAACCCAT TTCAACTGCC TATTCAGAGC ATGCAGTAAG AGGAAATCCA CCAAGTCTCA ATATAATAAT ATTCTTTATT CCTGGACAGC TCGGTTAATG AAAAAATGGA CACAGAAAGT AATAGGAGAG CAAATCTTGC TCTCCCACAG GAGCCTTCCA GGTAGGTACA AGGTATTATT TTTTTCTACC CTCAGTCACT TGTGGCAGGG GAAGTCATAG TCACGGTGCT TAGGAGATGA AACTTTATTG ATTTAGGCAT GGATCCATCT AGTTTAATTA ATATATTGGG TATGAGGAAG CTACTTGCTG TACTTTCCAT GTGGTTCTCT CTCCCTGGAG AGGAACATTT TTACTCAGCT TGCAAACTGG AAATAGATTT TCTCACATTA GAAGCTCATT TTCTGGGTAT GAGACAGGAG AGTTCATACT TIACICAGET IGCAAACTIGG AAATAGATTI ICICACATTA GAGGICATT TICIGGGTAT GAGACAGGAG AGTICATACTIG
GTGTATGTAG ATCTCTGGCT TCTGGGTCTG ACATGTGCTG AGGGACACAT ATCCTTCACA CATGCTTTTA TAAATACTTG
ATAAAGTAAC CTGCTTCTTG ATTGGTCTTT ATAATCCATA AGCTGTGGGA TGCTTCTCTG AAGATGAAA TAGTAATAGA
GTCCCATCTA GCTATTCAAA GCCATTCCTT CATTGTATTC TGTGCACATG AAGTTGGGGT TTGTTACTGA CAAAATATAT
TCAGATACAT TTCTATGTTA AAAGGATTGT GAGATGCATA GGTAAATGTG TTTATTTTCA GTTTTACTTG TCAACATAGA
TGAATGAGAA AGAACTTGAA AGTAACACTG GATTAAGAAT AGGAAAAATTT GGCATGGATT TTGCTCCATT TTGTCCCATC TAATCACTTO GATAOTOTIC AGGTGTTCTT GGTCAGTTAC TTGGATGCTC TGAGCTTTAG TTTCTTGGTG ATTACAATGA AGATTTGAAT TACAGGATGG CTTTGAAAAA ATAAACAAAA CTCCCCTTTC TGTCTGTCGA GAATGTTGCA CAGGGAGTTA CAGAATGTTC TCATGACTGA ATTGCTTTTA AATTTCACAG TGTGCCTGCA TTTGAAGTCT TGGAAATATC TCCCCAGGAA GTATCTTCAG GCAGACTATT GAAGTCGGCC TCATCCCCAC CACTGCATAC ATGGCTGACA GTTTTGAAAA AAGAGCAGGA GTTCCTGGGG GTGAGTGAGC CTCCTCCAAC TTTGACTAGA GTAAGGGTTG GGTCTAGAAA AGAATATTGA GTTGCATCAA CTGTTTTCCC ACTIGGATIC ATGAGAGGTG TTAGGTCCTT TAAAAAACAT GGTAGATAAA GAGTTGACAC TAACTGGGTC CTTTTGGGAA GAGCCAGAAG CATTTCCTCA TAAAGACTTT AAATTGCTAG GACGAGAATG GCCAACAGGA GTGAAGGATT CATAACTTA TCTTACTTA GATGTAAAGA ACAATTACTG ATGTTCAACA TGACTACATA CATAAAGGCG CATGGAGAAA AGTATTGGCC TTCCATGCAT TAGGTAGTGC TTGTATCAAT TCTTATAGTG GCTAGGGTAT CCTGGAAAAT CTTACGTGTG
GATCATTTCT CAGGACAGTC TAGGACACTA ACGCAGTTTC TCATGTTTGG CTTCTATTAT TAAAAAATGA TACAATCTCG GGAAAATTIT TITGATTITC ATGAAATTCA TGTGTTTTTC TATAGGTAAC ACAAATTCTG ACTGCTATGA TATGCCTTTG TTITGGAACA GITGICTGCT CTGTACTIGA TATITCACAC ATTGAGGGAG ACATTITITC ATCATTIAAA GCAGGITATC CATTCTGGGG AGCCATATTT GTGAGTATAT ATCTATAATT GTTTCTGAAA TAACACTGAA CATAGGTTTT TCTCTTTCTC AGATCTAACC AGTTGTTTAT TCCCAGTATT AAGATGATAT TTATAATTCT TAATTATAAA TATATGTGAG CATATATAAC ATAGATATGC TCATTAACAA CAACAAAAGA TTCTTTTTAC AATTAACGGT GGGTTAAACA TTTAGCCCAC AGTTTTATCC CATGAGAAAC CTGAATCTAA TACAAGTTAA ATGACTTGCC TAAGGGCCAC TTGACTAATA GTAATTGAAC CTAAACTTTC

AGAATCCAAC TCCAGGAACA TACTTCTAGC ACTATTCATC AATAAAGTTA TATGATAAAT ACATACAACT TTATCTGTCA ACTAAAAATA ACAACAGAGG CTGGGCATGG TGGCTCACAC CCGTAATCCC AGCACTTTGG GAGGCTGAGG CAGGTGGATC ACCTGAGGTC AGGAGTTTGA GACCAGCCTG ACCAACATGG TGAAACCTCA TCTCTACTAA ATATAAAAAA TTAGCTGAGT OTGATAGTGC ATACCTGTAA TCCAGCTACT TAAGAGGCTG AGGCAGGAGG CTTGTTTGAA CCTGGAAGGC AGAGGTTGCA GTGAGCTGAG ATTGTGCCAT TGCACTCCAG CCTGGGCAAT AAGTGCGAAC TCTGTCTCAA AATAATAATA ATAATAATAG AAAATAAAGT TGTCTTCATG AAAAATGAGG AAAGAGATTG CTGGGGTGAG AAACATTAAG ATCAATGGGC ATATGGTGAC CTTCTATGCC CTAGAAACTC TTTTANGGTA TTTTCTCCTG GTATCTCTTT TACNCATCGT TCTATCTGGA AAAATAGGTG GATGAGTGAG ATAATAACGG TATATACTTT TTAAAGGTCT AATTGACATA TATAAATTGC AAGTATTTCA GATGTCAATT TGCTAACCTT GACACACATA GACACACATG AAAACATCAC CACATTAATA CAATGTATGT ATCCATCATT CCAAAAGCTT GCTACCTT GACACACATA GACACACATG AAAACATCAC CACATTAATA CAATGATGT ATCCACATT CCAAAAGCTT
CCCTGTGTAT CTTTGTAACT CTTTCTTCCT CCCTCCACTC CTTGTCCTCT CGTTCCCAAG AAAACATTGA TCTGCTTCCT
GTGAATATAA ATTAACTTAC ATTTTTTAGA GCTTTATATA AGTATGTTCT CTTTACTGTT TGTCTTCCTT CGCTGCACAG
TTATTTTGAG ATTCTTCAAG TTTTTTCTTT ATATCGATAC TTCATTCACA AGAATATATT TTAATTCTAG ACTATGTCAC
ATTGACTTTG TCGTCTGCTA AATCCTTAGT GCTCAGATGA CTTGTTCAGG ACTCTCCTTG AACCTGTACC TCTGTTANAT
TGAAACTTGT CTCTACTGC TTTTTATTTC AAACACAGGT TATTAGGTGT CTCTCAACCC ATCAAACNCA CAATCTGAGT CTITAGGAGA TTGCTTTGAA TTTGTGCTAT TGACTTATAT NTATATNAAA TNTGTAAATG TTTGGTAAAAA ATATCATCAT GTACNITITIC ATAATTACGC TATNINCACA TGATATATGT CAGACTCTGG AAATATGCAT GCCACAGACA CGTGTTTCIT GCCTAAAGGG GCTGATGGAA GACNCACATA CNAATAGACG ATTGCAGTAG AATGAGAGTG GTGGTCTAAN CAGTACATGT CCTGATGTTG CTCGGACAGT TACTACNCCA AGAGTACCCC CTGCATTGTC AGGGTTAGCA TCTCCTGGAA GCCTCATGTA AATGAAGAAT TTCATGCTCC ATCCAGGACC TAATGAATAA GAATCTGCAT TTTAGCAAGA CCCTCATATG ATTCATATAC ACTITITIT TITTITITA GATGGAGTCT CACTCTTGTC GCCCAGGCTG GAGTGCAATG GCATGATCTT GGCTCACTGC AACCTCTGCC TCCCGGGTTC AAGTGATTCT CCTGTCTCAG CCTCCCTAGT AGCTGGGACT ACAGGTGCAT GCCACAGTGG CTGGCTAATT TTTGTATTTT TAGTAGAGAC AGGGTTTCAC CATTTTGGTC AGGCTGGTCT TGAACTCATG ACCTCCGGTG ATTCCCCCGC CTCGGCTTCC CAAAGTGCTG GGATTACAGA CATGAGCCAC CACACCCGCC TTATTCGTAT ACNCATTTAA TTCTGAGAAG CACTCTATAG AAAATAAGAA TAAGAAAATA TTGGGCTCAC AGGTGACATT AATAAGTAAC TTTATCGAGT ACCCCAAATT TTACCTATGT TTGGAAGATG GGGTTAAAAG GACACATTGA AAACAAGAAC TCATTGTGGC TTTTTTTTCC TCCTTTTTGA ACAGTTTTCT ATTTCTGGAA TGTTGTCAAT TATATCTGAA AGGAGAAATG CAACATATCT GGTGAGTTGC CCGTTTCTGT CTTTGTCCAT CCTTGAAAAG ATAAGAAGAA CAGAGTTTTA AGAGTCTTAA GGGAAACACA TCTTTGTCTC AAGACCGTAC GTGTTCATGT GGTTCCTGAA GGCAGTCCAG TGAGAAAGTA ATATATGCTT CATTAAACAA TGCGGACATT TTCAGGGTTT CCCTTTTTAA CCAAAATTTG GAAGCAATGT GGAATTTACT GGATGCATCC AGCCCTGAAA TGAAGATAGG TTTATTGAAT GTGCCAGCAA GTGCAGGCCC AGGTCTGAGT GTTCTTCATT ATTATCAGGT GAGAGGAAGC CTGGGAGCAA ACACTGCCAG CAGCATAGCT GGGGGAACGG GAATTACCAT CACCTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAATT TTTTGAGACC AAGTGCTTTA TGGCTTCCTT TTCCACTGTA TGTATTTTT TTTGTGTGGG AAGACTAAGA TTCTGGGTCC TAATGTAAGT AAGAAGCCCT CTTCTCCTGT TCCATGAACA CCATCCTTTT CTGTAACTTC OTGTGTGTGT GTATGTGTCA CTTTAAAAGG ACTGGTCAGA TGGTAGGGAG ATGAAAACAG GAGATGCTAT AAGAAAATAA ACTITIGGG CGAATACCAA TGTGACTCTT TTTGTTTGTC ATTTGTTGCT GTTCAATAGG AAATTGTAGT GATGATGCTG TTTCTCACCA TTCTGGGACT TGGTAGTGCT GTGTCACTCA CAATCTGTGG AGCTGGGGAA GAACTCAAAG GAACAAGGT AGATAGAAGC CCGATATAAA ATCTTGAATG ACAGGTTAAC GAATTGGAGC TTTATTCCTT AAAATATGGC CTGGGTTTTC
TGAAACATTT CTTCCAGAAA ATAGTTTCTC CAAGTTTAT TACTTTGGTT TACAAATCTC ACATTTAAAT CACATTTTAT
ACCATAAGTA GCACACATTT CATAATATTC CTCTGAATGA GGGTTGGGAT AATAGGACTG ATATGTTAGA AATGCCTTAA GCGTGGTGGC AGGTACCTGA GGTTCCAGAT ACTTGGGAGG CTGAAGCAGG AGAATCGCTT GAGCCCAAGA GATGGAGGTT GCAGTGAGCC GAGATCATGC CACTGCACCA CAGCCAGGGT GACAGAGCCA TACTTCCCAG CACATTGGGA GGCCAAAGCT GAAGAATAAT TTGAGGTGAG GATTTGGAGA CCAGCCTGGC CAACATGGTG AAACTCCGTC TGTACTAAAA ATATAAAACT TAGTGGGGCA TGGGGGCACA CACCTGTAAT TTCAGCTACT TAGGAGGCTG AGGCAGGAGA ATTGCTTGAA CCCGGGAGGC GGAAGTTGCA GTGAGCCAAG ATCGTGGCCA CTGCACTCCA GCCTGGGTGA CATAGTGAGA TTCTGTCTCA AAAAAAATAA AAGAAATTTA AAAAATCACT CTCTTCCAAA GATAGATAAA TAAGACAGCA GATATACTAA GGAATAACCT CACCAACTTG
TCATTGACTG ACATGATTTC TTTTGGCCCA CTTGGCCAGC TAGTCTGGTT TGGTTTTCTG GAAATGAAAG AAATAATCAG
AGTTTAATGA CAGAGAGCGT GAGACCCAGA AAGACAAAAG TAGATGAGGT AAGTCTCTTG AGCGAGACTT CTAGGGATGG TITACCACCA GICAATAATA CATTITIGCC AAGACATGAA GITTIATAAA GATCTGTATA ATIGCCTGAA TCACCAGCAC ATICACTGAC ATGATATTAT TIGCAGATIG ACAAGTAGGA AGTGGGGAAC TITTATTAAG TTACTCGTTG TCTGGGGAGG TAAATAGGTT AAAAACAGGG AAATTATAAG TGCAGAGATT AACATTTCAC AAATGTTTAG TGAAACATTT GTGAAAAAAAG AAGACTAAAT TAAGACCTGA GCTGAAATAA AGTGACGTGG AAATGGAAAT AATGGTTATA TCTAAAACAT GTAGAAAAAG AGTAACTGGT AGATTITGTT AACAAATTAA AGAATAAAGT TAGACAAGCA ACTGGTTGAC TAATACATTA AGCGTTTGAG
TCTAAGATGA AAGGAGAACA CTGGTTATGT TGATAGAATG ATAAAAAGGG TCGGGCGCGG AGGCTCACGC CTGTAATCCC AGCCCTTTGG GAGGCCGAGG TGGGCAGATC ACGAAGTCAG TAGTTTGAGA CCAGCCTGGC CAACATAGTG AAACCCCGTC
TCTACTAAAA ATACAAAAAA AAAATTAGCT GGGTGTGGTG GCAGTCACCT GTAGTCCCAG CTACTTGGGA GGATGAGGCA

GGAGAATCGC TTGAACCTGG GAGGCGGAGG TTGCAGTGAG CCGAGATCGC ACCAGTGCAC TCCAGCCTTG GTGACAATGG GAGACTCCAT CTCAAAAAAA AAAAAAAAA AAAAAAGATA AAAAGTCAGA AATCTGAAAA GTGGAGGAAG AGTACAAATA GACCTAAATT AAGTCTCATT TITTGGCTIT GATTTTGGGG AGACAAAGGG AAATGCAGCC ATAGAGGGCC TGATGACATC CAATACATGA GTTCTGGTAA AGATAAAATT TGATACACGG TTTGGTGTCA TTATAAGAGA AATCATTATT AAATGAAGCA AAATAGAGAA AGATTAGATA AAGAGAAAAT AAGTATCCAT CAGAGACAGT ATCTCTAGGC TTGGGCAAGA GAAAAGTCCA CAGTGATAAG CAACTCCACC TAAGGCATGA ATATGCGGCA GAGAAAACAG CAATAGTGAA TGAATGCAAA AGGTGCTGAG CAAATTCCAC ACATGAGTAT TGTGCATGAG TAAATGAATA AAACATTTGC AAAGACCTTT AGAGAAAGAG AATGGGAGCA TATGTGCOAA ATAAGATAGT TGATTATGAA TAGAAGGTAG TGAAGAAAAG CAAGCTAAGA AAAAATTCTG TTTATAAAAG AAGGAAAAGA TAGTTTATGT TTTTAGCCTA AGTATAAGAG TCCTACAGAT GGACTGAAAA AAATCAGTCT GAGAGTATTA GTCACAATTA ATGAAATAAT TACATTTTAT GTATTGAGGA TGCCAAGATT AAAAGGTGAC AGGTAGATGT TAATTTCCCT GICACAATTA AIGAAATAAT TACATITIAT GIATIGAGGA IGCCAAGATT AAAAGGIGAC AGGIAGAIGI TAATITCCCTAGAATTGAAA AGGGACACAC ACAAATAAT TAAGTGACTT GGTATGCTTT ATTTAATTGT AGGGCCTGAG GTTTTCCATTG CTCATTTTTC TAAAATACAA TTTTGTTTCT CCAAATTTGA CAGCAGAATA AAAACCCTAC CCTTTCACTG TGTATCATGC TAAGCTGCAT CTCTACTCTT GATCATCTGT AGGTATTAAT CACATCACTT CCATGGCATG GATGTTCACA TACAGACTCT TAACCCTGGT TTACCAGGAC CTCTAGGAGT GGATCCAATC TATACCTTTA CAGTTGTATA GTATATTTTT CTCAAGACTCA TTCTGAGAGT TGCCCCACCC TACCTGCCTT TTATAGTACG CCCACCTCAG GCAGACACAG AGCACAATGC TGGGGTTCTC TTCAACACTAT CACTGCCCCA AATTGTCTTT CTAAAATTTCA ACCTCAATGT CATCACCTCAA TTCTCTGCTC CATCACTCAC CATCACTCCA CATCACTCAT GTATCATTAA CTGAATGAAC ACCTTTTCAT CCAGCCTTAA TTTCTTGCTC CATAACTACT CTATCCCACG ATGCAGTATT GTATCATTAA TTATTAGTGT GCTTGTGACC TCCTTATGTA TTCTCAATTA CCTGTATTTG TGCAATAAAT TGGAATAATG TAACTTGATT
TCTTATCTGT GTTTGTGTTG GCATGCAAGA TTTAGGTACT TATCAAGATA ATGGGGAATT AAGGCATCAA TAAAATGATG CCAAAGACCA AGAGCAGTTT CTGAAGTCCT CCTTTTCATC AGCTCTTTAT CAAACAGAAC ACTCTATAAA CAACCCATAG CCAGAAAACA GGATGTAGGA ACAATCACCA GCACACTCTA TAAACAACCC ATAGCCAGAA AACAGAATGT AAGGACAATC ACCAGCCATC TTTTGTCAAT AATTGATGGA ATAGAGTTGA AAGGAACTGG AGCATGAGTC ATATTTGACC AGTCAGTCCT CACICTTATT TACTIGCTAT GTAAACTIGA GAAAGCTITT TICTCTTTGT GAACCTCAGG TTITACATCT GAAAATGAGA
AATTTGGAAC AAAAGATTCC TAACTGGTCT TTCTGTTCCC ATATTCTGTG ATTTTTCAAT ATTTAGGATT TTTGGTAATC
ACAATTACTT AGTTTGTGGT TGAGATAGCA ACACGAATCA GAACTATTTG GTGGACATAT TTTCAAAGGA GTAGCTCTCC ACTITGGGTA AAGAAGTGAT GCNGGTCGTG GTGGCTCACG CCTGTAATCC CAGCACTTTA GGGAGGCCAA GGCGGGTGGA TCACGAGGTC AGGAGATCGA GACCATCCTG GCTAACACGG TGAAAACCCCG TCTCTACTAA AAAATACAAA AAATTAGCCA GGCGTGGTGG CGGGCGCCTG TAGTCCCACG TACTCGGGAG GCTGAGGCAG GAGAATGGCA TGAACCAGGG AGGCGGAGCT TGCCGTGAGC CGAGATAGCG CCACTGCAGT CCCTCCTGGG CAAAAGAGCA AGACTGCGTC TCAAAAAAAA AAAAAAAAA AAAAAAAGAA GTGTGTGGAG TAGCAGGACA CCTGCAACAA TAATATTTTT CTAAATCCCT CTGAAAAATG CTAATCAAAG GGTTTTTTC CTAAAAATTG TCTTAGAAAT AAAATTTCCC CTTTGGGAGA CCGAGGCTGG CAGATCACGA GGTCAGGAGA TAGAGACCAC GGTGAAACCC CGTCTCTACT AAAAATACTA AAAATTAGCC GGGGNGTGGT GGTGGGTACA CCTGTAGTCC CAGCTACTTG GAGGCTGAGG CTGGAGAATC ACGTGAAC
CTCTGGAAGT TGTCAGGAGC AATGTTGCGC TTGTACGTGT TGGTAATGGG AGTTTCTGCC TTCACCCTTC AGCCTGCGGC
ACACACAGGG GCTGCCAGAA GCTGCCGGTT TCGTGGGAGG CATTACAAGC GGGAGTTCAG GCTGGAAGGG GAGCCTGTAG
CCCTGAGGTG CCCCCAGGTG CCCTACTGGT TGTGGGCCTC TGTCAGCCCC CGCATCAACC TGACATGGCA TAAAAATGAC TCTGCTAGGA CGGTCCCAGG AGAAGAAGAG ACACGGATGT GGGCCCAGGA CGGTGCTCTG TGGCTTCTGC CAGCCTTGCA GGAGGACTCT GGCACCTACG TCTGCACTAC TAGAAATGCT TCTTACTGTG ACAAAATGTC CATTGAGCTC AGAGTTTTTG AGAATACAGA TGCTTTCCTG CCGTTCATCT CATACCCGCA AATTITAACC TTGTCAACCT CTGGGGTATT AGTATGCCCT GACCTGAGTG AATTCACCCG TGACAAAACT GACGTGAAGA TTCAATGGTA CAAGGATTCT CTTCTTTTGG ATAAAGACAA TGAGAAATTT CTAAGTGTGA GGGGGACCAC TCACTTACTC GTACACGATG TGGCCCTGGA AGATGCTGGC TATTACCGCT GTGTCCTGAC ATTTGCCCAT GAAGGCCAGC AATACAACAT CACTAGGAGT ATTGAGCTAC GCATCAAGAA AAAAAAAGAA GAGACCATTC CTGTGATCAT TTCCCCCCTC AAGACCATAT CAGCTTCTCT GGGGTCAAGA CTGACAATCC CGTGTAAGGT GTTTCTGGGA ACCGGCACAC CCTTAACCAC CATGCTGTGG TGGACGGCCA ATGACACCCA CATAGAGAGC GCCTACCCGG GAGGCCGCGT GACCGAGGGG CCACGCCAGG AATATTCAGA AAATAATGAG AACTACATTG AAGTGCCATT GATTTTTGAT CCTGTCACAA GAGAGGATTT GCACATGGAT TTTAAATGTG TTGTCCATAA TACCCTGAGT TTTCAGACAC TACGCACCAC AGTCAAGGAA GCCTCCTCCA CGTTCTCCTG GGGCATTGTG CTGGCCCCAC TTTCACTGGC CTTCTTGGTT TTGGGGGGGAA TATGGATGCA CAGACGGTGC AAACACAGAA CTGGAAAAGC AGATGGTCTG ACTGTGCTAT GGCCTCATCA TCAAGACTTT CAATCCTATC CCAAGTGAAA TAAATGGAAT GAAATATTC AAACACAAAA AAAAAAAA AAAAAAAA GCCGGAGCCG
ACTCGGAGCG CGCGGCGCGG CCGGGAGGAG CCGAGCGGCGCCGC GTGGGGGCGC CGGCTGCCC GCGCCCCAG
GGAGCGGCAG GAATGTGACA ATCGCGCCC CGCACCGTAG CACTCCTCGC TCGGCTCCTA GGGCTCCCC CCTCTGAGCT
GAGCCGGGTT CCGCCCGGGC TGGGATCCCA TCACCCTCCA CGGCCGTCCG TCCAGGTAGA CGCACCCTCT GAAGATGGTG
ACTCCCTCCT GAGAAGCTGG ACCCCTTGGT AAAAGACAAA GCCTTCTCCA AGAAGAATAT GAAAGTGTTA CTCAGACTTA TTTGTTTCAT AGCTCTACTG ATTTCTTCTC TGGAGGCTGA TAAATGCAAG GAACGTGAAG AAAAAATAAT TTTAGTGTCA
TCTGCAAATG AAATTGATGT TCGTCCCTGT CCTCTTAACC CAAATGAACA CAAAGGCACT ATAACTTGGT ATAAAGATGA
CAGCAAGACA CCTGTATCTA CAGAACAAGC CTCCAGGATT CATCAACACA AAGAGAAACT TTGGTTTGTT CCTGCTAAGG TGGAGGATTC AGGACATTAC TATTGCGTGG TAAGAAATTC ATCTTACTGC CTCAGAATTA AAATAAGTGC AAAATTTGTG GAGAATGAGC CTAACTTATG TTATAATGCA CAAGCCATAT TTAAGCAGAA ACTACCCGTT GCAGGAGACG GAGGACTTGT GTGCCCTTAT ATGGAGTTTT TTAAAAATGA AAATAATGAG TTACCTAAAT TACAGTGGTA TAAGGATTGC AAACCTCTAC TTCTTGACAA TATACACTTT AGTGGAGTCA AAGATAGGCT CATCGTGATG AATGTGGCTG AAAAGCATAG AGGGAACTAT ACTTGTCATG CATCCTACAC ATACTTGGGC AAGCAATATC CTATTACCCG GGTAATAGAA TTTATTACTC TAGAGGAAAA CAAACCCACA AGGCCTGTGA TTGTGAGCCC AGCTAATGAG ACAATGGAAG TAGACTTGGG ATCCCAGATA CAATTGATCT GTAATGTCAC CGGCCAGTTG AGTGACATTG CTTACTGGAA GTGGAATGGG TCAGTAATTG ATGAAGATGA CCCAGTGCTA GGGGAAGACT ATTACAGTGT GGAAAATCCT GCAAACAAAA GAAGGAGTAC CCTCATCACA GTGCTTAATA TATCGGAAAT TGAAAGTAGA TITTATAAAC ATCCATTAC CTGTTTTGCC AAGAATACAC ATGGTATAGA TGCAGCATAT ATCCAGTTAA
TATATCCAGT CACTAATTTC CAGAAGCACA TGATTGGTAT ATGTGTCACG TTGACAGTCA TAATTGTGTG TTCTGTTTTC
ATCTATAAAA TCTTCAAGAT TGACATTGTG CTTTGGTACA GGGATTCCTG CTATGATTTT CTCCCAATAA AAGCTTCAGA TGGAAAGACC TATGACGCAT ATATACTGTA TCCAAAGACT GTTGGGGAAG GGTCTACCTC TGACTGTGAT ATTTTTGTGT TTAAAGTCTT GCCTGAGGTC TTGGAAAAAC AGTGTGGATA TAAGCTGTTC ATTTATGGAA GGGATGACTA CGTTGGGGAA GACATTGTTG AGGTCATTAA TGAAAACGTA AAGAAAAGCA GAAGACTGAT TATCATTTTA GTCAGAGAAA CATCAGGCTT CAGCTGGCTG GGTGGTTCAT CTGAAGAGCA AATAGCCATG TATAATGCTC TTGTTCAGGA TGGAATTAAA GTTGTCCTGC TTGAGCTGGA GAAAATCCAA GACTATGAGA AAATGCCAGA ATCGATTAAA TTCATTAAGC AGAAACATGG GGCTATCCGC

TGGTCAGGGG ACTITACACA GGGACCACAG TCTGCAAAGA CAAGGTTCTG GAAGAATGTC AGGTACCACA TGCCAGTCCA GCGACGGTCA CCTTCATCTA AACACCAGTT ACTGTCACCA GCCACTAAGG AGAAACTGCA AAGAGAGGCT CACGTGCCTC TCGGGTAGCA TGGAGAAGTT GCCAAGAGTT CTTTAGGTGC CTCCTGTCTT ATGGCGTTGC AGGCCAGGTT ATGCCTCATG CTGACTTGCA GAGTTCATGG AATGTAACTA TATCATCCTT TATCCCTGAG GTCACCAGGA ATCAGG-3(SEQ ID NO:12371)

Human Enzyme-related Antisense Polynucleotide S'-CTT GCT CCT GGG GGC CTC CTG GTC CCT CTG GCT G TT CCC GGC CCT GGB CTG GGG CBG GGG CCG CGT BGG CGC GGC TCG CCB GGB CGG GCB GCB GCB GCB GCB GGC TCB GCC TCC TGG CCB CGG BBT TCC GGT GTG CGG GGC CTG GTG CC CTG GGG GTC TGG GTT CGG CTG T CCC CBG CBG GBC CBG TCC CBT CCB CBG CGT GTG BTG BGT BGC CBT TCT CCT GCB GCC GBG GGG CGC GGG CGB GCB TCG C TTT GGG CTT TTC TCC TTT GGT T TGB GCG CCB GGB CCG CGC BCB GCB GCB GGG CGC GGG CGB GCB TCG CBG CGG CGG GCB GGG GGGCTCCCGC CGCGBGBGGT TBTGGGCTCC CBGGBCCBCC CGCBCCGCGC GGBCGTTBC BTTCGCCBCG CBGTGCGCGG CCGBCBTGBC GBBGTTGGGC GCBBTCBGGG TGGCGCCGCB GBBGTGGCCT CCGCGCBGCT GCBGGGBCBC CBTGBBGGGC CBCGCGTGGG GCCGCGCTCG CCGGCCCCCC BCBBTCTCCG BGGCCBGCGC GGTGCCCCCC BGCBGCBBGG CCGGCBGGBC BCBGGCGBGG BGBCBCGCGB GTCGGCGGCC GBGGGTCBTG
GTGGGGCTGG GGCTCCGGGG TCTCTGCCCC TCCGTGCTGG TGGGGCTGGG GCTCCGGGG TCTCTGCCCC TCCGTGCCGC CTCBGCCTGG GCCTGCBGGG CCBCCBGGBG BBTGGCBGCB BGGBTGGCGB GGGTCCTCBT GGCTGGGGTC BCBGBTCCTC TBGCTBGGCB GGGTGBCCBG BGBGGGC GGG TCC TCB TGG CTG GGG GCC TGG GCC TGC BGG GCC GCT CTT GCC TGG BGT GGC TC GCC CBG BGT CTT CCC TGG T CGCTGCBBTC TGCTCCGGGG CTGCBGCBBC CTCBTCBGCTC TTGCCTGGBGTG GCTCBGCCTGG GCCTGCBGGG CCBCCBGGBGB BTGGCBGCBBG GBTGGCGBGGG TCCTCBTGGC TGGGGTCBCCT GGBGGBGGG GBGCBGGGG TCCTCBTGGC TGGGGTCCCT CTCTCCCGTC CT CGG TTT CCT TTG CGG TC TTG GCC CGG GCT C GCC CTT CTT GGT GGG CTGGCT CGT CTG TCT TTT TCC TTC C TGG GGG TGG CCG TTG TGG GCG GTG TGG TCC GCC T TGC CTC TGC TGG TCT TTC CTCGGTBGBC GCGCTCGBBC TCGGGTGGGC CGGTGGTGBG CGGCGGCGBCB CGCGGBBGGC CCTGCGCGCC GBGBTCBCCTG CBGGGBGBBG TBGGCTTGCB GCBGGBCTCC CBGGBGGGTG BCBGCBGCCB GTBGBGCTBC CTCGTCCTTC BTGGTBCCGT CGGTGTGGTG GCBCGGGCTG TGTGTGBBGG CGBGCTGGGC CCCGTCTGCT GCTCCTCGTG CCGCCTCGTC CITCA TGG TA CCGTCGGTGT GGTGGCCTCG GGTGGGCCGG TGGTGGGGCG CGCGCGCTCG CGTGGCTCCG GCTCTTCTTT CCCGGCTCCGT CGGCCCGGGG GCCTTGGTCT CCCTCGTCCT TCBTGGTBCC G BCCGGCGGBG CCGCCBGGGT GGBCTGGGBG TGGGTTTCTC CCCGCCGTTC TCBCCCBCG CGCTGBGCTC BGCGCCTBBG BCTGCTGTTT CTGGBGCTCC
TTGGCBBGCC BCBBCBGCB GBGBGBBBT CBTGBGCBBB TBBTCCBTTC TGBBBBBBBB GGBTCBBBBB CCTCCCGTTC
CCCGTTCGCC TGGCGCGCC TGCGGGTTCC TCGTGGGTTT CTCCCCGCCG TTCTCCGGTC TGTTGCCTTT GTGGGCTTCT TGTCTTTTTG GCTGTTCTT TCCTGCTTGG CGTCTTTTCC TTTCTTTGTG CTCGGTTGTG GGTCCGCTGG TCCTTTGCCC TGTGTGTTTC TGCTGCCGT TCGCCTGGCG CGCGCTGCGG GTTCCTCGTG GGTTTCTCC CGCCGTTCTC CGGTCTGTTG CCTTTGTGGG CTTCTTGTCT TTTTGGCTGT TCTTTTCCTG CTTGGCGTCT TTTCCTTTCT TTGTGCTCG TTGTGGGTCC GCTGGTCCTT TGCCCTGTGT GTTTCTGCTG GGBGCTGBTB CTGCBGATTT CBGBGGGBBG BBCCCTGBTB CTCBCCBGCT TCBGCTCTGG BGCBCBGGG BBBGBGCBGC BGGGGGBGBG GBBGBBGCBG CBTCTTCCCB GBGBGGCTGC CTGBGCBBBT GCTGGTTTTC CTTTCCBGTC TTGGGTTTTB TBBCTCCCBG BBGGCBBGBG BGGGGCBBGG CGTTTTCTTC TCTCGCTGGT 50 CTTCTTCCTT TCTTGGGTCC TTGGTGCTTG GGCTGGG GCGTCTTGGG GTGCBGGGCC CBTCCTGCTG CGCCTGGGCG CTGCTGTGCG TCCGTCTGCT GGGGGGCCGG GGTGGCTGGG CCCTGCTTGC CGCACGACCC CGGGCCGACC CGAGGCTCGG GGGCTGTGT TCTGGCGCTG GTGGGCTTGG GCCCCTCTGG GGGCTGGGTT TCCTGCTGCG CCTGGGCGCT GGCGTCTTGG GGTGCGGGGC CGGGGGCCC GGGGGCCCCT GTTCGTGGCC CTGGGGGTGC CTGTGGCTGC CGGTTGCCCC GGTTGGTGGC TCCGGCCGCT CCTTCCTCTT CCGCCGCCGC CGCTCCCCGC CCGCTCGTCG CCCTGGCCCG GCCTCCTCCT GGCCGCTGTCC TCCGGCCGCG GCCTCTCCT GCCCCTCTTCGGCCC TCCGTTTGGG GCTCCCTCT GCGCTTCCGG CCCTCGGCCT GGGCGCTCTC TTCCGCCTGT CCGGGGTGGC TGGGCCCTGC TTGCCGCACG ACCCCGGGCC GACCCGAGGC TCGGGGGGCT GTGTTCTGGC GCTGGTGGGC TTGGGCCCCT CTGGGGGCTG GGTTTCCTGC TGCGCCTGGG CGCTGGCGTC TTGGGGTGCG GGGCCGGGGG GCCGGGGGGC CGCTGTTCGT GGGCCCGGC GGTCCCGGGC GTCTCGTGTT CGCTCTGTG TGGCGCGTGC CTGCTGCCG TCGTGCCGCG TCGTGCCGCTG GGCCCGTGCT GGGCCGTGCT GGCGCGGCC CCCTGGCCG TCGTCCGCG TCGTGCCGC TGGGCCGTG TGGCGCGTGC TGCCGCGCG TCCTTCTTCC TGGTGGCTG TGGCGGTGCC CCCTGGCCG TCTTCTTCC TGGTGGCTG TGCCGGTGCC CGCTCCTTC TCTTCCGCCG TCGTTCTTC TGGTGGCTG TGCCGGTGC CGCTCCTTC TCTTCCGCCG 70 CCGCCGCTCC CCGCCCGCTC GTCGCCCTGG CCCGGCCTCC TCCTGGCCGC TGTCTCGGGC GGCGGCCTTC GCGCCCTCCT TGGGGCTGC TCTGGCGCTT CCGGCCCTCG GCCTGGGCGC TCTCTTCCGC CTGTGCTGGT GGCCCTCCTT GGCCCTCCT GGCCCTCCT GTGCCGGCT GTCGCCGGC CCGGCGGGTC CTCCGGGCTG

	GGTCTCCGGG	CTTGCCCCGC	GCTGCTGGGC	GTTCTGCGGT	CTTGGGGTTG	TCTGTGGCCC	CGCTCGTGTC	GCCCTCCGTC
	GCCCGTCGCC	GGCCTCGTCC	CCTCCTGGGT	GCGCGGCGGC	CTGGTCCTGC	G CGTTTTGCTC	CTTCCTGG	CTGCCCCBGT
	TTTTGBTCCT	CBCBTGCCGT	GGGGBGGBCB	BTGGCTGCCT	CCCCGGGGTT	TCTGCTGCTT	GCTGCTTCTT	TCCCGTCTCC
	CTTCTTTCCC	GTCTCCTTTT	TGCCTCTTTG	GGTTCCTGTT	GTTTCTGGCC	TGCTTGGTGG	CGGCTTGTGC	GTTTCCTCTC
5	TOTTOTOTIC	GGTCTCCGCT	TCTCGTCCTG	CCTTTTCCTG	TCTCTGTCGC	GCCGTTCCTC	CTCCGGCGTC	CTCCTGCCCT
,	OTOOTOTTTO	CCTCGGGTGG	TOTOGOTOCIO	COTTOCTOCCO	CCCCCCCCCCC	CCTCCTTCCC	TOCOCCUTGTC	TOGTOGGGTG
	TOOCGOOG	CCICGGGIGG	TOCOGGICCC	TOTTOTOTO	COCCOCCC	TOTTOCTO	TOTOTOGGCG	TOTOCTOCOT
	TGGGGCCGCT	GGGTTGGGGG	TGTGGTGGGC	TCTTCTGTGG	CCTGTGGGGC	IGIIGGIGIC	ICIGIGGGCG	1010C10GG1
	CTTGGGGCTT	CCTCCCTTGT	GCTGGGTGCG	GCCTCCCCGC	CCCCCTTCTG			
	CTGGCTCTTG	CCCTGTCCTT	CTTCGCCTCG	TGGCTGCTGG	GCTGC G	CCGCCGCCG (
10	GCGGTGCTGG	CCGACGTGAG	CTACCTGATG	GCCATGGAGA	AGAGCAAGGC	CACGCCGGCC	GCGCGCGCCA	GCAAGAAGAT
		GAGCCCAGCA						
	TTTCCCAGAA	GCTGGGGTAC	CTGCTCTTCC	GAGACTTCTG	CCTGAACCAC	CTGGAGGAGG	CCAGGCCCTT	GGTGGAATTC
		TCAAGAAGTA						
		GAGCTGCTGG						
15								
15		TCCGGATCTC						
	ATTGAGAGCG	ATAAGTTCAC	ACGGTTTTGC	CAGTGGAAGA	ATGTGGAGCT	CAACATCCAC	CIGACCAIGA	ATGACTICAG
		ATCATTGGGC						
	TGAAGTGCCT	GGACAAAAAG	CGCATCAAGA	TGAAGCAGGG	GGAGACCCTG	GCCCTGAACG	AGCGCATCAT	GCTCTCGCTC
	GTCAGCACTG	GGGACTGCCC	ATTCATTGTC	TGCATGTCAT	ACGCGTTCCA	CACGCCAGAC	AAGCTCAGCT	TCATCCTGGA
20		GGTGGGGACC						
~~		CCTGGGCCTG						
		GCCACGTGCG						
		TACATGGCTC						
		CAAGTTGCTG						
25	ACGCTGACGA	TGGCCGTGGA	GCTGCCCGAC	TCCTTCTCCC	CTGAACTACG	CTCCCTGCTG	GAGGGGTTGC	TGCAGAGGGA
	TGTCAACCGG	AGATTGGGCT	GCCTGGGCCG	AGGGGCTCAG	GAGGTGAAAG	AGAGCCCCTT	TTTCCGCTCC	CTGGACTGGC
	AGATGGTCTT	CTTGCAGAAG	TACCCTCCCC	CGCTGATCCC	CCCACGAGGG	GAGGTGAACG	CGGCCGACGC	CTTCGACATT
		ATGAGGAGGA						
	CATCTCGGAG	CGGTGGCAGC	ACCACCTOCC	AGAGACTGTC	TTCGACACCA	TCAACCCTGA	GACAGACCGG	CTGGAGGCTC
20								
30	GCAAGAAAGC	CAAGAACAAG	CAUCIGOOCC	TORUGARDA	CIACOCCCIO	COTOTOGO	UCATCATUCA + + CCCCCCTCC	ACTCCCCCCC
		GCAACCCCTT						
		GCCCCGCAGA						
		CAAGATCCGC						
	GAGCTGCGCG	ACGCCTACCG	CGAGGCCCAG	CAGCTGGTGC	AGCGGGTGCC	CAAGATGAAG	AACAAGCCGC	GCTCGCCCGT
35	GGTGGAGCTG	AGCAAGGTGC	CGCTGGTCCA	GCGCGGCAGT	GCCAACGGCC '	TCTGACCCGC C	CACCCGCCT	CCAGGAAGCT
	ACCTGGAGGA	GGTGAGTCTT	AGCGGATGAG	TAGGAGTTGT	CCACGGAGGA	AGGTACACAG	AAGGGCITCC	AGGCCCAGGA
	AACAGCAGAG	GCACAGAAGT	GAGAATGGGT	GGGTGAGTTG	GTGGGGAAAC	TCCAGGTGCA	GAGGATGGTA	GCGAAACAAA
		AAGGTCCAAG						
		TCCTAGAGAC						
40								
40		GACTCCATCA						
		AGAAGTAGAC						
		AATGAAGGAG						
	CCCACTGAGA	GGAGAACCTC	ACAAGCTCTG	ACATGCTCTG	GTTCCAGGTT	CTGTTGGGGC	TGATCCAAGA	TGGTAGCCTA
	GAGGTGCACA	GAGATGGGGG	CCTTGCTTTG	CAAAAGGATG	CTGGCTGCTG	GCCCACAGCA	TGGTAATGAG	ATTTGAGCTT
45	TATGTGCCCA	GGGCTGGGAG	GAGGGTCCTG	TCACTTTGAA	AGCAAAGAGA	GGCTCTAGAG	AGGGGCATGT	TGAGATAGGA
	ATGCTGCCTT	GAGACACCTG	GCTTTCCCCA	CTCTGGGTGG	CTCTCAGCAG	GGTGGGTTTC	CCCTGCCAGG	CAGCACTGAA
	CCTCTGTGCG	CTTCCGGCTG	GGAGAGTTTT	TACCGTAACT	ACATGTGGAA	CCATCCTGAA	GGAACATCTG	GATGGGATGG
		AGGGAGCTGC						
		CCTGAGTGGG						
50		CTGCAGTTGT						
50								
	GACGICCIAG	TCCTGAGTCC	GIGICCACAG	TICIOUGIGI	IGAGICIAGG	ACAGIGAICI	GGAGITUACA	GICCAAICIA
		CTGACCCCAA						
		TCGAGGTCAT						
	ATGGCGTTGG	AGACCCAGGG	CTGTGATCTG	AGGTCATGGT	TAGAGTCTCA	GGTGGTGGGC	CAAGGTTTGA	GTCTGGGGTC
55	CTGTTTGGAG	TCTGGTGTCA	GGTCGTGGAC	TGCGTCCAAG	GTCAGGGAGT	CCGGGGTTAT	AGCCAGGGTC	TGAGATGAAA
	GTCCCAGATG	GTGTTCAGAG	GTCTGAATCT	GTGTCTTGGT	GAGCGTCCAG	GTTCCCTGTG	ATCACGTTTG	GTGTCAGGGC
	TGCGGCCCGA	CTGGGGAGCC	TGGGATCCAG	AGATGTGACC	CGAGGTTGTG	GTCAGAGAAT	GGGTCTCGGG	TCGTCTTCGT
	GCCGGGTCCC	TOTCGTGTTC	CAGGCCCGGG	TCTCCGTCCA	GCATCGAGGG	CCGAGGTCAC	GGCCAGGGTC	TGAGCCCGCG
		TGGTTCGGGG						
60								
OU		GTGCGCGGCA						
		AGTCCCGGCG						
	GTGAGCGGCG	GCGAGCGGAG	CCGCGGGCGC	CGAGCAGGGC	CAGGCGGGAG	CGTCGGCGCC	CGAGGCCGAG	CGAGCCGCGG
		CCGAGCGCCG						
	TGGCGGACCT	GGAGGCGGTG	CTGGCCGACG	TGAGCTACCT	GATGGCCATG	GAGAAGAGCA	AGGCCACGCC	GGCCGCGCGC
65	GCCAGCAAGA	AGATACTGC	T GCCCGAGCC	C AGGTGAGG	AG AAGCT '	CCCAGTTAA	TACATAATCA	ATATGCAATT
		TCTCTCCATG						
		CATTTTCTTT						
		CTGCCCTTGC						
		CTGTAGCCAT						
70	TOUCICIACC	TCAGCCTTAC	CANANCAIGC	COTCOATACC	ACCIDICATION ACCIDENT	TOVOTOTOMO	CYCYCLYCC	A ATCTCACACI
70								
		TGACTAGACC						
	IAAGGAGCTA	TCAAGCCATT	GCAGGACCAT	CIAGAATACA	ACTAGAGTAT	AGTICUTTIC	AATCCAGGAA	CIATACICIA
		TCACAGGAAC						
		ATTAAACAAG						
75	CCACACAGAA	AAGATAAAAT	CATCATGGCT	ACAGTGTTAC	AGAAGATGAT	GACCCAAGGA	GTAGGCCTGC	CTGAGTGAAT
					7			

```
GCTGAGAGTG ATAATGGGAG CAGTAGCATC TCAGAGACTA CAGCAGAAAC CATCCACATA AAGAGCTTTG CCCAAACTTA
TGATAAAGGG CACCCTCAGA GACTCTCCCT ACTITAATAT TAGCCCATTG CAGAAATGGT GAGTGGAAAG AGAAATCTTA
GGAAGAACCC CTTAAAAAAG CAAAATGCTT TTTAGGTTTG TGCTGAAGAG CCTGGAAAAG AAATAAGGAC ACACACGCTG
AGAAATCTTC CTCCTGCCCC AACACTGGGA TAATCTCCAA GGATCTCTCC ATATCTCATT CTCCTGGATA CACTGTCCAC TCAGAAATAT TGTGCAGAGT GCAGTAATTC AAAAGTGAGC TATTGTGTTA GGAGTGAAGG CAAGAGTATC GTAAAATAAA
TCAAATTTGA AATGAATTCT CTTAAATTGC TTTATAGATG TTTAATGTAA GCCAGCAGCT ATTAAACGAT AAACCTTAAA
TTCGAGAAAA ACTTGGTCAT TCAGAAACTA TAGAAACAGG CAGGACTTAT TGCGAGGGCA AACACAGAGT GAGCTCCAGC CTGCTTCAGG AAAATCTGCC AGTGCCATGA AGGATGTACT CTGTCTGCTC CACTGCACTA CTGCTCAGTA TGAGCCCATG
CCATCAGCTG TCCCTGACCC ACAGGAGTTC TTTAGAAGAG ACTGGTCAAC AAAAGTTTCT AGGGTGTTTT ATACCTGCCA
ACTCGAGGGT TAAAACAAGT TGCATAGAAA TGCTCAATCA AGAAAGACAC AGTCATTACT CAGAGAATAA TAAACAGCCT
GGCAGCACAT GAATGAATAG AAAAAAGATG TTACATGCAA AGCATGAAAT AACCAAATTC CATAACAGAT GTTAATCTGT
AATGTGTTTA GGAGAATTTA GAGGAAGTAT AAGATTTATT CTTTCATCAA AAAAATTATA GCCAATGAGG ATATATCTAT
CAATTATCCA TCAAGTGGTG ATATGGCAGC ACAAGGTAAA ACACAAAGGA ATAAAACCAA CGTTTATTAA GAACCAATCA
TGTGGCATTT CACATTGAGC ATCATATTA ATTCTGAAAA AAATCCTTGT ACTGTATCAT TCTTCATATT TTATGGATGC
AGTAACTAAG GCTGAGAACT TTAAAATTTT TCCTAAGTTC AGACACATAG CTAAGTGGCA GAACCAAGAT TCAAACTCAC CCCATCTAAC TGCAGAGCAA ACTGCATGCC TTAAATGTCA AAGTGAATAC TAGCACAGTT AATACAATGT TTGGAAACTC
AGAGAAGGAA TGATCCCTCT GCATTATAGT TACTAAGGAA TCATTGCCAT TATTTAAATG CCAGTGCTTC TACATCAGGC
CCAAATTITC TGTCCTACTA ACTGTGAATC AAGACTTGAT TCAACCTCTA CTTGAGTATC TGCCGCAATG AGAAATCACT TACCTCCACT AACCACACAT TTATTTTATA ACAACAGATT GTTAGTAAGT CCTTTCTTAT ACATACTCAA CAGCTGCTTC CCAAGATGCT GTAGGATTAT GTCTAGAGTC AAACTAGCCA GAAGCAATGT CCAAAATACA CCATAACACT GTGCAGCAAA
GGTCCTACTA CCACTTGTTT GGCCCAAACA TTCTAGGCAG CACTGGATAT CTGAATCATC AATTATTTCC ACAAACACTG
ACCCCTCTAC CAGTCACCCT CACTAGAAGA ATTAATTCCA CATGATAATA GCTCCCTCAT GTTACTCCCT TCTAAGTCAA
ATTGTACACC CCTTTATCTG ATTAACAGAG TCTAAGTCAC ATGACCTAAA TGCAAGAGAA CTGGGAATGG ACGTTTGTGG ATTCTACCTT AGTAAGGCAA AGTTATCATT GGGAATTCCT CTAATACAGG AAGGGTGTTC CAGAGACATT AAGGAGCCAT
ATAAATGGAA AATGTCCACT ACAATCCATC ACTTGGTTGC CCCACATCAA CATTCATTCT TTTGCCACAC TTAAAGTTTC
CAAGAACAAA AATTATCCCA CTGAACATAA TCTTTACTAT CTTTTATATA AAGGAAAATT AGACTTGACT CAGCAGAACT GAAATAACCC AGCTCTAACA GTTACTGCTT TTAACTTCAA GTACTGTGTC TCTAGGTGAT ACCTGCTCCA ACAATAGTTT
GGTCACATTT TCAATTTGAT ATTCTCTAGT CTCCCAACTT GATAACTGTA CCCTAAACCA TAAAGTTCAC TACCAACATG
CTATATATAA AATAACCAAA GGGGGAAGAA GAAAGAGAAA AAGGAAATCT CTTAAAATAC ACAGGTATAC ATATGACAAA
GCAAAGAAGG AAATGTGAGC AGATAGTGCA GTCCTCGTTT CTGAAATTGG TCCCCTGACT GGGGCTATAC CTATTCCATT
TCCTCACCCT CAGCCAGGCA GGTGGAGCAA AAACTTAAGT CTTGGTGGAT CTGAATCTTG ATGCTGTGGA GCTGTCTTAC
TAGCCCCAGA CTACCTGCCT CTCAATTTCT AATTATATCA GTGAAAGCAA ACAGCTTTGA TTTGTTTAAG CCTCTGATTT
TTTGGTCTAA CTGATGTAAG ACCACAAGGA CAAGAGTTCT CCAGCTCCGG ATTCTCTTCT GTTCTGTTAA TGGTGAAATG
CCCGAGAGAA GAGTTGCCAA CTTTGGCAAA TAAAAAATAC AGGATTCCAG TTAAATTCAA ATTTAGATAA ACAACAATTT
TITAGTATTA GTGTGTCCCA TTCAATATTT GGACATACTT AACTAAAAAA TGATTTGTTG TTCATCTGAA ATACAAATTT AACTGGGCAT TCTGAATATT CTCTGGCAAC CCCCGAGAGA GTGAAGAAAG TGGTACAAGG ACACTTAAGA AGACCAGATT TGAAAAAGACA TTACGGATGT GTTTAAATGT CTTATTCTAG AGAGAGTTAG AGCTGTAGGT AGAACTTGGG AAATTAAGTT
AAAAGCAGAC ACAGAGACCT GGCCAATATA TACTAAGGAG TGGATCACTC TGGTCACAAG CCCAACCTGA GACCAAGGGC
ATAGTGAGAT GATTTGGGAA AGGCACTTAT ACACTACTCA TCCCCGTCTT TGAACTAAAT GCCTTATAAA TCTCCAAGAG AAATGACAGT CCACCATGTG GACTGCTTTC TGTAAGTCCA GGGAAAATAA AAGCTATGTG CTTGAAACCC ACTTCTGATA
TTATAAGGTG TGTGATCTTT GTCATGTTAA TGGGTCTGAG TATCAATTCT ACAATTGTAA AGTGACAGTA ATGGTGTGTC CCCAGGTTGT TGTGGAAAGC TTGATTCTTA ATGCAACAGT AGGAAACCC AGCCTCTCTG GAGCAAACAC CCTTCTACAT
CTTTACTTCC CCTGCACATT GGCAGGACTC TATTCCTCTA TTTCTCTCTA GTGCTAGAGC AGAAAGGGAC CTTGATTTGA
TCTCAGAAAA TGCTAATTCC AATCCCAATT GCTCTTTGCA TAAAGTTCTG TCCTAGGGTC TGTTCTTTTC CCACATCTAC
AACAGGAAGA CACTGCACAT GGTTAAGATA AAGATTGTTT CCTGAAACCT TTAATTTGTG CTTACATACT CACACATACA TATGTGCATG CACTGGGACT CTGCAATATG CATTTCTGAC TATGGAACAT AGCCATAAAA GTCTTTGCAC TGAACGTTCA GTGGGCCTTT CACAAGCTGC CCTAATTGGG AAAGAAAAC ATGGTCCCTC CATTTCCTGC CCCCAACTCC AGAAAAGTCA
CCATAGTTGA GGGTACATCT GAGAAGCCAG CACTTGGGAG TTCAGGGCTC AAGTTCCTTT CTAGAAAAAC ACTGGGTGAT TCTAGGGGAA CTTCCGATCA GAAACAGCCA ATTCAGAGTG AGAGAAGAAA ACGTGACCAT GCAGTTCCTG TGGTTACCAG
CCTTGCCCCT CTCTTGCCTT CTGGGAGTTA TAAAACCCAA GACTGGAAAG GAAAACCAGC ATTTGCTCAG GCAGCCTCTC TGGGAAGATG CTGCTTCTC CTCTCCCCCT GCTGCTCTTT CTCTTGTGCT CCAGAGCTGA AGCTGGTGAG TATCAGGGTT CTTCCCTCTG AAATCTGCAG TATCAGCTCC TGAAACAAAG ATGTTTAGTC TGAAATAGCT GACTCCTAAA CAGGGTTCCA
GGGGTATCCC CAGGAAAACA GACATGTCCT CTTAATCTTC TGAGCATCAG GGCTACCCAT TACTTTGTGA CTTTCTCACT
CTGTGACCAT GCTCAAGAGC TATGGAGAAA TCTAAAACAG GAACCTGGAC AGTGGGTCCT ACACAGAGAC AGAGGAGAGT
GGGCCAGGGC AAGGTGGGAG TGGGAGAAGT CTGAGATGAA AACATCAGAA TGGAGCAGAG GCAAGAATGA GATTTCACCT
GGGAGGTTAT GGGTGGGGAA AGATACGAAA TACAGGAGAC AGGAGAGGGA AGATGGGCGG AACACAGGGT GAGAATGAGA
TTCCAGGGAA GCCTAGCTCA GCTTTAACCC AATTTGTCCA TTCATTGGAG AGAGTATCTA TGGCCGTGTT CAAACCCTGG
GGTGCTCTGT TCCAGGGGAG ATCATCGGGG GCACAGAATG CAAGCCACAT TCCCGCCCCT ACATGGCCTA CCTGGAAATT
GTAACTICCA ACGGTCCCTC AAAATTTTGT GGTGGTTTCC TTATAAGACG GAACTTTGTG CTGACGGCTG CTCATTGTGC AGGAAGGTGA GACAACAGGG TCTATTTATC TCCAAATGGG AGATGAACAA CCAGAGTAGC ATCCAGGAAT ACACCTGCAC
TGGGGACTGA AGAGGGGGTC CTGGGTCTTG TCAACTTTCA GGAGAGGGAA GACTTTGGGC TGAAAGACTT TAGTCTGTGT
TTGAATAGTT CCTTGAGCCT CAGTCACTGA GCTAAGCTCC CTTCGGAGGA AAAGGAGGTC CTGTCCGAAG GTCCCTCTTG
TTGCAGTAGC ACCCCTCACC CCTACCCAAC TCAAGACACA CGGCTCACTT TTCAGGGCCC CACCCAGTCT CAGGGCCACT
TCCTCTATGG CCTTTTCAAG AACACTGGCT CTAGTTCTCA GGGTCCTGAA CCCATCATTT TATGGGAGCA GAGAACAGGT CTACATAAGA CCCCACCTT CCCGTTTTAA CTGATATCTC CTGCTTCAGG GGCTGGCCCT CATGCAGGGT TCCCTGAATT AGGAAGTGTG AACCCTGTCC CCTGAGTCCT CCCTGGCCTG TTCAGTCCCC AGCAATTCCA GGGGTCGTAG AAATTGTGTC
TGTTTCCTGA GAAAGCTCTT TCATGAGTTA AGCCTGAGCC CTCAAATGCC ACAAGTGGCC CATGAAAAGG GAGATGGGTA GAGTCCGGCN ACCCAGTGAC AGAGTTTAGT CCTCTTTTCT CAGAATGAGC TCACCTCAGA AGAAACCCCA AGCCATCACT
```

AGACACATGG CAGAAGCTTG AGGTTATAAA GCAATTCCGT CATCCAAAAT ATAACACTTC TACTCTTCAC CACGATATCA TGTTACTAAA GGTGACAACA CCTCTCTTCT CCCTTTCCAC TTCCCATTCT CCTAAGCTTC TCCTTCAGGT CCTCATTGCC CTGAATTTTT CTTAGGACTT GGCTATAACA TGAAGCTACT CACCCTGTCC CTCCCTGATC ACCTCCAACT GTCCAGAGCC CATTTCGAGG ACTGACAGTC CTTCATTCCC TTCACAGTTG AAGGAGAAAG CCAGCCTGAC CCTGGCTGTG GGGACACTCC CCTTCCCATC ACAATTCAAC TTTGTCCCAC CTGGGAGAAT GTGCCGGGTG GCTGGCTGGG GAAGAACAGG TGTGTTGAAG CCGGGCTCAG ACACTCTGCA AGAGGTGAAG CTGAGACTCA TGGATCCCCA GGCCTGCAGC CACTTCAGAG ACTTTGACCA CAATCTTCAG CTGTGTGTGG GCAATCCCAG GAAGACAAAA TCTGCATTTA AGGTGATCCT CCAACTAGGT TTCCTCTCCA
AAACTCACTG TTCAGGGACC TGAATGCTCT TAGAAGGAGA TGGGGTCAGC AGGTTGTCAG TCAGGTGACA GGGTGAGCAT CACAGGAATT GCTGTCCTCC CGTGGTCCAA GACAGCCTCT GACCATCCAT TCCAGTCTAC TGCACTGGGG GCATGGGGTG ACTGTGGAGA ATGTGGATGA CGGTCCCAAG AAAGGAAGAA GGGGCATCAG AACTAGATGT ATAAGTGAGG AGCTCCACCT CCTGGGTCTG ACTTTAGGTC TCACTGTGAC TCCAAGCTGG CTGGCAGACA GGAGTGGAGG ACTTCCCGGG CTCACCTTCT TCTCTCTCTC CTCCCCCTAC AGGGAGACTC TGGGGGCCCT CTTCTGTGTG CTGGGGTGGC CCAGGGCATC GTATCCTATG GACGGTCGGA TGCAAAGCCC CCTGCTGTCT TCACCCGAAT CTCCCATTAC CGGCCCTGGA TCAACCAGAT CCTGCAGGCA AATTAATCCT GGATCCTGAG CCAGCCTGAA GGGAAGCTG AACTGGACCT TAGCAGCAAA GTGTGTGCAA CTCATTCTGG
TTCTACCCTT GGTTCCCTCA GCCACAACCC TAAGCCTCCA AGAGGTCTCC TACAGGTAAC AGAACTTTCA ATAAACTTCA
GTGAAGACAC AGCTTCTAGT CGTGAGGTGTG TGTCCCTCTC TGCTGCTCTC TTCTCCTGCA CATGTGACCT GATTCCCAGC 15 CCAAGCACCA AGGA CACCGCTCCT GTCAGCCAAC AAATATCCAT TGAGCGACAC CTGTGTCCCA GGTGCTGCTC TGGGCCCTGG GAGAAGTGCA TCAGTGGGCT TGGTAGTAGA GGGTAGGGAT GGAGTGAAGG GTAGGCAGGA AGAATGTCCC CAGGCTGGTA GGAGTGGGG TGGGGGGGTTT CAGTCTCAAA ACTCCCATGA AAACCAGAGA GAAGTTTCAG AACTCCACCC AAGAGGCTGG GTTTCTAGGG CCCAGAGCTG CCCTCCCCCA CCCTAGAATG GGCTATAAAA GTCCCTTCCC AGCTACGTCC 20 AGAGAAGAGC TGGAGGAAGT GAGAGGTCGG CTGGGGGTCC TCAAAGTGAG AGGGGAGCAG AGGATCCTCC CGTGCAGGCT GTGGATGTCA CTCACTTCCC AGCTGGTGAA GCCTCGCTGC AGAGATGCAT CTGCTCCCAG CCCTGGCAGG GGTCCTGGCC ACACTCGTCC TCGCCCAGCC CTGTGAGGGC ACTGACCCAG GTAATAGTCC CCTAGACAGG CAAGGAGGAG GGAGGGGAAA TGGAAGGGGA AGCACTTGGG TCTTGGAGGG GGTCTTGTGG CTTGCTGAAC CCTGAGTCCC CATCTCTTTG AACAGCCTCC CCTGGGGCAG TGGAGACCTC GGTCCTGCGA GACTGCATAG CAGAGGCCAA GTTGCTGGTG GATGCTGCCT ACAATTGGAC CCAGAAGAG TOGACTTGGG TCTGGGGGCT GCATGGGCCT GGGAGGATCA GT TAATACCTTG TGGGGTCAGG GAGCCCATGT CCCGTGCTGA TGTTATTTCC CCACCAGGTC CGGGCTGTCT CCAACCAGAT TGTGCGCTTC CCCAATGAGA GACTGACCTC CGACCGTGGC CGAGCCCTCA TGTTCATGCA GTGGGGCCAG TTCATTGACC ATGACCTGGA CTTCTCCCCG GAGTCCCCGG CCAGAGTGGC CTTCACTGCA GGCGTTGACT GTGAGAGGAC CTGCGCCCAG CTGCCCCCCT GCTTTCCCAT CAAGGTACCT ACCCTCAGCC AATCTCCCAT GCCCTTGTGT GGCCTCCCCC AAAGGCAAGG TGCTGGGGGT GGGGATCTGG AAGACTGGAG CACCATCCTT AAGGAGCTGC CTGTGGAGCT AGGGTATGAG ACAGAGACAC AAG CACTGTCTCC TCTTCCATCT CAGATCCCAC CCAATGACCC CCGCATCAAG AACCAGCGTG ACTGCATCCC TTTCTTCCGC TCGGCACCCT CATGCCCCCA AAACAAGAAC AGAGTCCGCA ACCAGATCAA CGCGCTCACC TCCTTTGTGG ACGCCAGCAT GGTGTATGGC AGTGAGGTCT CCCTCTCGCT GCGGCTCCGC AACCGGACCA ACTACCTGG GCTGCTGGC ATCAACCAGC GCTTTCAAGA CAACGGCCGG GCCCTGCTGC CCTTCGACAA CCTGCACGAT GACCCCTGTC TCCTCACCAA CCGCTCGGCG CGCATCCCCT GCTTCCTGGC AGGTCAGACA GGGAGGAAGG TGGTGTCTTC CCAGGAAACA GCCATCCCTG GGGTCCCAAC TGGGGAAGCAA TGGTGGAAGGT TGGTGAAGGT ACATGGTTTG GGACCTCAGT ATTAGGCACA CCATAAGCAT GGATCTGTGC AC TGAAGAGATG GAGGTCCAGT GAGGGCCAGG AGTTTGGCCC ACCCCGTCTC TCCCATCCCC AGCCCTGGGT CTACCCTGGT AGAAAGACAT TTCTCTGGGA AAGGCTGCAG TAAATCTGAG CTTGGGGTTT TCAAGGTGAC ACCCGATCAA CGGAAACCCC CAAACTGGCA GCCATGCACA CCCTCTTTAT GCGAGAGCAC AACCGGCTGG CCACCGAGCT GAGACGCCTG AATCCCCGGT GGAATGGAGA CAAACTGTAC AATGAGGCTC GGAAGATCAT GGGGGCCATG GTCCAGGTAA GGAGCTCTGC ATCCCAGCAT CCCCC CTTTGTATCT CCACCCACCA ATAGTAAATT AATGTTGTCA CATTTGACGT GATGACAATA AAGAATATGT CTGAGCCACC CTTTGAAAAG GCAAGGGTAT GGGTGAGTAG CCTCTGGGGA ATGTTCCTCC TGTCTTCCCT TCCAGATCAT CACCTACCGA GACTTTCTGC CCCTGGTTCT GGGCAAGGCC CGGGCCAGGA GAACCCTGGG GCACTACAGG GGGTACTGCT CCAATGTGGA CCCACGGGTG GCCAATGTCT TCACCCTGGC CTTCCGCTTT GGCCACACAA TGCTCCAGCC CTTCATGTTC CGCTTGGACA GTCAGTACCG GGCCTCCGCA CCCAACTCGC ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGTGACCAGG TTTTCCAGGG GGCAAATGGG GGTGAGGGTG GGGAGCATGC CCTCCCCTAG GTGG TCCAGCTGCT TCATGTCTCT CCAGAACTCT GTTTCCTGAC AAACGTTACT AACATACCCG ACTGGCTTGT CCAGCTCTGG GCTAGCTTGG CATCATGTGA TAACCCAAGT AGCTTCCCAG AGGCTGGTCC AATCTGTGCT GCTCACATTC CCTGCCACCA GGGGGCATCG ACCCCATCCT CCGGGGCCTC ATGGCCACCC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC CGGCTGTTTC GGCAAGTGAG GAGGATTGGG CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCCTTCC AGGTGAGGGG GCTGTCCACC TCTTCTCCCA GCTTTGCTCG GGCCAGGCTG CTCAAGGGGT TCTGGGAAGA CCCTGGTACC CGACTGCCTG GTAGGTTCTG
GTGGCAGAAA CGAGGTGTTT TCACCAAAAG ACAGCGCAAG GCCCTGAGCA GAATTTCCTT GTCTCGAATT ATATGTGACA ATACCGGTAT CACCACGGTT TCAAGGGACA TCTTCAGAGC CAACATCTAC CCTCGGGGCT TTGTGAACTG CAGCCGTATC AACCTGCACG ATGACCCCTG TCTCCTCACC AACCGCTCGG CGCGCATCCC CTGCTTCCTG GCAGGTGACA CCCGATCAAC GGAAACCCCC AAACTGGCAG CCATGCACAC CCTCTTTATG CGAGAGCACA ACCGGCTGGC CACCGAGCTG AGACGCCTGA ATCCCCGGTG GAATGGAGAC AAACTGTACA ATGAGGCTCG GAAGATCATG GGGGCCATGG TCCAGATCAT CACCTACCGA GACTTTCTGC CCCTGGTTCT GGGCAAGGCC CGGGCCAGGA GAACCCTGGG GCACTACAGG GGGTACTGCT CCAATGTGGA CCCACGGGTG GCCAATGTCT TCACCCTGGC CTTCCGCTTT GGCCACACAA TGCTCCAGGC CTTCATGTTC CGCTTGGACA

```
GTCAGTACCG GGCCTCCGCA CCCAACTCGC ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA
        GGGGGCATCG ACCCCATCCT CCGGGGCCTC ATGGCCACCC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA
       GCTCCGGGAC CGGCTGTTTC GGCAAGTGAG GAGGATTGGG CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGCCTTCC AGGGTACAAT GCTTGGAGGC GCTCTCTGGG GCTCTCCCAG CCCCGGAATT TGGCACAGCT TAGCCGGGTC CTGAAAAAACC AGGACTTGGC AAGGAAGTTC CTGAATTTGT ATGGAACACC TGACAACATT GACATCTGGA TTGGGGCCAT
        CGCTGAGCCT CTTTTGCCGG GGGCTCGAGT GGGGCCTCTT CTGGCTTGTC TGTTCGAGAA CCAGTTCAGA AGAGCCGAGA
CGGAGACAGG TTCTGGTGGC AGAACGAGGT GTTTTCACCA AAGACAGCGC AAGGCCCTGA GCAGAATTTC CTTGTCTCGA
        ATTATATGTG ACAATACCGG TATCACCACG GTTTCAAGGG ACATCTTCAG AGCCAACATC TACCCTCGGG GCTTTGTGAA
       CTGCAGCCGT ATCCCCAGGT TGAACCTATC AGCCTGGCGA GGGACATGAG GCTTCTGCAG GAGTCTATCC CAAGTCTCCA ACTTTTGGAG ACAAGGGGAA GGGGAGGACC ATGAGGCTGC CTTGTCTCCC TGGAGCAAGT GCAGGCTCGT GACGCTTCTG
       ACTITITIGAG ACAAGGGGAA GGGGAGGACC ATGAGGCTIGC CTTGTCTCCC TIGAGCAAGT GCAGGCTCGT GACCTTCTG
CTGCTACAG CTCAGAGCTG GGTTCCCCAG CCAGGAGTGA AGGCTGGGGG CTCCTATCAG CAATGGACCT TCCGCCTTGG
GAGCCTCTTA GGTATTAGGC TATGAATCAG CGCACGTGC AAAGGCTTGG GAGCCAAGCC ATGTGGTCTT GCACCCCAGG
CAAGAAAAGT CAGCTGGAGG GTTTACAGCA CTTTCTACTG TTTCCCAGCC CTCCCTCCCC TCCCTCACCA TGACTAAGAG
ACCACTCGGT CCTAGCCTCC AGACACCCCA CAATACTCCT CTGAGCCTGA GGCCAGGCAG CATGCTCTGC TTCTACCAAT
AAAGCACTGC CGGAATTC CATATGTATG GGAATACTGT ATTTCAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT
TGTGGCTAAC CCTTGTAATC CTAGCACTTT GAGAGGCTGA AGTGGGCAGA TCACTTGAGC TTCAGAGTTC GAGACCAGCA
        TGGACAACAT GGTGAAACCC AGTCTCTACC AAAAACACAA AAATATTAGC TGGGTGTGGT GGTGCATGCC TGTAGTCCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG CTTGAGCCTG GGAGGCAGAA GTTGCAATGA GCAGAGATCG TGCCACTCCG
       CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAAT AAATAAATAAA ATAAATAAAA TAAATGAAAT GAAATTATAA
GAAATTACCA CTTTTTCCATG TAAGAAGTGA TCATTTCCAT TATAAAGGAA GGAATTTAAT CCTACCTGCC ATTCCACCAA
AGCTTACCTA GTGCTAAAGG ATGAGGTGTT AGTAAGACCA ACATCTCAGA GGCCTTCTG TGCCAATAGC CTTCCTTCCT
TTCCCTTCCA AAAACCTCAA GTGACTAGTT CAGAGGCCTG TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTGG
AACCTGGGCA TTTTCCAGTG TGTTCCATAC TGTCAATATT CCCCCAGCTT CCTGGACTCC TGTCACAAAGC TGGAAAAAGTG
        AGAGGATGA CAGGGATTAA CCAGAGAGCT CCCTGCTGAG GAAAAAATCT CCCAGATGCT GAAAGTGAGG CCATGTGGCT
        TCACAGTCAT AAATTAGCTA ACTGTACACA AGCTGGGGAC ACTCCCTTTG GAAACCAAAA AAAAAAAAA AAAAAAGAGA
       CCTTTATGCA AAAACAACTC TCTGGATGGC ATGGGGTGAG TATAAATACT TCTTGGCTGC CAGTGTGTTC ATAACTTTGT AGCGGAGTCGA AAACTGAGGC TCCGGCCGCA GAGAACTCAG CCTCATTCCT GCTTTAAAAT CTCTCGGCCA CCTTTGATGA GGGGACTGGG CAGTTCTAGA CAGTCCCGAA GTTCTCAAGG CACAGGTCTC TTCCTGGTTT GACTGTCCTT ACCCCGGGGA
30
        GGCAGTGCAG CCAGCTGCAA GGTGAGTTGC C CATATGTATG GGAATACTGT ATTTCAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT TGTGGCTAAC CCTTGTAATC CTAGCACTTT GAGAGGCTGA AGTGGGCAGA TCACTTGAGC TTCAGAGTTC
        GAGACCAGCA TGGACAACAT GGTGAAACCC AGTCTCTACC AAAAACACAA AAATATTAGC TGGGTGTGGT GGTGCATGCC TGTAGTCCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG CTTGAGCCTG GGAGGCAGAA GTTGCAATGA GCAGAGATCG
       TGCCACTCCG CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAAT AAATAAATAA ATAAATAAAA TAAATGAAAT GAAATTATAA GAAATTACCA CTTTTCCATG TAAGAAGTGA TCATTTCCAT TATAAGGGAA GGAATTTAAT CCTACCTGCC ATTCCACCAA AGCTTACCTA GTGCTAAAGG ATGAGGTGTT AGTAAGACCA ACATCTCAGA GGCCTCTCTG TGCCAATAGC
35
       CTTCCTTCCT TTCCCTTCCA AAAACCTCAA GTGACTAGTT CAGAGGCCTG TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTGG AACCTGGGCA TTTTCCAGTG TGTTCCATAC TGTCAATATT CCCCCAGCTT CCTGGACTCC TGTCACAAGC TGGAAAAGTG AGAGGATGGA CAGGGATTAA CCAGAGAGCT CCCTGCTGAG GAAAAAATCT CCCAGATGCT GAAAGTGAGG
        CCATGTGGET TGGCCAAATA AAACCTGGCT CCGTGGTGCC TCTGTCTTAG CAGCCACCCT GCTGATGAAC TGCCACCTTG
GACTTGGGAC CAGAAAGAGG TGGGTTGGGT GAAGAGGCAC CACACAGAGT GATGTAACAG CAAGATCAGG TCACCCACAG
        AAAAAAGAGA CCTTTATGCA AAAACAACTC TCTGGATGGC ATGGGGTGAG TATAAATACT TCTTGGCTGC CAGTGTGTTC ATAACTTTGT AGCGAGTCGA AAACTGAGGC TCCGGCCGCA GAGAACTCAG CCTCATTCCT GCTTTAAAAT CTCTCGGCCA
        CCTTTGATGA GGGGACTGGG CAGTTCTAGA CAGTCCCGAA GTTCTCAAGG CACAGGTCTC TTCCTGGTTT GACTGTCCTT ACCCCGGGGA GGCAGTGCAG CCAGCTGCAA GGTGAGTTGC C CTGCTTTAAA ATCTCTCGGC CACCTTTGAT GAGGGGACTG
        GGCAGTTCTA GACAGTCCCG AAGTTCTCAA GGCACAGGTC TCTTCCTGGT TTGACTGTCC TTACCCCGGG GAGGCAGTGC
        AGCCAGCTGC AAGCCCCACA GTGAAGAACA TCTGAGCTCA AATCCAGATA AGTGACATAA GTGACCTGCT TTGTAAAGCC
        ATAGAGATGG CCTGTCCTTG GAAATTTCTG TTCAAGACCA AATTCCACCA GTATGCAATG AATGGGGAAA AAGACATCAA
        CAACAATGTG GAGAAAGCCC CCTGTGCCAC CTCCAGTCCA GTGACACAGG ATGACCTTCA GTATCACAAC CTCAGCAAGC
        AGCAGAATGA GTCCCCGCAG CCCCTCGTGG AGACGGGAAA GAAGTCTCCA GAATCTCTGG TCAAGCTGGA TGCAACCCCA
        TTGTCCTCCC CACGGCATGT GAGGATCAAA AACTGGGGCA GCGGGATGAC TTTCCAAGAC ACACTTCACC ATAAGGCCAA
        AGGGATTTTA ACTTGCAGGT CCAAATCTTG CCTGGGGTCC ATTATGACTC CCAAAAGTTT GACCAGAGGA CCCAGGGACA
AGCCTACCCC TCCAGATGAG CTTCTACCTC AAGCTATCGA ATTTGTCAAC CAATATTACG GCTCCTTCAA AGAGGCAAAA
        ATAGAGGAAC ATCTGGCCAG GGTGGAAGCG GTAACAAAGG AGATAGAAAC AACAGGAACC TACCAACTGA CGGGAGATGA
       GCTCATCTTC GCCACGAGC AGGCCTGCC CAATGCCCCA CGCTGCATTG GGAGGATCCA GTGGTCCAAC CTGCAGGTCT
TCGATGCCCG CAGCTGTTCC ACTGCCCGGG AAATGTTTGA ACACATCTGC AGACACTGC GTTACTCCAC CAACAATGGC
AACATCAGGT CGGCCATCAC CGTGTTCCCC CAGCGGAGTG ATGGCAAGCA CGACTTCCGG GTGTGGAATG CTCAGCTCAT
CCGCTATGCT GGCTACCAGA TGCCAGATGG CAGCATCAGA GGGGACCCTG CCAACGTGGA ATTCACTCAG CTGTGCATCG
ACCTGGGCTG GAAGCCCAAG TACGGCCGCT TCGATGTGGT CCCCCTGGTC CTGCAGGCCA ATGGCCGTGA CCCTGAGCTC
       TTCGAAATCC CACCTGACCT TGTGCTTGAG GTGGCCATGG AACATCCCAA ATACGAGTGG TTTCGGGAAC TGGAGCTAAA GTGGTACGCC CTGCCTGCAG TGGCCAACAT GCTGCTTGAG GTGGGCGGCC TGGAGTTCCC AGGGTGCCCC TTCAATGGCT GGTACATGGG CACAGAGATC GGAGTCCGGG ACTTCTGTGA CGTCCAGCGC TACAACATCC TGGAGGAAGT GGGCAGGAGA
        ATGGGCCTGG AAACGCACAA GCTGGCCTCG CTCTGGAAAG ACCAGGCTGT CGTTGAGATC AACATTGCTG TGATCCATAG
TTTTCAGAAG CAGAATGTGA CCATCATGGA CCACCACTCG GCTGCAGAAT CCTTCATGAA GTACATGCAG AATGAATACC
        GGTCCCGTGG GGGCTGCCCG GCAGACTGGA TTTGGCTGGT CCCTCCCATG TCTGGGAGCA TCACCCCCGT GTTTCACCAG
GAGATGCTGA ACTACGTCCT GTCCCCTTTC TACTACTATC AGGTAGAGGC CTGGAAAACC CATGTCTGGC AGGACGAGAA
        GCGGAGACCC AAGAGAAGAG AGATTCCATT GAAAGTCTTG GTCAAAGCTG TGCTCTTTGC CTGTATGCTG ATGCGCAAGA
        CAATGGCGTC CCGAGTCAGA GTCACCATCC TCTTTGCGAC AGAGACAGGA AAATCAGAGG CGCTGGCCTG GGACCTGGGG
GCCTTATTCA GCTGTGCCTT CAACCCCAAG GTTGTCTGCA TGGATAAGTA CAGGCTGAGC TGCCTGGAGG AGGAACGGCT
        GCTGTTGGTG GTGACCAGTA CGTTTGGCAA TGGAGACTGC CCTGGCAATG GAGAGAAACT GAAGAAATCG CTCTTCATGC
        TGAAAGAGCT CAACAACAAA TTCAGGTACG CTGTGTTTGG CCTCGGCTCC AGCATGTACC CTCGGTTCTG CGCCTTTGCT
        CATGACATTG ATCAGAAGCT GTCCCACCTG GGGGCCTCTC AGCTCACCCC GATGGGAGAA GGGGATGAGC TCAGTGGGCA
        GGAGGACGCC TTCCGCAGCT GGGCCGTGCA AACCTTCAAG GCAGCCTGTG AGACGTTTGA TGTCCGAGGC AAACAGCACA
```

						m. 0.4.0000000	TOG 1 00 1 0TO	A CA COCCETTO
	TTCAGATCCC C	AAGCTCTAC	ACCICCAATG	TGACCTGGGA	CCCGCACCAC	TACAGGCTCG	TGCAGGACTC	ACAGCCTTTG
	GACCTCAGCA A	AGCCCTCAG	CAGCATGCAT	GCCAAGAACG	TGTTCACCAT	GAGGCICAAA	TCTCGGCAGA	ATCIACAAAG
	TCCGACATCC A	GCCGTGCCA	CCATCCTGGT	GGAACTCTCC	TGTGAGGATG	GCCAAGGCCT	GAACTACCTG	CCGGGGGAGC
	ACCTTGGGGT T	TGCCCAGGC .	AACCAGCCGG	CCCTGGTCCA	AGGCATCCTG	GAGCGAGTGG	TGGATGGCCC	CACACCCCAC
5	CAGACAGTGC G	CCTGGAGGA	CCTGGATGAG	AGTGGCAGCT	ACTGGGTCAG	TGACAAGAGG	CTGCCCCCCT	GCTCACTCAG
•	CCAGGCCCTC A	CCTACTCCC	CGGACATCAC	CACACCCCCA	ACCCAGCTGC	TGCTCCAAAA	GCTGGCCCAG	GTGGCCACAG
	AAGAGCCTGA G	AGACAGAGG	CTGGAGGCCC	TOTOCCAGOO	CTCAGAGTAC	AGCAAGTGGA	AGTTCACCAA	CAGCCCCACA
	TTOOTOGLEGO T	DORUAGAGA	CIGGAGGCCC	CTCCCCCCCCCC	CICAGAGIAC	COTCOTTTCC	CACCTCCCCA	TTCTGAAGCC
	TTCCTGGAGG T	GCIAGAGGA	GITCCCGTCC	CIGCGGGIGI	CIGCIGGCII	CCIGCITICC	CAGCICCCCA	LCCTOAAGCC
	CAGGTTCTAC T	CCATCAGCT	CCTCCCGGGA	TCACACGCCC	ACGGAGATCC	ACCIGACIGI	GGCCGTGGTC	ACCIACCACA
10	CCGGAGATGG C	CAGGGTCCC	CTGCACCACG	GTGTCTGCAG	CACATGGCTC	AACAGCCTGA	AGCCCCAAGA	CCCAGTGCCC
	TGCTTTGTGC G	GAATGCCAG	CGCCTTCCAC	CTCCCCGAGG	ATCCCTCCCA	TCCTTGCATC	CTCATCGGGC	CTGGCACAGG
	CATCGTGCCC T	TCCGCAGTT T	TCTGGCAGCA .	ACGGCTCCAT	GACTCCCAGC .	ACAAGGGAGT	GCGGGGAGGC	CGCATGACCT
	TGGTGTTTGG G	TGCCGCCGC (CAGATGAGG	ACCACATCTA	CCAGGAGGAG	ATGCTGGAGA	TGGCCCAGAA	GGGGGTGCTG
	CATGCGGTGC A	CACACCCTA	TTCCCCCCCTG	CCTCCCAACC	CCAAGGTCTA	TGTTCAGGAC	ATCCTGCGGC	AGCAGCTGGC
1.5	CATGCGGTGC A	CACAGCCIA	TOCCOCCIO	CCIGGCAAGC	CCAMOUICIA	CCCCCATCT	CCCCATCCCC	CCCCACCTCC
15	CAGCGAGGTG C							
	CCCACACCCT G							
	AGCCAGAAGC C	GCTATCACGA	AGATATCTTC	GGTGCTGTAT	TTCCTTACGA	GGCGAAGAAG	GACAGGGTGG	CGGTGCAGCC
	CAGCAGCCTG G	AGATGTCAG	CGCTCTGAGG	GCCTACAGGA	GGGGTTAAAG	CTGCCGGCAC	AGAACTTAAG	GATGGAGCCA
	GCTCTGCATT A	TCTGAGGTC .	ACAGGGCCTG	GGGAGATGGA	GGAAAGTGAT	ATCCCCCAGC	CTCAAGTCTT	ATTTCCTCAA
20	CGTTGCTCCC C	ATCAAGCCC	TTTACTTGAC	CTCCTAACAA	GTAGCACCCT	GGATTGATCG	GAGCCTCCTC	TCTCAAACTG
20	GGGCCTCCCT G							
	GGGCCICCCI G	diccolled.	AGACAAAA1C	TIMANIOCCA	OUCCIOUCUA	AACTCCCTTC	TOTACACTTA	TTTATCCCTC
	GCACCACTTC A	LAGIGACCAC	CAGGAGGIGC	TATUGUACUA	CIGIGIAIII	AACIGCCIIG	IGIACAGIIA	THAIGCCIC
	TGTATTTAAA A							
	ACATGAATTG (CATITITACIT				CTCCAGCAG A		
25	GCAACITGAA G	AGCGTGGCC	CAGGAGCCTG	GGCCACCCTG	CGGCCTGGGG	CTGGGGCTGG	GCCTTGGGCT	GTGCGGCAAG
	CAGGGCCCAG C	CACCCCGGC	CCCTGAGCCC	AGCCGGGCCC	CAGCATCCCT	ACTCCCACCA	GCGCCAGAAC	ACAGCCCCCC
	GAGCTCCCCG C	TAACCCAGC	CCCCAGAGGG	GCCCAAGTTC	CCTCGTGTGA	AGAACTGGGA	GGTGGGGAGC	ATCACCTATG
	ACACCCTCAG C	CCCCACCC	CAGCAGGATG	GGCCCTGCAC	CCCAAGACGC	TGCCTGGGCT	CCCTGGTATT	TCCACGGAAA
	CTACAGGGCC G	COCCAGGCG	CAGCAGGATG	CCCCCTCACC	ACCTGCTGAG	TCACCCCCC	GACTTCATCA	ACCAGTACTA
20	CIACAGGGCC G	GUCCICCC		GCCCCTGAGC	AGCIGCIGAG	1CAGGCCCGG	CACTICATCA	ACCAUTACTA
30	CAGCTCCATT A	AGAGGAGCG	GCTCCCAGGC	CCACGAACAG	CGGCTTCAAG	AGGIGGAAGC	CGAGGIGGCA	GCCACAGGCA
	CCTACCAGCT T	AGGGAGAGC	GAGCTGGTGT	TCGGGGCTAA	GCAGGCCTGG	CGCAACGCTC	CCCGCTGCGT	GGGCCGGATC
	CAGTGGGGGA A	AGCTGCAGGT	GTTCGATGCC	CGGGACTGCA	GGTCTGCACA	GGAAATGTTC	ACCTACATCT	GCAACCACAT
	CAAGTATGCC A	CCAACCGGG	GCAACCTTCG	CTCGGCCATC	ACAGTGTTCC	CGCAGCGCTG	CCCTGGCCGA	GGAGACTTCC
	GAATCTGGAA C	CAGCCAGCTG	GTGCGCTACG	CGGGCTACCG	GCAGCAGGAC	GGCTCTGTGC	GGGGGGACCC	AGCCAACGTG
35	GAGATCACCG A	AGCTCTGCAT	TCAGCACGGC	TGGACCCCAG	GAAACGOTCG	CTTCGACGTG	CTGCCCCTGC	TGCTGCAGGC
55	CCCAGATGAG C	CCCCAGAAC	TOTTOOTTOT	CCCCCCCCAG	CTCCTCCTTC	AGGTGCCCCT	GGAGCACCCC	ACCCTGGAGT
	GGTTTGCAGC C	OTCCCOOTC	CCCTCCTACC	CCCTCCCCCC	ACTOTOCAAC	ATGCTCCTCC	AAATTGGGGG	CCTCCACTTC
	GGTTTGCAGC C	CIGGGCCIG	COCTOOTACO	CCCICCCOC	MOTOTCCAAC	ATUCTUCTOU	CACCCCCACACC	CCTACAACAT
	CCCGCAGCCC C	CIICAGIGG	CIGGIACAIG	AGCACTGAGA	1CGGCACGAG	GAACCIGIGI	UACCCICACC	COLCTCOLLL
	CCTGGAGGAT G	regererer	GCATGGACCT	GGATACCCGG	ACCACCICGI	CCCIGIGGAA .	AGACAAGGCA	GCAGIGGAAA
40	TCAACGTGGC C	CGTGCTGCAC	AGTTACCAGC	TAGCCAAAGT	CACCATCGTG	GACCACCACG	CCGCCACGGC	CTCTTTCATG
	AAGCACCTGG A	GAATGAGCA	GAAGGCCAGG	GGGGGCTGCC	CTGCAGACTG	GGCCTGGATC	GTGCCCCCCA	TCTCGGGCAG
	CCTCACTCCT G							
	GGAGTGCCGC C	CAAGGGCACC	GGCATCACCA	GGAAGAAGAC	CTTTAAAGAA	GTGGCCAACG	CCGTGAAGAT	CTCCGCCTCG
	CTCATGGGCA C	GGTGATGGC	GAAGCGAGTG	AAGGCGACAA	TCCTGTATGG	CTCCGAGACC	GGCCGGGCCC	AGAGCTACGC
45	ACAGCAGCTG (GGAGACTCT	TCCGGAAGGC	TTTTGATCCC	CGGGTCCTGT	GTATGGATGA	GTATGACGTG	GTGTCCCTCG
73	AACACGAGAC (CTCCTCCTC	CTCCTAACCA	CCACATTTCC	CAATGGGGAT	CCCCCGGAGA	ATGGAGAGAG	CTTTGCAGCT
	AACACGAGAC (CIGGIGCIG	GIGGIAACCA	CACATITUO	OAATOOOOAT	CCCCCOOAOA	TATALOAGAGAG	CITIOCACCI
	GCCCTGATGG A	GATGICCGG	CCCCTACAAC	AGCICCCCIC	UGCCGGAACA	GCACAAGAGI	CLOLOLOLOT	GCTTCAACAG
	CATCTCCTGC TO	CAGACCCAC '	TGGTGTCCTC	TTGGCGGCGG A	AAGAGGAAGG	AGICCAGIAA	CACAGACAGI	GCAGGGGCCC
	TGGGCACCCT C	CAGGTTCTGT	GTGTTCGGGC	TCGGCTCCCG	GGCATACCCC	CACTICIGCG	CCTTTGCTCG	TGCCGTGGAC
50	ACACGGCTGG A	GGAACTGGG	CGGGGAGCGG	CTGCTGCAGC	TGGGCCAGGG	CGACGAGCTG	TGCGGCCAGG	AGGAGGCCTT
	CCGAGGCTGG C	CCCAGGCTG	CCTTCCAGGC	CGCCTGTGAG	ACCTTCTGTG	TGGGAGAGGA	TGCCAAGGCC	GCCGCCCGAG
	ACATCTTCAG C	CCCAAACGG	AGCTGGAAGC	GCCAGAGGTA	CCGGCTGAGC	GCCCAGGCCG	AGGGCCTGCA	GTTGCTGCCA
	GGTCTGATCC A	CGTGCACAG	GCGGAAGATG	TTCCAGGCTA	CAATCCGCTC	AGTGGAAAAC	CTGCAAAGCA	GCAAGTCCAC
	GAGGGCCACC A	TCCTCCTCC	CCCTGGACAC	CGGAGGCCAG	GAGGGGCTGC	AGTACCAGCC	GGGGGACCAC	ATAGGTGTCT
55	GCCCGCCCAA C	1100100100	CTTCTCCACC	CCCCCCCCC	CCCCCTCCAG	GACCCGCCGG	CCCCCACTGA	CCCCGTGGCA
55	GCCCGCCCAA C	CGGCCCGGC	CITOTOGAGG	CUCTUCTUAG	CCGCGTGGAG	OACCCGCCGG	COCCCACIOA	GCCCG1GGCA
	GTAGAGCAGC T	GGAGAAGGG	CAGCCCIGGI	GGCCCTCCCC	CCGGCTGGGT	GCGGGACCCC	CGGCTGCCCC	CGTGCACGCT
	GCGCCAGGCT C	CTCACCTTCT	TCCTGGACAT	CACCTCCCCA	CCCAGCCCTC	AGCTCTTGCG	GCTGCTCAGC	ACCITGGCAG
	AAGAGCCCAG C	GAACAGCAG	GAGCTGGAGG	CCCTCAGCCA	GGATCCCCGA	CGCTACGAGG	AGTGGAAGTG	GTTCCGCTGC
	CCCACGCTGC T	GGAGGTGCT	GGAGCAGTTC	CCGTCGGTGG	CGCTGCCTGC	CCCACTGCTC	CTCACCCAGC	TGCCTCTGCT
60	CCAGCCCCGG T	CACTACTCAG	TCAGCTCGGC	ACCCAGCACC	CACCCAGGAG	AGATCCACCT	CACTGTAGCT	GTGCTGGCAT
-	ACAGGACTCA C	GATGGGCTG	GGCCCCCTGC	ACTATGGAGT	CTGCTCCACG	TGGCTAAGCC	AGCTCAAGCC	CGGAGACCCT
	GTGCCCTGCT T	CATCCCCCC	GCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	TTCCGGCTGC	CACCCGATCC	CAGCTTGCCC	TGCATCCTGG	TOGGTCCAGG
	GIGCCCIGCI I	CAICCOGGG	COCCATTOTO	7100000100	CACCCCGAICC	TTCAGAGCAA	ACCCCTCCAC	CCCACTCCCA
	CACTGGCATT G	eccentre (GGGGATICIG	GCAGGAGCGG	CIGCAIGACA	11UAUAUCAA	AUGUCTUCAG	CCCACICCCA
	TGACTTTGGT G	TTCGGCTGC	CGATGCTCCC	AACTTGACCA	TCTCTACCGC	GACGAGGIGC .	AGAACGCCCA	GCAGCGCGGG
65	GTGTTTGGCC G	AGTCCTCAC	CGCCTTCTCC	CGGGAACCTG	ACAACCCCAA	GACCTACGTG	CAGGACATCC	TGAGGACGGA
	GCTGGCTGCG G	GAGGTGCACC	GCGTGCTGTG	CCTCGAGCGG	GGCCACATGT	TTGTCTGCGG	CGATGTTACC	ATGGCAACCA
	ACGTCCTGCA G	ACCGTGCAG	CGCATCCTGG	CGACGGAGGG	CGACATGGAG	CTGGACGAGG	CCGGCGACGT	CATCGGCGTG
	CTGCGGGATC A	GCAACGCTA	CCACGAAGAC	ATTTTCGGGC	TCACGCTGCG	CACCCAGGAG	GTGACAAGCC	GCATACGCAC
	CCAGAGCTTT T	CCTTCCACC	AGCGTCACTT	"ITTICOOC	GTGCCCTGCG	CGTTCGACCC	TCCCGCCTCA	GACACCAACA
70	CCAGAGCIII I	CC110CAGG	THICOTOMOS	ACCOUNT OF CALL	0100000000	CCGACTCACC	TCCCCCCCCA	CACCATCACA
70	GCCCCTGAGA C	JCCGCCTGGC	TITUUCTICC	AUTICCUUUA	UAUCUUCIUC	COACICAGG	ACCUCCUAC	CAGGATCAGC
	CCCGCTCCTC C	CCTCTTGAG	GIGGIGCCTT	CICACATCTG	ICCAGAGGCT	UCAAUUATTC	AGCATTATTC	CICCAGGAAG
	GAGCAAAACG	CCTCTTTTCC	CICTCTAGGC	CTGTTGCCTC	GGGCCTGGGT	CCGCCTTAAT	CIGGAAGGCC	CCTCCCAGCA
	GCGGTACCCC A	AGGGCCTACT	GCCACCCGCT	TCCTGTTTCT	TAGTCCGAAT	GTTAGATTCC	TCTTGCCTCT	CTCAGGAGTA
	TCTTACCTGT A	AAGTCTAAT	CTCTAAATCA	AGTATTTATT	ATTGAAGATT	TACCATAAGG	GACTGTGCCA	GATGTTAGGA
75	GAACTACTAA A	GTGCCTACC C	CAGCTC-3' (SE	O ID NO:12372)				
			- \					

Human Factor Related Anti-sense Oligonucleotide

5'-CCT CCT TCC TGG TCT GTC TGC CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC CBT GTT TCC CBG TCT CTG BGC CTG TCC C TGT TTG CTG GTG TCT GCG C CCC CBB CBG BBG BBG CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC CBT TCT TGT TTT GGG GGC GGG CCC GGC CGT TGT CTT G GTT TGG GGG TTT CCG TTG GGG TTC TCC TGG CCC GGG CCT TGC TCC BGT GBT GGT GCG GTB CTT GTC GCT GCB GCG CTC GGC CTG GTC CCG GBG BGC GCG GGC GGG GGC TGC TGG G GGT TGG CCC GGG GTG CCC C GCC GCT GGG TGC CCT CGT CCT CTG CGG TC GTG TCT CCT GGC TCT GGT TCC CC GCT GCG 10 OTG GCT TOT GTG TTC GGT TTC TGC CCT GTC CTC CGG CGT CCC CGG BGC CTC CCC GGG GCB GGB TGB CTT TTG BGG GGG BCB CBG BTG TCT GGG CBT TGC CBG GTC CTG GGB BCB GBG CCC CGB GCB GGB CCB GGB GTG CGG GCB GCC CGG GCC GGG GGC TGC TGG GBG CCB TBG CGB GGC TGB G CCT CTT TTC TGT TTT TCC C CTC TGC CTT TGT TTG GGT TCG CTT CCT TCT BGB TTC TGG GGT GGT CTC GBT TTT BBBB GCT TGB GBB GCT GCB BBC BTT BTC CBB BGT BTB TTT GBG GCT CCB BGG BTC BCG BCC BTC TTC CCB GGC BTT TTB BGT TGC TGT CGT BBG TGB GBG CTG BGB GBB BCT GTG BBG CBB TCB TGB CTT CBB GBG TTC TTT TCB CCC GTT CTT GGC TTC TTC TGT C CGT TGG CTT CTC GTT GTC CC TGT GGG CTT CTC GTT GTC CC TGT TTG GBT CGG CBG GBG GCB CTC CTC TGG TTG GCT TCC TTC GCC GGC BCB TGC TBG CBG GBB GBB CBG GGG GGG BBG CBG TTG GGB GGT GBG BCC CBT TBB TBG GTG TCG B TCCCTGTTTC CCCCCTTTCG TTCTGCGTTT GCCTTTGGCG TTTTTTGTTT GTTTTCTCCC TCCGTCTTTC TTCTCCCCT GTGGGBBTTT CTGTGGGGBT GGCBTBCBCG TRGGCRGCTC CBBGBGCTBG CBBBCTCBBB TGCBGBBGCB TCCTCBTGGC TCTGBBBCGG TGGGAATTTC TGTGGGGBTG GCATACACGT 30 35 CGACGGCCAG CATGCTTCCT CCTCGGCTAC CACTCCATGG TCCCGCAGAG GCGGACAGGC GCBCGCCTC TTGCCBCCTC CTGCGCBGGG CBGCGCCTTG GGGCCBGCGC CGCTCCCGGC GCGGCCBGCB GGGCBGCCBG CBGCGCCBG CCGBCGGCCB GCBTGCTTCC TCCTCGGCTB CCBCTCCBTG GTCCCGCBGB GGCGGBCBGC GGGGTGGBBB GGTTTGGBGT BTGTCTTTBT GCBCTGBCBT CTBBGTTCTT TBGCBCTCCT TGGCBBBBCT GCBCCTTCBC BCBGBGCTGC BGBBBTCBGG BBGGCTGCCB BGBGBGCCBC GGCCBGCTTG GBBGTCBTGT TTBCBCBCBG TGBGBTGGTT CCTTCCGGGC TTGTGTGCTC TGCTGTCTCT TGGTTCCTTC CGGTGGTTTC TTCCTGGCTC TTGTCCTTTC TCTTGG CCCT TGGC CGGGBGTGGG GGTCCTGGBC GGCBCTGBBG GCBTCCBGGG CTCCCTTCCB GTCCTTCTTG TCCGCTGCCB GCBCCCCTTC BTTCCBGBGG CTGBTGGCCT CCBCCBGGGB CBTGBTTBGG TBGBBBCTBG GBGGCCGCC TCCBCCBGGG BCBTGGTCCT TCTTGTCCGC TGCCTCTCTG GGGTTTTCGG TCTGGGTGGG CTTTCCTCT GGGGCTGCTG CTGGGCTCTT CTTTTTGTTT CTGGCCTGGT GCCCTTTCCC TTGGGTGTCT TGTTTTTGTG GCCTCCBCCB GGGBCBTG GTCTTTGTTT CTGGGCTCGT GCCCCBTCCC GGCTTCTCTC TGGTTCCGTC CTCTGTGGTG TTTGGCCCTG CTTCCTTTTG CCTGTTGAGG GGGCAGCAGT TGGGCCCCAA AGGCCCTCTC GTTCACCTTC TGGCACGGAGTT GCATCCCCATA GTCAAACTCT GTGGTCGTGT CATAGTCCTC TGTGGTGTTT GGAGTTTCCA TCCCGGCTTC TCTCTGGTTC CAAGGGAGB GGGGGCBGCB GTTGGGCCCC BBBGGCCCTC TCGTTCBCCT TCTGGCBCGG BGTTGCBTCC CCBTBGTCBB BCTCTGTGGT CGTGTCBTBG TCCTCTGTGG TGTTTGGBGT TTCCBTCCCG GCTTCTCTCT GGTTCCBBGG GB GGGCBCGGGG CBGTGGGCGG GCBBTGTBGG CBBBGCBGCB GGGTGTGGTG TCCGBGGBBT BTGGGGBGGC BGBTGCBGGB GCGCBGBGGG CBGTBGCBBT GBGGBTGBCB GCGBGGCGTG CCGCGGBGBC CTTCBTGGTB CCTGTGGBGB GGCTGTCGGB GGGGGTGTGG TGTCCGCTTG GCGGTTCTTT CGGGTGTTTC TTCTCTGGGT TGGCCTGCTG CTCGTCGTGGT CGCTCCGCTC CCGGGTTCGT CTCGCTCTGT CGCCCCTTCC TTCCTTGTCG TGTTCCTCCC TTCCTTGCCT CT GBTGTTTGTT BCCBBBGCBT CBBGBBTBGC TTTGCTBTCT BBGGBTCBCB TTTBGBCBTB GGBBBBCGCT GTBGGTCBGBB BGBTGTGCTT 55 BCCTTCBCBC BGBGCTGCBG BBBTCBGGBBGG CTGCCBBGBGBG CCBCGGCCBGC TTGGBGTCBT GTTTBCBCBC BGTGBGGTGC TCCGGTGGCT TTTTGCTTGT GTGCTCTGCT GTCTCTG TTC CTTCCGGTGG TTTCTTCCTG GCTCTTGTCC TTTCTCTTGG CCCTTGGCCC CTTGBGCBGG BBGCTCTGGG GCBGGGBGCT GGCBGGGCCC BGGGGGGTGG CTTCCTGCBC TGTCCBGBGT GCBCTGTGCC BCBGCBGCBG CTGCBGGGCC BTCBGCTTCB TGGGGCTCTG GGTGGCBGGT CCBGCCBTGG GTCTGGGTGG GGCTGGGCTG CBGGCTCCGG GCGGTCCBGCCBTGGGTCTG GGGGCTGGG CTGCBGGCTC CGGGCGGGCG GGTGCGGGCT 70 GGCTGGGCTC CGTGTCTCCB GTGCTCBTGG TGTCCGCTGB GGGBGCGTCT GCTGGC CTGCTGBGGC TTGGGTCTCC GGGCGBTTCT CTGCBGBBGB TGCTCBBBGG GCTCCGGCBG TTCCTCCTTG BTCTGGTCGCT GTCGTBCCBG TCGGBCCBGT

TTTTCGC CGGCCCTTCT CACTGGAGGC ACCGGGCAGT CCTCCATGGG AGGGTTGGGC TTGGCCGGGG CTGCCCGGTG CCTCCTCTTG GCTGGTCCCT CGTTGTCCTT GGGCCCCGC TCCCGCTGCT CGGCCTCCGT GTTCTTTGGC CTCTTGCTCC GCCTGCTGC TTGCCCTGC TTGCGTTTC CCCGGCTGG GGGGCCCGC CCGGGGGGG CTCCGCTCCT CCCCGGCTGG GGGGTCCTG TCTCCGGGC CTGCGGCTCG CGGGCTGGGG GCTGCGTGCG CCGCGCGGGG CGTCCGCGGT GGGTGGCGCT GTCCGCCGT GGTGTGTCC CTGCGCCGT CTGCGCCGT GTTCGCCCGT GGGGCTTCGG GCTCGGGGCT TGTGGCCCC CCTGCGCGC CTGCGCGCT TGTGGCCTC GGGGCTCCT GTTTCGCC CTTCGGGTT CCTTCTCGGC GGGTCCCCG GGGTCCCGG CCTTCTGGC CCTTCTCGGC CCTTCTCGGC GGGTCCCCG GGGTCCCGG CCTTCTCGGC CCTTCTCGGC GCTTGTCTCG GGTTTCTGGC CTCTGTGCTG GGCGCTTCTC TGCCTCCTGC TCCGCCCTCC TGGTGGCTCG GCTGGGGGGTG CCCGTGCGGG GGTGGGTGTG GGGTGTTTTC GGGGTCCTCC CCTTCCC GTT TCA TCT TGG CTT TAT CCTCT CCC CTT GTT CCT CCC TGG GCC CTT CCC TGG TGG GGA GTT TCA TCT TGG GTT TCB TCT TGG CTT TBT CCTCT CCC CTT GTT CCT CCC TGG GCC CTT CCC TGC TGG GGG GGB GTT TCB TCT TGG GGG GGB GTT TCB TCT TGG CTT T CCGTGTTGTC BGTGGTGCTG CCCGTTTGBG GTBTGGCGCT CCBCCBBTTC CCTTTTCTCC TTGTTTTCCG TTTCTCTTGC CGTCTGTGGT T GCTCAGCCTC CAAAGGAGCC AGCCTCTCCC CAGTTCCTGA AATCCTGAGT GTTGCCTGCC AGTCGCCATG AGAACTTCCT ACCTTCTGCT GTTTACTCTC TGCTTACTTT TGTCTGAGAT GGCCTCAGGT GGTAACTTTC TCACAGGCCT TGGCCACAGA TCTGATCATT ACAATTGCGT CAGCAGTGGA GGGCAATGTC TCTATTCTGC CTGCCCGATC TTTACCAAAA TTCAAGGCAC CTGTTACAGA GGGAAGGCCA AGTGCTGCAA GTGAGCTGGG AGTGACCAGA AGAAATGACG CAGAAGTGAA ATGAACTTTT TATAAGCATT CTTTTAATAA AGGAAAATTG CTTTTGAAGT AT ATCCTTTAAG TCAATGGACT TTGCATCAGT CACACCATCT TTTGTTACTT TGGACTICCC CAGCTATGTT CAATAATTAC TGTTCTTCCC TTGGGCCCCA TTGTAATGGC TACAGCCTCG ACAAAAAGTC TACACTTTGA AGCATTAAGG CTCGGACATC AGCACCAAAT TTTACATCTT TACCATCACT TCAAGTGAGG TGAGGAGCCA GTAGCCTGGA CACTGGTCTC ATCTGGTGAA AGACTGTGGG TAATGGAAGC ATTTCTGTGG GGTGCTGGCA GGACATGTGC ATGGCGAGGC AGGTCATCAG CAGCAAGTGA GAGCTGCTC TTACTTTCTA AAGGTGACAT AGCAAATATA CAAAAAAAAA TAAATAAATT ATTAATTTAG GTAGAGCACA TAAAGGCTTT ATTTCATATT CCATTTCTCT GTATGCTTTC TTCACCAGGA 25 AGAATAGIT TIAGTGTCAG GAATGAATGA GTCTGCCCT CAATTCCAGC CTGCTCAACA CACAAGGAAA CAAAGCCCTG
ACAATCAGAG TGACTCCCTG GTGACTAAGC TCCCAGTCCT GGATGCATA TTGTTTAGCA GTTCTGACAG CATTTGACCC
AGCCCTCTC CTGCATATCC CATCAGAACC TTCTTTTTT TTTTTTTCTT TGAGACTGAG TCTTGCTCTG TCGGAAGCGA
CTCCTGTGCC TCAGCCTCC AAATACCTGG AATTATAGGC GTAAGCCATC ATGCCTGGCT AATTTTTGTA TTTTTCATGG
AGATGGGGTT TTGCCATGTT GGTCAAATTG GTCTCACACT CCTGACCTCA TGTGATCCAC CTGCCTCAGC CTCCCAAACT GCTGGGATGA CAGGTGTAAG CCACCATGCT AGGCTCAGAA ATTTCCTTTT ATAAAAATGT CATTAAGGAT CTTGGCTGCA
CAATATCGTT ACCAGCTTCC TTTAAATCCA CTTCTGGCCT GCCAGGAATC AGGTTCTTCA GAACCTGACA TTTTAAATGA
AGAGGTCAGG CAGTTCATGA GGAAAGCCTC ATTGTCCCCA TGTCTCTGTC ACTGCTGCAC CCCTGAGACA TCACAGACAT GGACACTGGG GCCTGCTTGT TTCTCAAACT GCCCTTAGAT CGAAAGAGGG AGGAACCAGG ATGAATGCCA CTCATTTTCC CAAGAAAGGC CCTCTCCTGA GTGCCCGGGA TGGGGCTCTG TCCATTGCCT GGGGCCGCCA ATTGCTACTC TGGGTTACGG CACAACAGG GGTCCTGAG AGACACCAGA GACCTCACAC AGCCCTGAAA ACATGGGGCT CCTTCATAAG TGTTTCCCAT
CACCAACAG GAGACCACGT GGAGGCCTTG CAGCCCCACT CGGTGCTTCT CCACCAAAATC CCAAGGGCAG TGACGCTGAC
GTCTGTGGAA AGCAGAGAAA GCCCTGGCTC CCAAAGCCCT GAAGTCCCTG TGGAGCTGAC ATTCCCTGAG TGACGGTGTG
AATGGAAGGA ACTCAAGTGC GGGTGGTAGG CCACCTCCTG GCCCAGGCCT GGGTGAACTC TGAGGGGACA CATGTAGTCA
CAATCCCATC CTCCCATTCT CCTTCTCAGA GGAAGAAGT GGGCATCCAT CTGCCTCATC TCTCTCCCGT GGGGAAGATG GGGAGTITCA GGGGAACTIT CACATAAATI TCACCAGCTC AGATCTCCTG TGAGGATGGG GCCCACCATG CTCCCGGTGC TGCCAGAGGC CCTGAGCCCC TCCCAGGGTC CCTGGGTTTG AGCCAGCCCT GTATCATCCC CAGGAGCTGA ATGTCAGAGC AATGGATAGA ATTAGATGGA AAGAGCTCTC AATTTGACCT GAGACTGTCC CCAGATACTC AGGAAAAACA GGACGTCGCA CAGAGTGGC AGCAGGTGAG TGGCAGGTTA TAGGTCCTGA GTTTGAGTTT GTTCTCACGT GAGACAGACC CAGCCCCTCA CTCCATTCAC ACACTGGGTT TTAAATGGTG CAAGATAGGA GCAATTTTCT GGTCCCAAGA GCAGGAGGAA GGGATTTTCT GGGGTTTCCT GAGTCCAGAT TTGCATAAGA TCTCCTGAGT GTGCATTGTT CTTTGAGGAC CATTCTCTGA CTCACCAGGT AAGTGGCTGA ATTCTAACCT CTGTAATGAG CATTGCACCC AATACCAGTT CTGAACTCTA CCTGGTGACC AGGGACCAGG ACCTTTATAA GGTGGAAGGC TTGATGTCCT CCCCAGACTC AGCTCCTGGT GAAGCTCCCA GCCATCAGCC ATGAGGGTCT TGTATCTCCT CTTCTCGTTC CTCTTCATAT TCCTGATGCC TCTTCCAGGT GAGATGGCC AGGGAAATAG GAGGGTTGGC CAGCAAGACA CTCTGCCTCC AGGACTITTC TGATCAGAGG CCCTGAGAAC AGTCCCTGCC ACTAGGCCAC TGCAGGTTCA CAGGACAGGG TACAGCCCAT TGAAACCTAC TTTTAAACCT GGATGCCTAA CCTTCATTTT CTCCTTGATA TTATGAAAAT AAAATAAAAA CCATGAAAGG ATAAAAGAGG GAGAGTGGAA GGGAAGGATG GAGAAAGGGA AAAAGAAAAT TTGAGAGTAA ATCCTAAAAC AATTAATCTA ATAGATATCA TCTTGTGAAA TCCTCATTTT ACCAATCTTA TTTATGAGTC CTGGGTTTTG
TGAGAACAAT GGGGTTCTGA GAGGCACCAG AGACCTCATG TTTTCCAAAA CCTAGAACAG TATAATGAAG GAAGGCGGGG AGCCAGGGAG GCAGGGAGGC AGGGAGGCAG GGAGGCGGC AGGTGGGGAG GGAGGGACGG AAGGAGGGAG GGAGGGAGGG AGGGAGGGAG GGAGGGATAA AAAAAGAAGA ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAATT TATTICTATG GITAATIGIG GITITCAACT GIAAGITACI TGGTGTTAAT TICCTATTAA ACAATITCAG TAAGITGCAT CTTTTTATCC CATCTCAGGT CAAATACITA ACAGACTAAA TGATTTGAAA AAGCAAAAGT TTACTGGCTT GTGTGTTTA
AAATGGAGGT ATGGTGGCTT TGATATTATC TTCTTGTGGT GGAGCTGAAT TCACAAGAGA TCGTTGCTGA GCTCCTACCA
GACCCCACCT GGAGGCCCCA GTCACTCAGG AGAGATCAGG GTCTTTCACA ATCAGGTTCT ACAAAAATAA ACATCCCCCC AACCACAGCA GTGCCAGTTT CCATGTCAGA AACTTAGATC CAAATGACTG ACTCGCGTCT CATTATCATG ATGGAAAAGC CCAGGCTTGA GAAAGAAGCC CGCTGCGGAT TTACTCAAGG CGATACTGAC ACAGGGTTTG TGTTTTTCCA ACATGAGTTT TGAGTICTTA CACGCTGTTT GCTCTTTTTG TGTGTTTTTT CCCTGTTAGG TGTTTTTGGT GGTATAGGCG ATCCTGTTAC
CTGCCTTAAG AGTGGAGCCA TATGTCATCC AGTCTTTTGC CCTAGAAGGT ATAAACAAAT TGGCACCTGT GGTCTCCCTG
GAACAAAATG CTGCAAAAAAG CCATGAGGAG GCCAAGAAGC TGCTGTGGCT GATGCGGATT CAGAAAGGGC TCCCTCATCA 70 GAGACGTGCG ACATGTAAAC CAAATTAAAC TATGGTGTCC AAAGATACGC AATCTTTATC CTAGTAATTG TGGTCATTGG GTGATGTTGG TTTGGGCAGG CCATCTCTAA TATCCTTGAA ACACCTTTTT CTGCTCTCCA GGAAGGGGTC AGGGCTGCCA CAGCGGGGCT TGGAGTGCTT TCCAGGGTCA CAGGCATCTG TATTCTTTGG ATTCCTTGAC CTTCCCCATT TATTCCCGGC

ATTITICCTAA AACGTGTGCT TTGCTCCTCC TGCATCCTCC CCTTGCATGC CCTCACCTAC CCCACATCTT CCCTAAAAAA AGCAAGCCCA ACTCAAAGAC CAGTTCCCTC ATGGAATCAT AGTGGATCTG CCAAGGGAGG GGATGCCCAG TCCTCTGTTC TTCACAAGAC TCCCTTCTTC TGGCTAAGGT TTCTTATGCA ATTAT CTGCAGTGGT AAAAAGATTC TATATCTGCT GTTTGATGAA TGCAGCACCC ACTAGCCACA TAGTGCTCGT GAGCACTTGC AATGCGGCTA GGGTGATTTC AATTAACCTA AAAGAGAACA GCCACAGGGA GCATGTGGCT GCCATATTGG ATGGTGCTGC TTTGAGAACA AAATGAGAGA AATGAAGCCT CTATTTACCT TGGTTGGCGG AACACATTGA AGGGACTCTG TATTGATACC AGGCTTCAAA CTTTGGGAAG TGTACTGGCC AACTTAAACA CATCCACAGG AGAATGAAGA GGTTTGGGAA GGGACCAGAA ACCAGGCATT GAGGACAATG AGAAGAGTTT TTCAAAAGTG GAATTACTGC AAAAAGTGGA AAAATAGCCT TTGGATGGAA GTTACTGATG AGACAATTTC CATCGGTGTG AAAGCCATCT TTCCAACAGA GATCTGCAAC ATGAGAATGT ACTGTCTCCT AGGGTAGCGA TGGCCTCTTG TATTAGTCCG CTCAGGCTAC CAGATTTATC GTTTAAACTG CCCATAAACA GACCAGGCAG TTTAAACAAC AGAAATTTAT TTCCTCGCAG TCCTGGAGGC AGGAAGTCTG CGATCAAGGT GGAAGCAGGG TTGGCTTCTT CTCAGGTGTC TGTCCTTGGC TGGTAGATGA CCGCCGCCTC CCTGGGTCCT CACATGGTCT TTCCTCTGTG TGTGTCTGTC CCAATCTCTT CTTATAAGGA TGCAAGTCTT ATGGATCAGA
GCACACCCCA ATGACCGTGT TTAACTTGAA TCACCTCTT AAAGTTTCTC TCTCCAAATA CAATCACCTC CTGAGGCACT
GTTAGGGCTT CGACACAGGA ATTCTTTTCC TAGGGGATTC AGTTCAGTCC AAAACGCCTA CCAGTGGAGA CTTGCAACAT
GGCGGCCTGC TGGTCCCTCG CCAGGAATAT CACAGGCGAC TGTTCCCTGT TGCATGGAAT AGAAGGCTAT TCCAGAGTAC
TGTCTCTATT TATCAGATCT GGGATACTGG GAGAAGGGCA AAATAAAGTC CAAGTAGAAA AAAAAACTAT GAAAGTTTTA GAGAGTAACC ATAATTTCAG CCCGATGTGA AACGATCCTA GATTTCAGCT GAAATAGTGA TGTGGGAAGT GAGGGGGCCG GGATTCAAGG CAGAGGGAAC AGCGTAACTG AAGGCATGGA AGGAGGGAAG TGTAGGCTGT GTTTGAAGAG TGGCAGCTGC TTCCACATTT CTAAAACACA GGATGTGATT TTGGGGTGTG TTGAGACAAG GCAGAAAACT TGTTTGGAAA AATAACTTGA 20 CTACAAGCCA TGAGTCTGAA GTGTTTGTGT TCCCTCCTTA CAGGTGGTAA CTTTCTCACA GGCCTTGGCC ACAGATCTGA
TCATTACAAT TGCGTCAGCA GTGGAGGGCA ATGTCTCTAT TCTGCCTGCC CGATCTTTAC CAAAATTCAA GGCACCTGTT ACAGAGGGAA GGCCAAGTGC TGCAAGTGAG CTGAGAGTGA CCAGAAGAAA TGACGCAGAA GTGAAATGAA CTTTTTATAA GCATTCTTTT AATAAAGGAA AATTGCTTTT GAAGTATACC TCCTTTGGGC CAAAATGAAT CTTGTGTCTC AATTGGAAGA GCTAAAGAAG TAGGGGGTTA GGGTGCATGG GTTGGAACGT GAGACAGGTC GAACCACAAA GCCTGCCTGG AAAAGGGGAG TGACGTCCTA GGCTTCAGTG ATGTCACCTC CACTTTGTTT GATCCACAAA CCAACAGGTG ACTGATTTTG GTCAGCTCAG CCTCCAAAGG AGCCAGCCTC TCCCCAGTTC CTGAAATCCT GAGTGTTGCC TGCCAGTCGC CATGAGAACT TCCTACCTTC TGCTGTTTAC TCTCTGCTTA CTTTTGTCTG AGATGGCCTC AGGTGGTAAC TTTCTCACAG GCCTTGGCCA CAGATCTGAT CATTACAATT GCGTCAGCAG TGGAGGGCAA TGTCTCTATT CTGCCTGCCC GATCTTTACC AAAATTCAAG GCACCTGTTA CAGAGGGAAG GCCAAGTGGT GCAAGTGAGC TGGGAGTGAC CAGAAGAAAT GACGCAGAAG TGAAATGAAC TT GAATTCACAT TTCTCACCTT TTGATGTATT AAGAAAGTAT GGAGAAATAT ATCCTCTATC AAATTTTCAT GCCTTCAATA ATTTCTAATT CATCAGTCAG TGTTTTTCCA TCCTTTACTG TGATGATGCC CTTTCTTCCA AACTTTTCA TTGCATCAGA GATGATGTTA CCAATTTCTT TGTCTCCATT TGCAGAAATT GTAGCAACCT GTGCAATTTC TTCAGGTTTG GTCACAGGTT TAGACTGCTT TTTAAGTTCA GCAATTACAG CATCAACAGC TAACATCACA CCTCTCTTGA TTTCCACTGG ATTAGCACCT TTGCTAACCT TCTGGAAGGC TTATTTGGAA ATAGAGCATA CCAGTACAGC AGCAGTGATA GTGCCATCCC CCAGTCTCTC CATTTGTGTT ATTGGCAACA TCTTGGACAA GTTTAGCTCC AATGCTTTTA TATTTATCCT TTAAGTCAAT TGACTTTGCA TCAGTCACAC CATCTTTGT TACTTTGGGA CTTCCCCAGC TATGTTCAAT AATTACTGTT CITCCCTTTG GCCCCATTGT AATGGCTACA GCATCGACAA AAAGTCTACA CTTTGAAGCA TTAAGGCTCA GACATCAGCA CCAAATTTTA CATCTTTACC ATCACTTCAA GTGAGGTGAG GAGCCAGTAG CCTGGACACT GGTCTCATCT GGTGAAAGAC TGTGGGTAAT GGAAGCATTT CTGTGGGGTG GTGGCAGGAC ATGTGCATGG TGAGGCAGGT CATCAGCAGC AAGTGAGAGC TGCCTCTTAC TTTCTAAAGG TGACATAGCA AGTATACAAA AAAAAATAAA ATATTAATTT AGGCAGAGCA CATAAAGGCT TTATTTCATA TTCCATTTCT CTGTATGCTT TCTTCACCAG GAAGAATAG TTTTAGTGTC AGGAATGAAT GAGTCTGCCC CTCAATTCCA GCCTGCTCAG CACACAAGGA AACAAAGCCC TGACAATCAG AGTGACTCCC TGGTGACTAA GCTCCAGTCC TGGATGCATA TTTGTTTAGC AGTTCTGACA GCATCTGACC CAGCCCTCTC TTTGCATACC CCACCAGAAC CTTCTTTTT TTTTTTTTTC TTTGAGACTG AGTCTTGCTC TGTCGGAAGC GATTCCCGTG CCTCAGCCTC CCAAATACCT GGAATTATAG GCGTAAGCCA TCATGCCTGG CTAATTTTTG
TATTTTTCAT GGAGATGGGG TTTTGCCATG TTGGTCAAAT TGGTCTCACA CTCCTGACCT CATGTGATCC ACCTGCCTCA GCCTCCCAAA GTGCTGGGAT GACAGGTGTA AGCCACCATG CTAGGCTCAG AAATTTCCTT TTATAAAAAT GTCATTAAGG ATCTTGGCTG CACAATATCG TTACCAGCTT CCTTTAAATC CACCTCTGGC CTGCCAGGAA TCAGGGTTCT TCAGAACCTG ACATTTTAAA TGAAGAGGTC AGGCAGGTCA TGAGGAAAGC CTCATTGTCC CCATGTCTCT GTCACTGCTG CACCCCTGAG ACATCACAGA CATGGACACT GGGGCCTGCT TGTTTCTCAA ACTGCCCTTA GATCGAAAGA GGGAGGAACC AGGATGAATG CCACTCATTT TCCCAAGAAA GGCCCTCTCC TGAGTGCCCG GGATGGGGCT CTGTCCATTG CCTGGGGCCG CCAATTGCTA CTCTGGGTTA CGGAAGAAGG ACAGGGTCCT GAGAGACACC AGAGACCTCA CACAGCCCTG AAAACATGGG GCTCCTTCAT AAGTGTTTCC CATCACCAAC AGGGAGACCA CGTGGAGGCC TTGCAGCCCT ACTCGGTGCT TCTCCACCAA ATCCCAAGGG CAGTGACGCT GACGTCTGTG GAAAGCAGAG AAAGCCCTGG CTCCCAAAGC CCTGAAGTCC TGTGGAGCTG ACATTCCCTG AGTGACGGTG TGAATGGAAG GAACTCAAGT GCGGGTGGTA GGCCACCTCC TGGCCCAGGC CTGGGTGAAC TCTGAGGGGA CACATGTAGT CACAATCCCA TCCTCCCATT CTCCTCTCA GAGGAAGGAA GTGGGCATCC ATCTGCCTCA TCTCTCTCCC GTGGGGAAGA TGGGGAGTTT CAGGGGAACT TTCACATAAA TTTCACCAGC TCAGATCTCC TGTGAGGATG GGGCCCACCA TGCTCCCGGT GCTGCCAGAG GCCCTGAGCC CCTCCAGGGT CCCTGGGTTT GAGCCAGCCC TGTATCATCC CCAGGAGCTG
AATGTCCGAA CAATGGATAG AATTAGATGG AAAGAGCTCT CAATTTGGCC TGAGACTGTC CCCAGGATACT CAGGAAAAAC AGGACGTCGC ACAGAGTGGG CAGCAGGTGA GTGGCAGGTT ATAGGTCCTG AGTTTGAGTT TGTTCTCACG TGAGACAGAC CCAGCCCCTC ACTCCATTCA CACACTGGGT TTTAAATGGT GCAAGATAGG AGGAATITTC TGGTCCCAAG AGCAGGAGGA AGGGATTITC TGGGGTTTCC TGAGTCCAGA TTTGCATAAG ATCTCCTGAG TGTGCATTGT TCTTTGAGGA CCATTCTCTG ACTCACCAGG TAAGTGGCTG AATTCTAACC TCTGTAATGA GCATTGCACC CAATACCAGT TCTGAACTCT ACCTGGTGAC CAGGGACCAG GACCTTTATA AGGTGGAAGG CTTGATGTCC TCCCCAGACT CAGCTCCTGG TGAAGCTCCC AGCCATCAGC CATGAGGGTC TTGTATCTCC TCTTCTCGTT CCTCTTCATA TTCCTGATGC CTCTTCCAGG TGAGATGGGC CAGGGAAATA CATGAGGGTC TIGTATCTCC TCTTCTCGTT CCTCTTCATA TTCCTGATGC CTCTTCCAGG TGAGATGGGC CAGGGAAATA
GGAGGGTTGG CCAAATGGAA GAATGGCATA GAAGTTCTCT GTCTCTCTC ATCCCCTCC ACCTTATCCCTC
TCTCTCTCCT TCCTCTCTC TCCTCTCTC TCCTCTCTCT TCCTCTCTT TCCTCTCTTC TTCCTCTCTC TTCCTCTCTC
AGTAGACTGA ATGCCCTATT TAATTGAACC AAGCATTGCT TCCTTCAATA GAAAAGGAGT TTGAGAAACC
TCACTCGTTC TTCTAAGCCA ATATGAAGGA GCCCAGTAGT TTGTAAATAT CATCTCTTCA CTGCTTTCCA TGCTACAACC
GCTGAGACTA TGGTTGAAAC CTGTTAGGTG ACTTTTTAAA TAAAAGGCAG AAATTTTGAT TTTATCTAAA GAAAGTAGTA
TAGAATGTCA TTTTCTAAAT TTTTATATTT AAAGAGTAGA TACTGCAACC TAGAGAATTC CAGATAATCT TAAGGCCCAG
CCTATACTGT GAGAACTACT GCAGCAGACA CTCTGCCCCC AGGACTTTTC TGATCAGAGG CCCTGAGAAC AGTCCCTGCC 70

ACTAGGCCAC TGCAGGTTCA CAGGACAGGG ACAGCCCATT GAAACCAACT TTTAAACCTG GATGCCTAAC CTTCATTTTC TCCTTGATAT TATGAAAATA AAATAAAAAC CATGAAAGGA TAAAAGAGGG AGAGTGGAAG GGAAGGATGG AGAAAGGGAA AAAGAAAATT TGAGAGTAAA TCCTAAAACA ATTAATCTAA TAGATATCAT CTTGTGAAAT CCTCATTTTA CCAATCTTAT TTATGAGTCC TGGGTTTTGT GAGAACATG GGGTTCTGAG AGGCACCAGA GACCTCATAT TTTCCAAAAC CTAGAACAGT ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAATT TATTTCTATG GTTAATTGTG GTTTTCAACT GTAAGTTACT TGGTGTTAAT TTCCTATTAA ACAATTTCAG TAAGTTGCAT CTTTTTTATC CCATCTCAGA TCAAATACTT AACAGACTAA ATGATTTGAA AAAGCAAAAG TTTACTGGCT TGTGTGTGTT AAAATGGAGG TATGGTGGCT TTGATATTAT CTTCTTGTGG TGGAGCTGAA TTCACAAGAG ATCGTTGCTG AGCTCCTGCC AGACCCCACC TGGAGGCCCC AGTCACTCAG GAGAGATCAG GGTCTTTCAC AATCAGGTTC TACAAAAATA AACATCCCCC AAACCACAGC AGTGCCAGTT TCCATGTCAG
AAACTTAGAT CCAAATGACT GACTCGCGTC TCATTATCAT GATGGAAAAG CCCAGGCTTG AGAAAGAAGC CCGCTGCGGA ATACTIAGAT CCAAATGACT GACTCGCGTC TCATTATCAT GATGGAAAAG CCCAGGCTTG AGAAAGAAG CCCCTCGCGGA
TTACTCAAG GCGATACTGA CACAGGGTTT GTGTTTTTCC AACATGAGTT TTGAGTTCTT ACACGCTGTT TGCTCTTTTT
GTGTGTTTTTT TCCCTGTTAG GTGTTTTTGG TGGTATAGGC GATCCTGTTA CCTGCCTTAA GAGTGGAGCC ATATGTCATC
CAGTCTTTTG CCCTAGAAGG TATAAACAAA TTGGCACCTG TGGTCTCCCT GGAACAAAAT GCTGCAAAAA GCCATGAGGA
GGCCAAGAAG CTGCTGTGGC TGATGCGGAT TCAGAAAGGG CTCCCTCATC AGAGACGTGC GACATGTAAA CCAAATTAAA
CTATGGTGTC CAAAGATACG CAATCTTTAT CCTAGTAATT GTGGTCATTG GGTGATGTTG GTTTGGGCAG GCCATCTCTA ATATCCTTGA AACACCTTTT TCTGCTCTCC AGGAAGGGGT CAGGGCTGCC ACAGCGGGGC TTGGAGTGC GAATTCCCTG TAAGCCCTGT TACAGGGGCT GCACCCCAGA TACAACCTGA CCTOTGTCCA AGGCGGGCAA CTCAACCCTT AGATATTGAA TGGGTCCCAT GGCACCAATG CTTAAACACC AGCAGCCCTC ACAACCACAG ATCGTGTTTT AAGGATGAGG AGGTAGTTCT CTGGATGCAC AGGCTTCAAT CCAAATGGGC TCATGACGCC GCAGCACACA CCCAGTCTGC AGCCTGAAGA GTTGGAGCAT TGCATTCACA GAAAGCATCC AGACATGATC ATGGGCTCAG GGATACACCT GTTCTCCGAT GTGTACCAGT GAAGGATGGA AACTOCTATG CCTCCAGAA AGCACCACTC AAGCTTTTGC TGAATGCTTC TCTGAAGGCC CACAAGGCTG AGAGGCTGTG
CAACACCAGC AGTAAAGTGA ATGCCCAGAC TCCCACCTCC TTTCTTGGGT GGCCATCTGG AAAGGCCACT CCCACCCTGA
TGGCTAATGC CTCAGACCAG TTCTTGGCCC AGATGATCCT AGACAATTGT TTAAGCTTAA ACTGTTCATT GGCCAAGCAA
ACAGGTGATA GTACCTCTGG GGAACCACAT GCCGCGTGTA CATCCAGATC TCAGGAGAAC CCAAAAATGT CTGTTCCACA TAGCAACAGA AGCCCAGGTA GCACTCAGTC TCACCTGGT GTTCTCCAAC ATCCCAGCTC AGCCAAATGG CTTTCATTAG
TTTTTATGGT TAGACCCCAG GTCCTCGGGA CACTGCTTTA GAAACACATT CCAAATCCTC CTCTGTGTGC AGGTGGCATT
CCTATCCCAA TCTCTTTGCA GGGCGTATAC TGTGATACGC AGCCAGGCTG TCCCAGAGGC CTTAAATATT CCCTTGGTGC
AGGTAGTTCA GCTTAGCCAC AGCCAATGCA TCACAGGGTC AACTGTGTTA GGAGCCATTG AGAATCCATA GTTGGTTGCT
GCCTGGGCCT GGCCAGGGCT GACCAAGGTA GATGAGAGGT TCCTCTGTGG AGTTCTACTT TAACCTCACC TTCCCACCAA 30 ATTICTCAAC TGTCCTTGCC ACCACAATTA TTTAATGGAC CCAACAGAAA GTAACCCCGG AAATTAGGAC ACCTCATCCC AAAAGACCTT TAAATAGGGG AAGTCCACTT GTGCACGGCT GCTCCTTGCT ATAGAAGACC TGGGACAGAG GACTGCTGTC TGCCCTCTCT GGTCACCCTG CCTAGCTAGA GGATCTGTAA GTACTACAAA ACTTAAACTT TACACTGAGT TTTCATCATT GAAGCTATGC CTCCAATCTG ACCTCTGACT GTGGGGCCGC CCCAGAGGGA CCCAGCGGGT GAATCCCTGC TAGGAACGTC TGTCCGGACC TCTGGTGACT GCTGGGGACG ATGGCTTCCA GCTAACTTAA TAGAGAAACT CAAGCAGTTT CCTTCTAAAT ACACATGTCA CATGTCCTGG TTGACATGTC CAGTAAGAAG ACTATCACAG GTCTTTGGAA CATTCTTTTG AGAGAAACCT ATTTAGGTCC TTGGTCTGTT TTTCAATCAG GTTGTTTGAT TTTTGCTATT GAGTTGTTGG AATTCCTTAT GTATTCAGAT ATTTGCCCCT TCTGCCATGT AGGTTTTGCA AATATTTTCT CTCATTTTCT GGGTTATCTT TTCACTCGGT TGATTGTTTC CTITICCTGTG CAGATGCTTT AGCGTTAAAT GAAGCCACAC TIGTCTATTT TCCCTTTTAT TGCCTGTGCC TTTGGTGTCA
TAGCCAAGAA ATCATTACCT ACATCAATGT CAAAAGCTTT ATCCTTCTAT ACACTTCTAG TAGTTTATGG TTTCAGTTGT TAGCCAAGAA ATCATTACCT ACATCAATGT CAAAAGCTIT ATCCTICTAT ACACTICTAG TAGTITATGG TITCAGTIGT
TAGCATTAGG TITTCAATTC ATTCTGAGTT GATGTTCCTA CATGGTGTGA GATAAAGATT TAAATACATA CATATATAAA
ATCATGAGGT AGTGTACACT ATAAAATATAC AATTGTTAAT TGTTACTCAA GTCTAAAGTAG AGGTGGAAAT AATAAACTTT
CTTTTTTTTA CTTAAACCAC TCTGTGTCAC TGAGCTGATT TCACCTTTAG CCTGATAAAA TCATTGTCCT CTCCACCCTG
ATTCCTACAG GAGACTACTC ACCCCATAAC CTCAAAAACC TCTTCATGAG GATGGTAAGT CACCTGAATC CTGAAGTGAA
TTACTCGCTA TTCCATTGGA ACTCATATAG GACACCAGAA TCTAGACCTC CAGAGAACAG CAGGACCCAT CTCCAGAATA TAAGAAGCAT TTGTTCCCTG AGCCTGTIGA ATCAAAGTGC AATTTCTATT CITTTTIGGAA TGTTAAAAAG TGAATCATAA
TATTTAAGCA GGTGAACCA CGAGTAACAT AGCAGGGTCT TTCTTGTCAT TATTAGCTCC AACCTAGCAC AGACATTAAA
GGTACAGATG TATACTAGCA TGAAACTGGG AGAACAGGAG CATTCGAGCA ACCTTGAGAC CAATGGGCCT CTCTTATAAA
ATGCACACCT CCTCTCACTG AGATTGAGGA AGGTTTCTTG TCTCCGAGCC TTCTCCCAGT AGAGCTATAA ATCCAGGCTG
GCTCCTCCCT CCCCACACAG CTGCTCCTGC TCTCCCTCCT CCAGGTGACC CCAGCCATGA GGACCCTCGC CATCCTTGCT GCCATTCTCC TGGTGGCCCT GCAGGCCAG GCTGAGCCAC TCCAGGCAAG AGCTGATGAG GTTGCTGCAG CCCCGGAGCA GATTGCAGCG GACATCCCAG AAGTGGTTGT TTCCCTTGCA TGGGACGAAA GCTTGGCTCC AAAGCATCCA GGTGAGAGAG GCAGGCATGC AGAGCTGCTA AGTCTAGAGG GAAGGACGGG AGAGAGGTTC CAGAGTTGGG TCTCAGCAGT CTATGTCACT GAGGTGGCTT CACTTAGAAT CTCTGGGCAT TGATTTTCTC ATCTAGAAAT TGAACAGAGA GCCAAATAAA CCTGAGAAAC TTTATTTCTC CAAAGACTTG ATTCCAAGAA ACATCTGTGA AATTCACTAA GTTTAAGATA TGAAGAGACA GACTAGTTAT TTCTGGATCT AAACAAGTAG ACTTAGTTGT AAAGAGAACA TTTTACTCTA TCTACAGAAG AGCTTTTAAA AACTGCAGCC AAGCCTGAGG GTAAGTTCAG GTGTGTGT GATGGGGCAG GAATGCAAAA ATGAGAGCAA AGGAGAATGA GTCTCAAATT CTGTGTGACA AGCACTGCTC TGCGTGTTTA TTCCTATCGA CTGAGGTTGT TCGTGCTACC GGCTGCAATG CAGCCAGCAT CACCTGTCAG CTAGCATGTG ACTTCCCCGA GATTCTTTTT CTTACCCACT GCTAACTCCA TACTCAATTT CTCATGCTCT CCCTGTCCCA GGCTCAAGGA AAAACATGGA CTGCTATTGC AGAATACCAG CGTGCATTGC AGGAGAACGT CGCTATGGAA CCTGCATCTA CCAGGGAAGA CTCTGGGCAT TCTGCTGCTG AGCTTGCAGA AAAAGAAAAA TGAGCTCAAA ATTTGCTTTG AGAGCTACAG GGAATTGCTA TTACTCCTGT ACCTTCTGCT CAATTTCCTT TCCTCATCTC AAATAAATGC CTTGTTACAA GATTCTGTG TITTCCACCTC TITAATGTGT GATATGTGTC TGTGTCAAGA CACTTGGGAT ACACGTACCA AAACGCAAAA
TCAAATTTTT GAACAATATA CCTACCTTGC TATAGAAGAC CTGGGACAGA GGACTGCTGT CTGCCCTCTC TGGTCACCCT
GCCTAGCTAG AGGATCTGTG ACCCCAGCCA TGAGGACCCT CGCCATCCTT GCTGCCATTC TCCTGGTGGC CCTGCAGGCC
CAGGCTGAGC CACTCCAGGC AAGAGCTGAT GAGGTTGCTG CAGCCCCGGA GCAGATTGCA GCGGACATCC CAGAAGTGGT TOTTTCCCTT GCATGGGACG AAAGCTTGGC TCCAAAGCAT CCAGGCTCAA GGAAAAACAT GGACTGCTAT TGCAGAATAC CAGCGTGCAT TGCAGGAGAA CGTCGCTATG GAACCTGCAT CTACCAGGGA AGACTCTGGG CATTCTGCTG CTGAGCTTGC AGAAAAAGAA AAATGAGCTC AAAATTTGCT TTGAGAGCTA CAGGGAATTG CTATTACTCC TGTACCTTCT GCTCAATTTC CTTT GATCAAAATT TTTACCTATT ATGCATTTGA TATATAAATA AGTATATAAA TGCACACACA GACACAGCAA TGATGGTGAA CAGTCTTCAT ACAATTATAT GGATGAATCT CATAAAATGC TGAGTTAAAG AAATCAGACC AAAGAACATA TACTGAAAGA TTCTCTCTAT ATACAAAGTT CAAAAATAGG TGGACCAATT CATGGTGGTG TTAGAAATCA GAAGAGAGGC TACCTTTGTG 70 GGGAGGGGAC AGTITAATGC CCAGAAGCGG TAAATAAGGA ATCCTCTGGG GAGTGGTAAT GATCTGGATG CTGGCTACAG
GATGTGTTGG TIGTAAAAAT GCATTTTTT ATATCTAGCT TTTTCCATGT GTATATTATA CTTCAAAGAA GTTCAGTTAA
TAATTTCTCA TGTCACTGTA GAGTAGCTCA GTTAGCCCCCA GCAAGCCTCT GGCTTAATCT TGTTTTACCT TAAGCCATCA

	•							
	GTCATTTACA	AGTAGGAAAA	TTCACAGGGA	AAGTTAGAGT	ATAAAATCCA	GAATGAAGGT	TTACTGGGTA	AGAGTCTCTC
			TITCTTGATT					
			CACCTGATAC					
_			TTCCTACCAG					
5			AATAGTCTGA					
			TGAGCCCCTA					
	CCCTGAGAAG	TGCAGACCAA	AGCCAGGGAA	GGCTCTGCAA	AGATGTACAA	ATGGAAGTCA	CCTTAATAAC	CTCTGACTGC
			CAAAAGAGGG					
			AAATCCACAA					
10								
10			GATTGAACCT					
			ACTATAAAAA					
	GACTTCATGA	CAAGACACCA	AAAGCAATAG	CAACAAAAAC	CAAATTGACT	` AATGAAACTA	ATGAAACTCT	TTAGTTGTAC
	AACAGATAGT	TTATCTGTAC	AACAAAATAA	ACTATCAACA	GAGTAAACAA	CCTACAGAAT	GGAAAAATTT	TTTGCAAACT
	ATGCATCTGA	CAAAGGTCTA	ATATCCAGAA	TCTATAAGGA	ATTTAAACAA	ATTTACAAGC	AAAAAAATGA	CCTCATTAAA
15			CAGATGCTTT					
13								
			TACAAATCAA					
			TGGTGAAGGT					
	TCAGCCATTG	TGGAAGAGAG	TGTGGTGATT	CCTCAAAGAA	TGTAAAACCG	AACTGCCTTT	CAATCCAGCA	ATCCCATTAT
	TGGATATACA	CCAAAAGGAA	TAGAAATTGT	TTTACCGTAA	AGGCGCATGC	ATGCATATGT	TCATTACAGC	ACTATTTACG
20			TCTAAATGCC					
20			AAAATGAACA					
			ACAGAAAGCC					
			ATAGACATGG					
	CATAGGACAC	TGTGCTTATT	ACCTGGGTGA	TGAAATAATT	TGCACACCAA	ACCCCTGTGA	CACACAATTT	ACCTATATAG
25	AAAACCTGTG	CATGTACCCC	TGAACCTAAA	AGTTAATGGT	GGGGGGGTGG	GGTTAAGCTA	CTTTGTGGTA	TAAATCTGAG
- •			ATTTACCTCA					
			TCTTTAATCT					
			CCATTTGACT					
			AGCATGGCCT					
30	AGCAAATATT	TATTTAAATA	TTCAAGATAT	GCTGTTAAAT	TTTTACTCAA	AAATTTGAGT	ACAGTATGGA	TCTTCTGAAG
	CCAAATAACT	CTTATTCAAT	GCTTAGTTGA	GAAATTTTAT	GGAGTAGTTC	TCAATTTTTA	TGTAGTTCCA	CTGCAAAGGT
	AAGTCTTATG	GAAAGATTCA	CTGTAATTTT	TTTTCCTCAT	TTGGACATCA	GCTTTTTCTT	TTCCTCAGAC	CCGCTGAAAG
			CTTGTTTTTA					
			TTTTTAAAAT					
25								
35			GCTTAAAGAT					
			GTTTTTAATA					
	CTTTAACATC	TTGCCTTTAC	TTTATAACAT	TTATCACAGC	AGTCATGAGA	TAATGATTTA	CATGGTCATT	GTTAGTAAGC
	TAATAGCTAA	GTGCATGAAC	TCTGGAGCTA	GCCTCCCTGG	ATTTTAATCC	CAGATCTGTC	ACTGACCAGC	TGAGCAATAC
			CTTAGTTTCT					
40			TATGTAGGCC					
70								
			CCTACCACTA					
			TTCAATAGTT					
	AGAAATACCC	ATTTACTGCA	AGTGTGTCTA	ATATTGATGG	CATAATGGGG	GAAACTCAAA	CTCTGGAGTC	AAACAGGTTT
	TAAAACCTTA	TTCCCTCATC	CTCAGTTATT	GACGTTTTTT	TTTTGGCAGG	TGTGTGTGTG	GGACAACTTA	TTGAACTTTT
45	CTGAATTTCC	AGCTTCGCAT	ATATAAAATA	GAGATAGTGA	TTCATTCTTG	CAATGTATGG	ATTTGAGACA	ATTGTGTAAG
			ATTITTGTAT					
			ACATAAATGG					
			AATTATCCCT					
			GAAACCATCT					
50	TGGGACCTGG	GTTTAAGCAT	TTTAAATGCC	AAGTTCACCA	TTTTCTAAAA	CACAACAAAT	ACCCAGTGAG .	AGAGGGAGAA
	GGGAAGTAAA	TGCCTCTGAA	TAAGCAAGTT	AATGTCAGTA	GTTGTACTGT	ATGCATATTG	ATGAACAATA	GAGGAACCAA
	TGTCCAATCA	GATGAGCAGG	ATATTTGGCA	ATAACAAGTT	GCCTTTGAGG	AAAAATGATT	TTCTTGGCAA	GTTCTTTATC
			TACGCTTATC					
	CTCCTATTCT	TGATGCCTGG	TGCATGAATC	AGGACTCCAG	CCCACA AGTT	TTCCCAGAAC	TTTCTTATGG	CCATCATCTT
55								
23			ATAGTTTGGT					
			GGAAATGGTG					
	CCTGCTCTGA	GGAAGTGGCA	CAGCCTAGAA	CAGCACCACA	GGTGAGAGAA	ATGCAAACCC	TAACCAGAGA	AGCAGACTCT
	TTGCCAGTAG	TAATAGTTCA	GGACCACCAC	CAGCTTTTAT	TTTTTAAAAT	AATAACACTC	AAGTATTGGC	AGAAAGAAAT
			TAGAATATTG					
60			CTGATGTTGC					
00								
			AACTATTTTT '					
			CTCACTGAAA					
			AATGTTTTGT					
	ATCTTAATTT	AATTCTAACA	TGTATTGTGC	ACAAGCTGTG	AGCAGTTTTC	AGGAGTTAGG	TATCTGGCCA	TGACTGATTT
65			TAGAAGGGTC					
			TAGGCTGGCA					
			AGACCATCCT					
			GCCTGTAGTC					
			TCGCATCACT					
70			CAGAGGGGTA					
			TGATGCATTT					
			CCCATTAAAT					
			AAGTTTTTTC					
	AIGGITICIC	TICICIAAIC	TGTTAATATG	TARITIADIO	GGTTAGAAAT	TTCOMAIGE	AAAI IUCAUI	CATALIGUAG
75		ΔΔΔΓ1Γ1Δ(1) Δ	ILTACICICTATA	TTTATTT	GCTTCTATAT	TTGGTTGCTA	IACAGTATTA	IGITTAAGAT

	TIGTTCACAT	ATATTTGTGA	ATGGGATTGG	ACTATITTC	CTTCTTGCCG	ATTTTTATCT	GGTTTTTAAA	TTAAGGATAT
							TTTGGCTATT	
	CCCAATATAT	TTTAATTAAG	TTATTCTTAA	TGTTTTCTTA	AAAAAAAA	TTACCTACTC	TAGAGATATT	CTTTATGTAC
	TCCAGATTTT	GTCTATTTAT	ACCACTTTTC	TTTTTTCCTC	GATGAGTGTC	ATAGATGTTC	ATCTATTTTT	TTATCTTCTT
5	TGATCTTCTC	TTATTCCTTG	TTTCTATTAA	CTTCTGAAGT	TTATTATTT	CTTTTTTCCA	CTTCCTTATG	GTTTATTCTT
•	TCAATTTTTC	TCTAACTTCT	TAAGTTGGGT	GTTTAATTTT	TAGCTTGCTT	TGCTTTTTTA	GGATAAGCAT	TAAAACTACA
	AATTTTCCTT	GTTATTCTT	TGCTGCACCC	CAAATTGTTG	ATATTTCTAT	TGTCTAATTT	CTATTCAATT	AGAATACTTT
	V V V CALACALA	THECOMME	AAAAACTAAC	TTTTTAAATT	GACAAATAAA	AATTGTGTAT	ATTTATTGTG	CACAGCATAT
	CCCTTCAAA	TATATOTICI	TTOTOGALTO	COTALATTA	COTTATTAAT	CTATCCATTA	TCTCACATAC	TTATCATTT
10	UGCITIGAAA	ACCOLUMNOMO	TIGIGGAAIG	GCIAAAIIIA	CCHAHAAI	TEALATEATT	AAGCATATTC	CCATTETAAC
10							AAGCATATTG	
							ATCATTGAAA	
							GCTAATAGTT	
							GTTCTAGGTG	
	TTGTCATGTT	TAATCCTCAC	CACAATTGTA	TGAGGCAGCC	ATAATTAATT	CCACTTTACA	CATGAGGAGC	CTGAGGGTTA
15	AAAAAAAAGC	TAGCTCTACT	ATTTGTAAAG	AATGAAGCAA	AGATACAAAT	GAAGGCCCAC	ATATCCTATA	ACTAGATATT
	TAAGCATTTT	AATTCAAGCT	TTAAAACTGC	TAAATAAAAT	GTGCTCCAAT	TTCTATATTG	ACAGACATAC	CTTCCTAATG
							ACATAGTGAG	
	GCCTTCAGTC	CACCCACCTT	CTCTTTACTA	AATCACCTTT	CACATACATG	TATGAACACC	CCAGCCTCCA	AGTCCAAACC
							TGGAAAAGTC	
20							GGTTTTCTTA	
							GTCCTGAGTA	
							TACAAGCACA	
							TTATTATTTG	
							CTCATTGTCA	
25								
25							CCACAATGTT	
							CTAGAAGGAA	
							TATITITGCA	
							CAGTGGTTTT	
							TTTTTCTCAA	
30							AAAAGTTTGG	
	TATGGGTATA	TACTTTCTAA	AGGGATAGTA	ATTTCTCTAG	AATATTCATT	TAATGCTCCA	GAAGTAATTA	GCACAATTGT
	GCAAGTCTGT	GCATCATCAA	CTATACATTC	TGCCTGTTTA	CTCCAAATCC	ACATGAAACT	GATTATACAG	TCAAAGGCGA
							GCGTTAGGGT	
	ACTGCATTTC	TGAAACTAAA	CTCAGATTGC	TTTCTTTTAA	GGGGTCAGAA	CTGATTCAAA	TCTACATTTT	TAAAAGCCTT
35							TTTGGCCACA	
							CTTTCCTACA	
							TGAATACTTT	
							GGTTTACACT	
							CCGTTTATCT	
40							GTTTTCCCAG	
40							TGCCAAGGCA	
							ATTAAACCTG	
							AGCATCTCTG	
4.5							CCCTTCCAGA	
45							TACATTTTCA	
							TGTGTCCTTT	
							GAGACATAGC	
	AAAATTGCTT	TCAAGAGTGA	TTTTGTTGTG	AATTGAGAAC	TGGCTGCCTA	CTTTTGGACT	ACCCACTTCA	GCAAGAGTGT
	TTGAAACCAA	ATCTATTCTA	AGTAATTTTT	TATTCCCTTT	TCTCTATGGC	ATTAGACACA	CAGCTCTTTT	AAACTACCTT
50	TCGTTATCTA	TTAAACAGAC	ATTCAGTAAC	TCTATAGACA	CTGTCTAGCT	ATATGAACTT.	AGACAAACTA	ATATCTCTGA
	GCTTCAGTTT	CTTAAAATTT	AAAATGAGGA	CAATACCATC	TATGGCCGGG	GATTAAATGC	TATGAGGAAT	GTAAACCAGA
	TGTCAGGTAC	CATCTCTCTA	AAATCCAGAT	AAAATGAATT	AAAAATACTG	GCCGCAAACC	CTCTCTAAGA	GTTCTCAAAA
	TTCTCAGAGA	GCTTAATTTT	CATGCTCACC	ATAGCACCGA	TTTTCTTCTA	AATATTTTGT	TTCTACCAAA	ATATTTTGTC
	CCAATTTTGC	CTTTTATGGC	TATTTCTTCA	TATCCACTTT	CCCAAACTAA	AGAAGCAGCC	CCTTCACCTT	AAACTCCTCC
55							GTGTGATGCA	
٠.	CATGCTGTTT	AAATCCATAC	TAGTCCCCAG	AGGCCAGGCT	GCTTCTGCCA	CCCCTACCCC	TCCCGCCACA	GAGCTCTTCA
	GCTTCTCACA	TTTCTAGTTC	TTCTCTCTCT	ACTITICATTA	CCTTCTCTCT	TTTTTTTTTT	CTTCTCATGT	GCTCACGGGA
	GCAGAGAAAA	TTAACTCCTC	TAAGTTTTCT	TAACACAGAG	TGCCTTAATT	ACATATTACT	ATTGTTTGAG	TTCCTGCCAA
	CACTACGTCT	CTAGGGTCAC	ACCTCCTATA	TTAGAGGCTT	ATCAAAAAAA	GATAGCTTTC	TCCTAAAAAG	GGATTTGGAT
60	CACTACTAAG	ATAACTCCAT	CCCAAGATAA	CTTTALCOTA	ACA A ACTURA	TTATTATTAT	TATTATTATT	ATTAGAGATA
00							CAAAGTCCTG	
	GGIACTIATI	CIGICACCCA	GACIGCAGIG	CAGGGATGCA	ATAATAGCIC	ACTGCAGCCT	CAAAGICCIG	AGIICAIGCA
	ATCCTTCTGC	TTCAGCTCCC	IGAGIAGCIA	GGACTACAGG	CATATGCTAC	TOTGCCCAGC	TACTITTAAA	AAAATAATTA
	GGGATGGGGT	CITGITGIAT	TGCCCAGGCT	CGICICAAAC	TICIGGITIC	AAGCAATCCI	CCTGCCTTTT	ACCICCCIAA
	TTGTTGGAGT	TACAGGCATG	AGCCACAGCA	CTCAACCAAG	ATTTAAAAAC	TTITAAAAGA	AATCACATTA	CTTACTGTTA
65	TCATCATTAT	GGTTACTACC	AGTGTTAAAA	CAATTGGTAT	TGAAAACACC	ACTACCAGAT	CAAGCTTCAA	ACCAAGATGT
	CAAGTAAATA	TTATTGTCAG	ACCTCTGAGC	CCAAGCCTGC	AGGTATACAC	CCAGATGGCC	TGAAGCAAGT	GAAGAATCAC
	AAAAGAACTG	AAAATGGCCC	3 GTTCCTGCCT	TAACTGATGA	CATTCCACCA	TTGTGATTTG	TTCCTGCCCC	ACCTTGACTG
	AGGGATTAAC	CTTGTGAAAT	TCCTTCCCCT	GGCTCAGAAG	CTCCCCGACT	GAGTACCTTG	TGACCCCCAC	CCCTGCCCAC
	AAGTGAAAAA	CCCCCTTTGA	CTGTAATTTT	CCACTACCCA	CCCAAATCCT	ATAAAACAGC	CTCACCCCTA	TCTCCCTTCG
70	CTGACTCTCT	TTTCAGACTC	AACCTGCCTG	CACCTAGGTG	ATTCAAAAGC	TTTATTGCTC	ACACAAAGCC	TGTTTGGTGG
	TCTCTTCACA	CAGACCATGT	GACATTTGGT	GCCGTAACTC	AGATCGGGGA	ACCTCCCTTG	GGAGATCAGT	CCCCTGTCAT
	CCTGCTCTTT	GCTCCATGAG	AAAGATCCAC	CTATGACCTC	TGGTCCTCAG	ACCAACCAGC	CCAAGGAACA	TCTCACCAAT
	TITAAATTGG	GTAAGTGGCC	TCTTTTTACT	CICLIATORY	GCCTCTCTCA	CTATCCCTCA	ACATCTTTCT	CCTTTCAATC
	TTGGCACCAC	GCTTCAATCT	CICCCITCCC	TTA ATTTCAC	THUCHTHUTT	TTTCTGGTAG	AGACAGAGGA	AACGTGTTCT
75	ATCTGTGAAC	CCAAAACTCC	AGCACTGGTC	ATGGACTTGG	AAAGACAGTC	TTCCCTTGAT	GTTTAATCAC	TGCAGGGATG
, ,	AIO. VIONAC	CONMINCICE	MUMOIUUIC	ATOUACT TOO	AAAOACAOIC	LICCUITON	AICAC	DIMODOMIG
				6	7	•		
				Ţ				

_								
	CCTGCCTGAT	TATTCACCCA	CATTTCAGAG	CTGTCTGATC	ACTGCAGGGA	CGCCTGCCTG	GATCCTTCAC	CTTAGTGGCA
		TGCCTGGGTG						
		TCCATGTCTC						
-		CCTTAGCCTG						
5		AATACCGCTT						
		AGATCTAAAT						
		CTCCCTAGTC						
	TCCCAACCCC	AAGTGTCGCT	GAGTCTTTCC	AATCTTCCTT	TTCTACTGAC	CCATCTGACC	TCTCCCCTCT	TCCCCAGACT
	GCTCCTCCTC	AGGTCGCTCC	CCGCCAGGCT	GAATCAGGCT	CCAATTCTTC	CTCAGCGTCC	GCTCCTCCAC	CCTATAATCC
10		TCCCCTCCTC						
10		AGAGGTGGCT					4	
		TAGGCTTTTT						
		TGGACCCAGA						
		TCCAAAAGTT						
15	TAATAGAGTA	GAGGCAGCCA	AGTAGCAACA	. TATTTCTGAG	TTGCAATTCC	TTGCCTCCAC	TGTGAGAGAA	ACCCCAGCCA
	CATCTCCAGT	ACACAAGAAC	TTCAAAATGC	CTAAGCCACA	GTGGTCAAGC	ATTCCTACAG	GACCTCCTCC	ATCAGGATCT
	TGCTTCAAGT	GCCAGAAATC	TGGCCACTGG	GCCAAGGAAT	GCCCTCAGCC	TGGGATTCCT	CCTAAGCCAT	GTTCCATCTG
		CACTGGAAAT						
		CTCCTTCCCA						
20		ATGCTTTTGG						
20		TTCTCTTCAA						
		CCCAACTCTG						
		GGCTGAGACA						
		CAACCCAAAA						
25	ACCTCTACTC	CCTCCCTGGC	AACAAATCAC	ACCCTCATTA	CTATCCCATT	AAAACCTAAT	CACCCTTACC	TGGGTCAACG
	CCAGTATCCC	ATCCCACAAC	AGGCTTTAAA	GGGATTAAAG	CCTGTTATCA	CTTGCCTGTT	ACAACATGTC	CTTTTAAAGC
	CTGTAAACTC	TCCTTACAAT	TCCCCCATTT	TACCTGTCCA	AAAACTGGAC	ATGCCTTACA	GGTTAGTTCA	GGATCTGTGC
		AAATTGTCTT						
		TAACCCTTAT						
30		TTCACTTGGA						
30								
		CCATTACCTC						
		CCCTGCTGAT						
		CTAAAGTACC						
		GGTCATTTCT						
35	GGACAAGCCT	TTACTAGTCA	AAGCACGCAA	GCAGTTTCTC	AGGCTCTTGG	TATTCAGTGA	AACCTTCATA	CCCCTTACCG
	TCCTCAATCC	TTAGGAAAGG	TAGAACTGAT	TAATGGTCTT	TTAAAAACAC	ACCTCACCAA	GCTCAGCCTC	CAACTTAAAA
	AGGACTGGAC	AGTACTTTTA	CCACTTGCCA	TTCTCAGAAT	TCGGGCCTGT	CCTCGAAATG	CTACAAGGTA	CAGCCCATTT
		ATGGACGCTC						
		CCTACAATCT						
40		ATTTATACTT						
70		GTGGATAGAA						
		CTCTTATTCT						
		TCTCCTAGCC						
		TCAATTTACT						
45	CAATCTGGCC	TGGTATATGA	CAACATAAAA	AAAACTCAAG	GATAGAGCCA	AAAACCTTGC	CAACCAAGCA	AGTAATTATG
	CTGAACCCCC	TTGGGCACTC	TAATTAGATG	TCCTGGGTTC	TCCCGATTCT	TAATCCTTTA	ATACCTGTTT	TTCTCCTTCT
	CTTATGCAGA	CCTTGTGTCT	TCCATTTAGT	TTCTCAATTC	ATACAAAACC	GTATCCAGGC	CATCACCAAT	CATTCTATAC
	GACAAATGTT	TTAAGGGAGG	AGACCACCCC	TCATATTGTC	TTATGCCCAA	TTTCTGCCTC (CAAAGAAAGA	AGTAAAAATG
		AATGAAATCC						
50		TTATCTATAG						
-		CGCAGCCCCT						
		GAGTTGTAAG						
		CAGCTGAATA						
c -		ACAACCCCAT						
55		AATCCTGCTC						
		TTTACCACTA						
		TACATCCACA						
	GATGATATTC	CACCATTGTG	ATTTGTTCCT	GCGCCACCTT	GACTGAGGGA	TTAACCTTGT	GAAATTCCTT	CCCCTGGCTC
	AGAAGCTCCC	CCACTGAGCA	CCTTGTGACC	CCCACCCCTA	CCCACAAGTG	AAAAACCCCC	TTTGACTGTA	ATTITICCACT
60		ATCCTATAAA						
••		AAGCTTCATT						
		AAAACCCTTT						
		AAGGCCAAAG						
		ATGGTGATGG					•	
65	TTGCTGAAGT	TGAAAGAGGG	CAATGCAAAG	AACTTTGGAG	AAAGAACTGT	ACAGAGAAGT	CAACTGGCAG .	ATGGGAGGAA
	GTTTAAGGGG	AAAAATATAG	ATGTCTAAAG	AATACATTTA	TTCATTTTCC	ACAGTGCAAT	TTGGACAAGA	AGCCTCTTTC
	TTGCTTCTTT	CTATTCTCAT '	TAAATCATTA (GAGCTCAAGC	AATCCTTCTG	CCTCAGCTTC	CCGACTAGCT	AGGACTACAG
		CTATGCCCAG						
		GCACATTGAT						
70		TACTCTGAGT						
, 0								
		TCATAAATAA						
		TGCCTCTGAC						
		AATCTGAGGG						
		ATCTGTTCCA						
75	GGAAAAAAAA	. AAAAAAAGTO	TGTGTTTCAG	ATTCAGTTCA	CAAAGCAGTT	TCATACTTAA	GGTACCATCA	CAATAACCCT

GTGGGGTAAG CAAGGCAAAT TTCATTCTTG TTTTATGGGC ATAGGAAGTA AGTCTCAGGG AGGTTAAGAC CAAGGTTTCT GGAGAATTTT ATATTATGAA TCTTGATTTA TGGGATTACT ATTATGTAAT TCCTAAGATC ATATAGGAAT CCTAGAGCTT GAATATAGAA CTTTATTTT AAATCTATAT ACATCATAAT TACAAGGAGT AGTGTCCATT TGGGTTCCTT GGCCCTGATG
TGTTAGTGGA ATAAACATT TTGTCAGGGT TGCCATGTGT GTCTGTGCAC GTGTGCACTG TACACCTCCA GGGGATGTAC
CCTAAACCAC ATGAATGTGA TTTGCACATC CAAGATTTAC AGTGTACTAT AGGGAGAATC TTTTGCAACA GCTTTTGCTA TAATACAGAA TCTGAGATGT CTTTGAGAAA GAAAAGTGTA ATCATTACCA AAAAATTATT CTCATAATGT GTGCAAATTT
GTATGAAATC TATATTGGCC ATGGGACAAG GAGGTATTTC CAGCTAGCTT CTGAAAGGGC TCTATTCTCT CATAAGAATT CAGCTGTTGA CATTAGGTGA TATCTGCCCA GGTCATCAGA TGCCATAGAG AAAGAGGGTT TGCTGAAACT TATATCAGCA GTGCACTGTA TGCTCTTTCT GATTTATTTG AACATTCATT TATTGAGTGT CAAGTAATGC ACTAGATACT CCAGGGATCT GACACAAACT CTGCCCTGAA GGAGCATGTA ATCTCACTGG GGAGAAAACA AAACATATGA TAATTTCAAA ATAACAAACT AGGCAAACTA GTTAACACTT AAAAAGCAGG CTTTATTCAA ATGCAAAATT GCATGTTACA GGGTAACCTT TCAGTAAGAA GCCAGGAAGA GGAGCTCATC ATGGGTTGGA TTAGTAAAGG ACTAGTTATA AAAGAAGTGG TGGGGTTGAG GGAGGCCTGA GATGAAATTT AAAGAATATG TAGAATCTAG GTAAGTGGAT AAAAGGTCTG GGGGCAGGGG AAAGGAGAGC ATTTCATTGT GAATCAAGGA ATTTCTCCAC CTGTTTTAAC TCTTCCATAT GACATCAAAG AGATGTCACT TGCAGCTAGC ATTTCAGTGA TGTTTTCTTA CTAATAATAT CGTGATAAAA GAAACATTGA CTATAAGAAA TAGGAATGGG TCTCATAAAA GGAAACAGCA AAACCCCCAA ACTAAAAAAC AGCGCAGGCT ATTTCTCTCT TCTCTCTTT TGCTTGGCAC TCATGAGATG CTAGGTGTGG AAGTCAGCCA ACTGAAAAAG AGAGGTGGCT GAAGAAGGTG GGGAGGCTGA AGCCAGTTAA ATAGGATGGT CCAATTCACA GACGGCGAGG CTACAGTGCA AATAGGACTC TTTCAACTTG AGCAGGACCC CATTACTTCA CTGGAGTTAG AAAGAAAGGA GAGCGTAGAC TITTTGAACT TTCTATAAGA GTGTACCTCC ACAGTATACA GAAGACGACG TGAAATTTGA TCTGCAAGAA AACTGAGTCC ATATTCACAT ATGTATCAAA TTTGCACTTC ATTTAGAAGT GTCTGTCATC AAGTACAGCA CTGAATTGAA ACTGAAAACA AGAGTCAAGA AAGAGCAAAG TCAGCCATCT TTATATTCCA CATGAATCCT TTCCCTTTAT GGTCTTATTT GTITCTCCTC AGAAAAGACA AAAAGCTGAG CTGTATAAAC ACCTGTGGGC TGGGGGTTGA GGGATAAATG AGGGGCGAAA TGGAAGCTGA AGGAACTGTT GGTCAGGTAG AAATCTTCCC AGATGCACTG AAGGAAACAC ACTTCATGTT TGACGTAGGA GGTGCCACCA CACAAAACGT TTCATGGAAG GATITAAAGG ATCTCATGAT TTTTAGTATT CCAAGAATTT TCTTTCACCA AGGCGATTT AATATGGTC ATTCATACTG AAAGAAAAC AAAAGATAAT AAGAGTTAA AAATTGCAAA ACTTGGAGTG
TTAGTAGTAA AGGTAAATAT TCATTAGAGA TGAGAAGAGG AGCAAGGAAA TGCTTTCAGC TGGAAATCTC AGACAAGAGG
CCAGGCTTTA GGAACCTCTG AAGATGAACA AATGTAAGCA AACCCTAGTA GCAGCACTTC TCAGATTTTC ATGTGCTTAC
CACTCAGAGA TGGTGTTAAA ATGCAGACTC TGATTCAGTA GGTCTGAGTG GAGCCTGAGA TTCTGCACCC CTAACAAGCT
CTTTAGTGAT GCTTATGCCA CTGGCGCACA GACCCCACTT GGAGAAATTT TTGTGGTGCA TACGGTCTTT GTCTCCAGAT TATITATTIT TGAGATGGAG TCTCACTCTG TTGCCCAGTC CGGAGTGCAG TGCCACGAG GCAGCTCATG CAACCACGGC CTCCTGGGTT CAAGCGATTC TTCCGCCTCA ACTTCCTGAG TAGCTGGGAA TACAGGCACG TGCCAGCACA CCCAGCTAAT TTTTGTATTT TTAGTAGAGA TGGGGTTTCA CCACATTGGC CAAGCTAATC TCAAACTCCT GACCTCATGA TCCACCTGCC ACGCCCTCCG AAAGTGCTGG GATTACAGGC GTGAGCCACC GAGCCCAGCT GTAGATTGAT TTTGAGCAGT GGAAAGTCAA GGAATTAGAA GGCATGCTTA AATGGAAAGT GAAATTGGAG AAAATTTAAA CTCATGAAAT AGTGGTGGTT ATAAACTCGT GATAAATTAT ATCCTGGGAT ATAATTTAAT GAGATGGTAA CACATTTAGT TTAAAGAAAT AAGTGACACT TTTTTTGTGT GACACAACTG TCTTATTCTT GGAAAGGACA AGGAGAGAAT GAAATATGGT ATGTCTTCAC AGCACCTTTC AAAGGGAGAA CCAGATTCTG AGGAGCTGGT CTCATGATGA ACTGTCAGGG TAAACCACAG TTCAGCAGCT GCAAATGTGC TTGCCAAAAT AGAGACAAAA AAATGTTTCT GAAAACAAAA TTTCACATAT GCCCTCCTCT GAGGTTGGCA TCATATCTTC CTGTGTATCT TGGGTGTAGC TTCTATCCTG CCAGAATTTA GACAGTAGAA ACCAAATGAG GTGATAAACA GAGTCATTTT GCAGAAGAGT CAAAATAACC CAGCAAGAAA TGAAACCACA AATGCCCAAG GAGTCATTCA TTCACCATTC AAAAGCTAAT AGAAATGAAC ACAAACTACT ATGAAAATTC ACCCAAGAAC TTAAAAAAAA AAAAAAAGGC TCATGGTGTT TAGTGTGATA GTATTCATTT TACCTTTGAC TTGTTCTAAA AACACACCAT ACTTCTACCC CACCCTTCCT CAGTGCCGTC ACACAATGGT TTCAGTGTGA AAAAAAAAC CACGTTACTG GAAAAGGAGG GTGCCTGGGA CTTGCCACTC TAAGCTGGTA GTCAAGGGTC TTGAGTTCTA
AAAGCATACG CGTTAAGAGC ATGATTCCTG GATCCAAATG AGTATGGATC TCAGCATTGC CATTTATTGT GACCTCAGGC AAAGCATACG CGTTAAGAGC ATGATTCCTG GATCCAAATG AGTATGGATC TCAGCATTGC CATTTATTGT GACCTCAGGC TATTITATIT CTCTGTGCCT GTTTCTTTAT CAGTAATGA GATGTCATA GACCCTTCTC CCACAGACTT AAAGGCATAT TCATGATTT AAGACATGTA AACCATTCAT AACAGTATAC AACAGTATAC TAAATGTTGA TAAAAGGTTTA TGATTATTGT ACACACAAGAT CATATTCAGA CCTAGAATC TGGATTCTT ATGAATTAAT ACAGCCTTGG TCAAATAAATG AGAGCTGGGC AAATAATTCT TCTTTGCTAG GCCTTTCTAG ACCACTGGT GAAGCATTCA AGACCTTAG TCACACAAAAATG ACCACACACA TCCTCAATAA GCCATGGGCT CAAGAAAGTT CTGCTCAGTG GCCCTGAAA AATGCTTCA ACCACACAC TCCTCAATAA GCCATGGGCT CAAGAAAGTT CTGCTCAGTG GCCCCTGAAA AATGCTTTCA AATCCTACT ACCATACCAC TGCTTACACA ATTTCCTTCC TACAGACTGC CTTCCTTTCC TGCTTTCTC CATATACCTA AATCCTATCT ATTCTTCATA AGCAACCTTC TTTATAACAT TTTTCTTATAC CACCAAGCCA AATGACCTTT TCCTTCTTAAATAGCACC CATTGGCCAT TACCATGCTC TGCCTTGTAT TTTTTCTTTC TATATTCCTG TCTTAACTCC CAGCTAGGT AATAATTTC CTGAAATCAG GGACCAGGCT GACTCCTCTT GCTGTCTCAA GAAAGCTTAG CAGTTTCCAAAAAAATCA GTGAAAAAATCA GTGAAAAAATCA GTGAAAAAATCA GTGAAACAATTAATA TAGCAACTTTAATA TAGCAACTTATAATA TAG CACAAAAATG TTCAATAAAC AACTATTAAT TGACTGATTA TAAAAAATCA GTGAACCATT AAACTTAATA TAGCAATTTG CTTAGCATGG TAATTAGCTT TTTGCTAATA TTCTTCCAGC CAGTCTCTCC TCCTGTGCCT CAAGGACATC TTAAAAAAAA AAAATCTAGT TGATCTGCTT CCATCTAGTG GCAATTAAAA CAGGTGGTTC CGGTAGCCAG AAAACAGCTC TGGGTAGATT GTGCCAGAAA ATACTTTCAC TCAGTAGGTG CGAGTTTGAA AGAAATCTTC ACATCTGTGG GTTTCCTGCC ACAGACATAG GGAGACCAGC CCAGAGAAAG AAGCCTTTCC TCACTAGACT CCATTTGCAC TAGTAAAGAG AAGACAGAGT AATTAAAAAG AATAAAAAGA ACCTCCACTG ATCGTACATC CTCATCCAGT TACCCCTGCC CCACTTCTCC TTCACCAGCCA AACATTTTAA AAGAGATGAC TGCTTGTTCT GTCTCACTT TCTCATCTC AGTAATGCTC AATGCTTGGC CGTCTGACCT CTGTCTTGAT GTCTGCACTG CAAATAGTCT CCCCACTGAC ACCCTTGTTG CATCCAGGGG ATACTTACTG GTTCTCTTTGG CAATGTTTGA AACCGTTCCC CTTTCTTTGT TTCCTTGGCA TTCATTACCC CACACTCTTT CTCCTCTTCC TTCTCCCTGC CTGGCAACAT CTTTTCATTT CTCTTTCCCT TAGGTGACTT ATTAGATAAT GATGTTCCTC TGGCTCCCAT ACTCTCTCC AGGTCCTCTT CCATTCTTAA AGCACTCACA CCCTCCCTGG ATQATAGTAC CCACTCCTGA GATGGCAGTT ACCTCCTGAA ATGTGAGGGA CCCAAATCCA CTTCTCCTGC CATAGCCTCT GTGCTTTGGA TAGGTCCAAT GAGCCACAGT GAATGATGTG CATACACCCA AAGCTCAGTA CAAAACTGAA CCCATGATCT TTACCTCCAA AACCTCTCAT TCTTTTATGT TCCCTTCTCA GAAGTAAACA GGACTACCAT CCGCCAGTTT CCAGGTGAGA AAGATGATAA TTTGATTCTT CTCTCTCACT TTTAGCCAAT TAACAGACAC ATTCAGTTAA TATCACCTCC TCTTATTTCA TGAACCCATT CTTACTACTA GTTCCCTAGA CAGGCGCCAT CGGTTTTAAT CTAATAACTG CAAATGCCTC CAAAACAAGT CTCTTTGAAT CCAGGCTCAC CTGTCTCCCA CACTTGCCAT ACTGCTCTGC AGGGTGACCT TATAAGATGC CAGAGGTAAG GCTACTCACT GTTTAAACCC CTTTAGTGAT ATCCCAAAAAG ACCTCAAGAT 70 AAAGCCCATA TCACATGGCT TATACATTAG TITATGATCT GGCTTCTGGT GCCTCATTIT TCCCCACTTT TTCCTTTGCA
TTCTAAGCAA TGGCCCATAC TAAGTTTGTG ATTGGTAGGA TGGTTGCCCA AACCAGCATC CAATCCCTTC AGAAATCATC
TCACTTCATT TCTAGCATTT TAAAGGAAGC TCAGTTGTCC AGCTGGGTAC TGAATATGTC ACCAAAGTCC TCCTTTCATA

GTTTATTTTA CTTAAACTCT CCTTCCTAAA ATTCCAGAGC AAGTCACTAA ACCCTAGATA CTGAGAAATA TTTTTCCATC TTCATTTCTG CCAGGTGGGC CATCAACTTT CACATGTCTG CATCTCCTCC CACTGTGCTA TTTCTCCAGT AGAAGAAATT TGAGCTTCAA GACCAAACTG AAAAATACTT GCCTCCTTGG GGAAGCTGTA GGTAGAATTC ATGCTCCCTA TCTTTCCCAC ATTICTGAAG GACAATGCCT GTTAGAGCAA TIGAATGCAA ATAGICAATT GAATAAGCAT TTATTCATTT CTCAATAAGT GCTTGTTCAA TTGAATATT CTTAAATAAT ATATTTAAGA ACAAGAAGAA CACACCACAA TGTTTTTAAC CCTCAGAAAA AATTCTGAGG TAATCAGAAA AATCTCCCTT TACATAAACT GCCCTTTTCT AATAGGGATT ACTTGTTCGT TCATTCATTC
ATTCAGCTCC ACTAGCACCA AAAAGCACAG CTCTGAAAGG AAGCTAGTAG ATTTATCACC TTATCTGGTC ATTTGGATGA GGACCCCAGG TAAATAAACT ACTATGGGGT TAATGTGTCT AGCTAGAGCA GGAAGTAACT TAAGGAAGTA GAGAATGAAT CAGCAGATGT GGAAACTCCT CGCCACTAAT AAAACTTACC TTCTCTTGGA TTTCTTGCCT GAAAATAGAA AATAGAGAAA AGGCATTAGC AAAAATTAGA CAATTTAAAG TTTTTCAAGT AAGGGAGAAG GAAGACTCCC ACTCTCAAAA CTGTCTTTTG AAGTATATTA GGTATTTGTT AGGTGGACCC TATCTGTGTC AAAGGAGATT TGAGGAACTG GCTTAATAAA CAGTGGTAGA CACTAATACA GAACAGACAT GTTGATGCAG ATGCCTCCTG AGGTTCCATT CCATTCTCCG TGCTACTCAA GAAGACAGAA 25441 TTGCTAAATT GCCTGGTGGC AAGACCCAAT ATGTCCATTC AAGTGTTAT CCCTTCCCAA TCTGCCATC CATCACT CATCACTACT GCAGATTCTT CCCTTGAGGG ACAGCTGCTA ATACTGTAAA ACTATGTGCC ATTACAGCTC ACAGCATCAT CTCTATGAGA ATCCACAAGA GAATTTCACT TTGGTCTTGT TGGTAGGAAT TGTGCAGCCT CATCTGAGTA ACTAATGTGT TTTTATCTTA CAAACACAAG GAATATCACA TGGTTCTCCT TTGACTGGCT GTAAGGAAAC TCAGAGCTAG ATCTGAGACC CTCTCCTACC AAGTATATAA AACTTTGTGA CATACATTTI TGTGCCATAA CTTCAACCTT GGTTCCAAAT GATTTTTGTA CCCTAAGTTT
AAATTTGGCT TTCTTTTTTT TTTTTTTGTA CTCAATAAAA CATCAAGCTC ATTTATTATT GCGAAGAGCG AAACAACAAA GCTTCCACAG CGTGGAAGGG GACCCGAGTG GGTTGCCCAA ATTGGCTTCT TTTTCTTACT TTTTAATTAA TTTTAATTTG CTATACTGAA CACACTITGT ACTGTTCTCA CATTCTTTT GAAAAAAAGCA GAATATAAAT AAGTAGATAA CTTAAAAAAA
ACTCTTTGAG CAGAAAGAAT CATTTGGGAG GCAATATATT TCAGTGGCTG TAAAGTGGCA TTCTAGAATC ATCCTACCCA
GGTGAAAGCC CTATTTTGCC ACCTGTAGTG TAGTGTGTAT TTGAACAGCT ACTTTCTTTT CTAAACTACA ATTTCTTCAT
CTGTTAAAGA GGCATAATAA TTGTATCATC CTCATTGGGT TGATAAAATA AAATATTTCC AAGTATTTAG TTCAGGTCCT AGCACGTAGA CAGTGTIGCA TTACTGTTTT AATCCTTTAA AGTATTAAAG ACTACTATT GAAATCTTTT CTTCTAAAAT
TCAGCCTGCT GATGACCAAG TGCACTTGAG CAGGGGGAAT CAAATCTGAA TTAATTTCAG ATTCTGGTTA GCTTCACATA
AATATTTTTT TTAGGGATGA TGAACCTAAC AGCAATAGAT GAGTAAGAAT CTGTTCCTAC TGAGAGAGTT TCATTTTGAA
GAAAAAGGAA CTAAGGGGGC ATGTGTTCAG TTTCATGCCC TGGTCTAACC CTGTGTGTTG GTTCTGTGG GAAATCTTC CAACCGAGGA AAAAACCAGT TCACAAATCT GAAGACCAGT GATTTTAGAA GATGTATCTG GACTGGAGTC TAATCTCTGA CTCTGGGTCC TGCTGATATG GTATTTTTGA GATTTGGCCT AAAACATCAT TGCCCTGGTT TCCTTATTTA CCAAACAGGG AAGTGCTAGA GTCAGAAGAT TCATCTGAGG ACAGAAGAAT AGGGGTGAAG GCTCTAGTCA CTTCATTGGC TACCATGCTC TAAATAGTTA CCTGTGCCCT TTTTCTAACT ATTAGAACCC AAAAAGCCTA TAAATTCTCT CTCTCTCTCT CTCTCTCTCT GTGTATATAT ATACATATAC ACACACACAT AGACACACAC ACACACCTAA ACACACACAT AGAGATTTAT GACTTTTTAC TITITATCCTT GTAAATGCCA TTAACTATAT TITGTCTTAG ATTTAGCCTG GGAATGTAGC CATTATTTCT ACCATTGCCT CCATAGGAAA AATACTCTTC ATGTTTTAAA GGACCAACCT ACAACTAAAA TCTTTGGAAA GCAGAATCAT TTGTAAGTTG GTGAAAATGG AAGATGTTG TTTATAAATG AAGACTITIT TTTTTTTTTT TTTTTGAGACA GGGCCTCACT CTGTTGTGGA GTGCAGTGGT GCTGTCATGG CTTACTGCAG CCTTGACCTC CTGGGTTCAA GTGATCCTCC CACCTCAGTC TCCTGGGTAG CTGGGACTAC ATGTGCATGC TACCATGCCT GACTAATTTT TTGTATTTTT GTAGAGATGT GGTTTCGCCA TGTTGCCCAG GCTGGTCTTG AACTCGTGGG CTCAAGTAAT CCTCCTGCCT CAGCCTCCAA AAGTGCTGGG ATTAGAGGTG ACAGCCAAGG TGCCTGGCCC ACAGTGAAG ACTATTTAAT GTTATCTTTAA AGATACCCTA AGCTTCCTAC CAAGCCAAGG ATCTTTTGGG
GCTTCTGTTT TCTTTGTTGG CATAACTGTA ACTAGCCTAA CTGCCCGTTA TCTGTTTCCT GTTTGCCCCA CACTGATTCC
CACAGCAGTT TTCAAGTTAT CGGTTTGAGA TCTTGTACAG AAATGACTCC AAGGTAAAAA ATTTAAAAAC AACCCTCTA
ATTTTTTTAC CCTTGCTTAT AAAACAGCCT TAGCCAGCTA ACCCCTCACT ACATGCAAAT GAGTTTGATT CTATTCTTTT
GATTCTACAA ACACTTATTA AAAGATTTTA GAATTCGGAA ATAAATAGCT TCCTTATTAA GGTGACTTAC AGCCCCAAAG TCCTTAAAAT TATTTAGACA ATAGCCACCT TATCCCAGGG GGCAGTGTGT AATAACCCAC CCTGTTCTCT ATCCGTCAGT TCTGCCATCA TCGCCCAAGG TAGGAAGAAA GACAGGACAA CCGGGGTCAA GATTTGAAGT CTCAATGGAA AGAATAATCA GTGGTTGGAG AAAACTGTCA TCCTCTTTT GCCTTAATGC AGTACTTGAT ACTTATACTT AGTACTGTAT AGTACTGTAT AGTACTGAT ACTGATAAT ACTGATAAAT ACTGATAAAT ACTGATAAAA GTAAATGAAA TCAACAATCC CCACCCCCCT CACACACTTT GTCTTTCTGGATTGGTTAGAA AAACTTACCT AGCGCCCACT ATTCTCAAAT TTAAATGAAA GATAAGATCA GAGTGGCACG CAATTAGGGA CTGATAAAATA ATATTTTTGT AATTGCCAGT GTAAATGGAC AGGGGGCAAC CTTTACATAC CATATTCAGT GAACAGAATA CCGTACTAACT AATTTGATGG AAGGAAAATT AAAATGACAA TCAACTGAGC CCACAGAAAAG GCAACACAGA GCAGTTGGTT AGCAATIGTT TCGAGATCAT CCCTGAACTT GAAACAGGTA TATCITTTTT TTTTTTTTTT TTGAGACAGA GTCTCACTCT GTCACCAGGC TGGAGTGCAA TGGTGCGGTC TCAGCTCACT GCAACCTCCG CCTCCCGGGT TCAAGTGATT CTTCTGTCTC AGCCTCCCGA GTAGCTGGGA TTACAGGTGC CCGCCACCAC GCCTGGCTAA TTTTTGTATT TTTAGTAGAG ACAGGGTTTC ACCATGTTGG CCAGGCTGGT CTTGAACTGC TGAGCTCATG ATCCGCCCGC CTCGGCCTCC CAAAGTGCTG GGATTACAGG CATGAGCCAC CACACCTGGC CAAAACAGGT ATATCTTAAA AGCTGCCCAA TGTCCATGAA TGTTACAGCC TTGAATGGTT CTTCCAGGTG AGTTTGGCCA AATGTGGCAC CATACACCCA AGGCCTGCTG CAGGCTAGTG GGTTGCTCAC ACTTTAAAGC TGAGACACAC TCATGCCTTA AGGTAAAGGG AGTGATAATC TGGGCAGCAG ATGTTAACTT CTCAAGGCAG TCCTCCTTCT
CTTTTCCTCT CCAGTGACGG ATGTTGGAA AGCATAATG GTCCATTTGG TTAGAGCTGT GGCCTTGGTG AATAGATACT
TGGGAGAATA CATGGGAATT TCTCCCAGGG TTAATGCAAT GCCCATGTGT TGGGAACCAG GTGACTCTTG AAGAGGTCAG
GTATTTGGGA GCAGTGCCTT GAAACCTTAG TGGACATTAG ACCCACTTCC TAGTGGAATT GTAGCATTGA AATCCAAGGC
ATGTAGGCTC TTAGAGGACA GAGATAGTGT GTCATTTTTT CAGAATTAAT TAAGAGCAGG CCAGGCGTGG TGGCTCACAC CTGTAATCCA AGCCCTTTGG GAGGCCAAGG CAGGCAGATC ACGAGGTCAG GAGATCGAGA CCACTCTGGC TAACACAGTG
AAACCCCGTG TCTACTAAAA ATACAAAAAA TTAGCTGGGC ATGGTGGCAC GCTCCTGTAG TCCCAGCTAC TTGGGAGGCT GAGGTGGGAG AATAGCTTGA ACCCAGAAGG CGGAGGTTGC AGTGAGCTGA AATTGCACCA CTGCACTCTA GCCTGGTGAC AGAGTGAGGC TCTGTCTCAA AAAAAAAAA GTATTAAAGA ATTACATAAG AGCAAAGAAC CATTAGAATA TCTCACTTAG TIGITATCAG CCTAGCAAGC TGCCTTGAAG GTAATAGACA TTTTTTAAAAG TTTATCAGAT GAAAAGCGAA AATCAGCCAA CCTGTTTTAA TGAAGGTGTG TCCTGGGCTG ATTTACATGT CTCCAGGGAC TGATGGCTCT AGAATGTAAA GCTTGGCATC CTGCTTGTGT TGAATCTATC ACATTTAAATT TCCTGTGGGT TTCTTTTTTT TTTCTTTTTC ACTTTAAAGT TGTGTTCTTT TCATGTGAAG TTAAACTCAC ATACCTTTTT TTAATCTCCT TGCCAGCCAA ATGATAAATG CCAACCCAGA GAATGCAGTA ACCATGACTG CCACTGGAAT GAAGAGGGGG TTATAATCAC CCTCCTTAAT CATTGAGAAA CTTTTGTCCA ATTCTGAAAG AGAAATCAGT AAGGCACATA GCATGAGACC ACCAGCATTA TTTCCTTAGT CTATCTCATG ATATTTGACT TTTTTCCTCC TTACATCTCC CAGTAGTAGC CCATTTGATG CCATTTGACA GATGAGGAAA CTGGCATGGG AAGGCCCCTG ATGAGTCTAC

AGCATAGGCA AAGACTGGAC CAGCCTTGCT AGTCTAATGC CTACAGAATC TCAATGCCCA GATTTGTGGT TCATAGAGTT CCTGAAAATG CACCTAAAAA TGTTGGCAAG AATGGTCATC GTTGTATTTA GCTCCATGGA CTTGTTCAAT GACTGGAACT CTGAAACACA GAGAAGAGCT AAAAGCCTAA TACAACTTCA GGAAAAATAA AAGCCAATGA TCTGAACTGG ATAATTCACC AGTCAAAGGA AATCATTAAT GCTTTTACTT TAAAGCAGTT GTGCAAAAAT AAGCACTTGA TTTTTACATG CCAAGGACCT GCACTAATTT CTTTCCAATG CAGTAGTTAC CACTTCCCTC TACTTCCTTC ACGAATAAGT AAAAGGGCAT GTTTAGAGAT ACTCTTGTAA GTGTAAACTA AGTTCATTTG GGAGCCTCTA TTTGAAAATA CTGGTATAAA AAAAAATCTG TCTCCTGATA CTAACATTTG AAGGAATCTA CTTTTTTTACA TATTGGCAGA GGGTCTGATT CTATCCTTAG TTCTTCCCAT TACTTTGATG AACCTTTCA AGGTGATTTG ATCCCACAC CCAAATATAT GATTGAGAGA AGGCTCAAGT TCCCAGGAGC TCCAGACAGA AGGTACCTGT TGGCTTGATG AAGATGAGGA GGAAATGAAC ACTAGCTAGG CCTTAAAGGG AAATGTCTCT GATAGGCCTA
ATACACAGTC CTCTGCTAAA GGCCTCCCTG CCTCTCTCTG CTCATCCACT CTACTCCCTG GCCCTGGGCA CGCAGCACAC
AGAGATCAGC ATTTCTGACA GCTTCTGTAG ATCCTACCAT TTAAAGACTT TTGTCATCCA TGCAGATAGT CTCAGGAGCA GACACAGGTA GCTATTCTTT CACATGCTAG CTTAACATGC ATTTGCTTTA GCACCTATTG CCAGGCACTG TGTCAGGTGG AGGGTATACA AAGATGAACA AGACATGATT CTTCTCATAT ACAGATAGAT TTTGGAGGCA TTAGCTTAGT GATGATTCAG GAGTATCCAT TATTTGGGGA AGTAGGTGGT CATTAGTGAC CTTTTACAGG CATTTCAATG GGCTAACAGA GATGTTAGAT TGTAGTGGAA TAGAAGAATG GGTAAAAAGT AAATCAGTGA GTTCAGATTT TAGGAGTTAA GATGGCAAGA GGTGAGAACA AAAAAAGGAA ATGATTGTCA TTAAAGGAGG AGGAAAGACC AGCCAAAGAT TTTACAGTGA GTTAAGCATA CAAATTTATT
TCTAGGCCAC ATATTCTTAG CAAAACAACA TGTAAATGTT TATGTATGTC TTTCCTCATA TCTGCTCATC CATCAGCTCC
ATCGTTAAGA TTTCAGTTTT CCAGGACAAA CTTACTCACT TTGACATATT GGACTAGGAT TTGACCAGAT TCCAGATGAT TCACAAATGG TTTTCTTCTT CCCAATTAAC TCAGTTCCTT CTGAGCAGAT GAAGGTACAT GCAGAGGTAA AGCTGAAGCT GGCCAGGGGA TGGCTACAGT TCATGATCCC CAAATCTGGT GCTGATAGAG GCTCACACTG AATCACTTCA ATGAAAAAGA AAAAAAAAA AAAGACAAAA CAGTATTTCT GAGTAGAGAC CCTCCCTTGA GCAAAGGATT TTTAGCCAAA GCTGCCTGAC TACATTACIT GTGATATTGC TTCCAGGCTT TATTTTCTTG AGAATGATGG TGGGTGGTGA ATGAGAGATG AAGGCAAGGA AGCATTGAAA GCTGTGGGGA GAGGAGTAGC TACTCCAGGC TGCTGCCCTA GCTAAGGTGA CCCTCCCCTT CTGCTGGAAG TACCATGCCA TATGGCCTCT GCATCAAGGG CTCTTATGGG ATATTCTCAG AGAATCTCTG CCGTTTCATC TGTTCTGATA
TCTACCCAAG CATTTTGAAA AACATCCCAA TTCACTGAAG CAAGTCCAAC TTCCGTAAAT TCCAGTAGGT GGGTTGACAG
TTTTATAATT TCAATAAGGG ATTTTGATAG CACTTCTAAG AATTAAACTA CTTAAACTAA TGCATCAGGA GCATACTTGT AGAAAAGTTA ACCAAAACTT CGTAAGTTCA GATGACATTG GTTTTCTCCC ATATGGAGAT AAGGTTGGCA GTTAAAAATG AAAAAAAAA AAAAACCTAC CITATITCAA ACTIGAAAAG ATCAAGAGAT TGTGTTTTTG TTTTTCAGIT GTTATTCTCC TAAAAGTTTA TGCATGAGGA AAAGTAAAAG TGATTTTAAG AATAAGCCAA ATAAAACAAC CAAGAAAGAC CTCCACTACC CTGGGAAGGA AACTGGTTGG TATTAAGTAG GACACCACAT AAAACAGGTG TTATTGAGAG GAGAAGAACC AAAATGTAAC TGAGGTTCAA CAAGACATTA TITATGCAAT GGCAATGAGA AAAATAAAAA ACACAGTATA ACCATGCTGT ATTGCTATAA GTCATGTTAC ACACTGGGAG ATGGCTTCAG GGGTATTTGG TTTTTACTTT TTGTTTGGGA GGTTTTTCAA AAAAATTAAG TCATTTGAGA AACATCACAG TAGGTTAAAC AAAGTTAGGT TAAATTAGGC TCCTAAGTTT GACTTCTCAG CAAACTTCTA CTGAATGTTC TGACTGTAAG CCCAGGATTG CATGACAAAA CCTCTAGTCT GAAGTTACTC ACCTTGACAG GTTGGTTCTG GAGATGACCA GTTTCCAAAT GGTCCACAGG TGGTTTCTTC AATCCCAGTT AAGTTTGTTC CTTCAGAGCA GCTGAAGGCA CACTGTGAGC TGAAGCTGAA GTTTCCCAAA GGGTGAGTAC AGTCCATGGT ACCCAGCTCT GGGGCCTCCA AAGGCTCACA CTGAATCACT TCAATAGGGA AAGAAACAGT ATGGGGAAGA GTTAAGAGGA ACTGACGCCT GGATTTGAAT CCTAGCCCTG CCACTTGATA ACCATGTGCC TITAAACAAG GTTACTTGAA CCCTCCAACT TCAGTTTCTT CATCTATATA AGAGGAATAA TGAAATTGTG TTATCTTTAT CAAATTGATA TGGAAACTAA ATGTAATTCA ATTAGCATAA GTCAAGGACC TTAGAACAAA GCCTGACTCA TCAGAAATTC TAAGTAAACA TTAGCTAGTC TTCATATTAT TATCTTCAGC ATTATCTGTA GTGAGAATCC TTAAAGCCAA ATAGGTGTAA CTGGGAATGA CCAGCTTAGT CGGGAAATAA CTATCACATC AGAGCCCCTG AGTCTACTAG AGTATTGGGA GCAAGATGTT CAGAGAAAGA GTGGGTCTCC ATAATAAGCC TTCTTTGCAA GGAGAGAATA TAAAAGTCTA GGAAGCATTT TGACCTCAAT TCTGTCTTCT ATTCTAGCTC AGTTCCAGAA TTTTAACTCT TTTGATTTTG GCCATTATTG CTACCTTGCT CTAGAGACTT CAAGGAAGAA TGGACTCAAG GAATCAGAAG AATTTTTGTA TTTGGAAACT ATATGAGATG AGATTAGGGA GAAACATGGG AACTAAGAGA AAATGTTATC TTTTTTCATT GATTTAAAGA GTATCTATTA TATATCAAGC ATTACTCTGG GGCTTGAAGA GCTTAGATTT CACCCTGTAG GACAAAATGG TAGGTAGAAA TTAATGGGTG GATTGTCATG TATGTGTGAT GTGTTTTAAT TGCTTTTAAT TGATCAGTCT CCCTGTAGTA TGAATAATGT ATTTGAGGGG AGCTAATTTA AAATTGTGGA ACTCATCTAA TAAACTATTG CAAGAATCTA GAAGAAAGAT AATGACGGCA ATGGTAGTAG AGTTGACAAG TGGAAGACAA ATTAGAAAAA CACTAAGTTG TAAAAATTGG TAGAATGTTA CCCTGCATAA ATGTTGGGGG AGITAAGAGA GTCTCATACC AGGGTGCCCA TGTAAATGGT GATTCCACAT ACTGAGATAA GAAATACGAA GAGAAAAGCT GACTGGGAAC AATTGGTTTT ATAGTCTTTT AAACATCCCA AAGGACATCC TTAGCATATT TGAGTTCAGA GCTGGAGATA GGCTTATCAG TCCAAAGATC ACATAGATTT GTGAGTCCGC AAAAGTCAGT AAGTTTGACC AAAGGATACA TGTAGATTAG AGTCAGAAAG GCAATATACA AAAGACAAAA GCTGAGAAAT TATAGTAGTT TATGGTCCTG GATAAGTGCT CATGAAGGAT 55 CTCAGGAGAA ATGATCACAG GTAGAAAGAA TGAGAAAAGA GTGATATGAG AGAAACCAAG ACAAAGAAAA GTAAAATGTT AAAAATGAGT GAAATAGGCA TACCAATAAT TAAAAATGAG TAAAAATAGGC ATACCAATAA CATAAGGGTT AAAAAATAGA GTTCAAAAAT GGGGTGAGGG TAAAGTATTA GGAAGGAGTC ATGGCCCAGG GATCAAGTGA AATGAGTTAG ATCTATAGAT CTATTTCAGT TGGTTGACAT TTAAATGTAT TTTGGTTTTA ATTCTTTATT GTTTACAAAC ATTGCTTTTT TAAAAAATTA
AATTGTCCAA TTCAATTCAG GCTCACAAGC AAGTGCCTCA TATATACAGG CATTTTGTGG ATCCCAAAGA TGCAATGATA AATAGGACAC TTACTGATCT CAAGAAGTTT TCAGTACCAG AGGAGACGGA CAAGTGAACA GATGACTTCA ACATAAGTGG GAGAAATGAG GAAGAAATAT GTGGAGCTAT CAGAACTAAG AAAGCTTCCT AGAAGAAACT GTCTTTGAAC AATGTCTTAA AGATGACATG TTTTTTGGCC ATGTGCAAAA TGAGAGAGAA GGCCACCAGC AAAGTCAGTG TGCTACAGAG CACATGTGTT AAGTGTGGAG AACTGCAAGA AGGAAAGGAA CTACTAGAAG GAAAAAGCAA GATACTTTCT GGGTAACTCA GCCTCCTAAT AAGTGTGGAG AACTGCAAGA AGGAAAGGAA CTACTAGAAG GAAAAAGCAA GATACTTTCT GGGTAACTCA GCCICCIAAT
GATAAATGGC ATAGTTTCTT CCAGACCTTA GAGTTCTAAT TAATCTAACA AGCTCATTAG ATCGTGAGCT TCTTGAGAGG
GGGAATCTAC CATGCTAATT CCTTATGGTA ACCCTGACAG CTTTTATCCC AACACTGTGC TTCTTGTGGT ACTCAAAAAG
ACTTGTTGAG AAGTGAGTCG AAACTTCATG CTGACTTATG AAATCTTTAC GGAAAGGTAA CAATATTGTG AAAGCAGAGC
TTTCTGATCA AAACTTCCCA TTTCTCAGAG TGGCTAGTAT CATTTTGTTC CAACCAGCTT CATGATAAGC TATAATGATT
CCTGTGACTT TACCTAAGAA GAAGCAAAGA AAGGAAAGAG ACTTACCAAA CTGACACTGG GGCCCATAGT ACCCCACATC
ACAGTTGCAG GTGTAATTAT TGATGATTTC TACACATTCT CCATGGCCAC TGCATGACCA GGGCTGGCAA GAAGCTTTAG
GGGAGTCCAG AAAAAAAATTAT TTTAATGTGA TACACTTTTA GTACTCAAAG TCATTCCTTA AGACTAAAAAT TTTAACGTATA CAATCATTC TGCATGCAAT TATTTCTTGG CAATCCCTTT CTTTATAGAA ATCAAAGATT AAAAAGTCCA AATTTGCTAA

AACGGTAGAG TCCAATTTAT AAGAGACCAA ATTAACTATG GTTCATTATT AAAACATCAC TTGGAAAATG CTGGCTGTTT TGGAATTGTA GAAGATTTTA CAGAAATATT CATACACCAA AGATAGTGCA ATTTTTATAT AAAATTATAT AAGGTTAGAC CAAGAAGGAA GCACGCAGCA CCACACTCTC TACTTCACAA TGTGAAAACT GAGGTGATGT GAGCCTAAGT TTCCAACTGG CCCCAGCTGT CAGCTTCTCC TCCCCTGCCT TATTATCAAA GGCACTGATT GTCTAGCTCT TCCTCTGTAC TTCCTACGTA GATCTATCAT TITGATGTAA CTTGATTTAG GGGTATAGCT TTTGTGCACA GGGACAAATC TTACACACCA AAAATTCTTA GGAGTGACAC GATGCAAGAT TATATAGAGG GCTAGATGTA TTTTAGAATG AACCAGAAGC TGTTCTCATC CCCCCACCTT TCCATGGGGT AAATCTGAGT ATTCTCTTAA CCGTGGCCCT TCCTGAGTCT GAGGCAGCAT AGCCGTCTTG TCACTCCCTA CCTGTGTAAC AGAGGGCTGC CTTTAGTTTG TGGCAGGCGT CATCGTTCCA TTTGCCTGCA TCTTTGTTTC TCTTGATATA GATCTCCACG CAGTCCTCCT TGTTCTTCTT GTTGTTGGGC TCACCATCTC CCCAGTTCTC TGCTTCTTCA GTAAGAGATT TGTTGGTTCC CACCCACGTC CATATTCCTC CTATCTTCCG GATTCCTATC CAGTAGTAAG AACGACTGAA AGGCAGAGTC TTCTCCAGAT ACTCAATTTC CGCCTTGTTT TGTATGGCAA CTAAATCTGT GTAATTGTCT CGGCAGAATC TTCTAGCCCT TTGCCAGTTC ATGGGTTTTT CAGAATAATG GTAAGTCCAG CAGTCGGTTC CATGATGTGC CAGGAAATCT GCAAGACATC AGTGTGACCT ATGCAGACTT ACATAATGTT ACAGCTAAAA AGAACCTAGC ACTACTCCAG GCTGAGCTAG ACACTTAGAG ATGAGGAAC AGAGCCTAAG AGTGTATGTG ACCATCTCAG GATCACAGAA TAGTTGTTG CAGATTTGAA GTAGAACCTA
GACCTTCTGG CTTGAATATA AGATGCTTTT ATCTAAGGTT CTATTTGAAA CAAATTTAGT GGTTTTCTTGTA
GCTGTTAATT TTTTCTCAAA ATTATTCAG GTGAAATTTA ACCAACATAT TTTAGACATT CATATTTCTT TTTCTTTGTA
GCTGTTAATG ATTTACAACT AATTACCGTG TAATATCATA TAACTATACA ATTTACGTAT ACTTTTTAAT CCTGGAATCA
TTTCTTGAAG GCCAACACAT ATGTACCTAT GGGAGAAGACA TAATAAGGAC AGGAAGAACA GTGACATACT TTTAAGTAAC CTCTTTTACA TAAAAAACAT TTTATTTTAC CATAGGAAGA ACTGCTTCTG GAAAAGCCCA ATATACCACT CAACTCTTAT ATATCTAACT GTATAATTIT TAAAAAGAAC AATTTACAAA GCCAAATGGT ATAGGATTAT GAAAATTCATT AGATCATGTT CTATACACAA AGAGACTCAA CTGATGATGT TTAATAAACA TATGGACCCA TCAAATATGA GGGCTTTGAA GATATCTAAT TAAACACATA ATTACACAAT GACTTCATAA TAATATATGG CATTCTAAGC ATGGTATGAT CTACATGAAT CACTATTTAA 20 CACTAGAATG CAAGTTCTAA GAGGGAAAAA ACTGTTGTGT CCACTGCTGT ATCCTTAGTG CCTAGCATAA ATTTCACACA TIGTAGGGAC TCAGAAAATA CCTGTTGTAT GAAAAGAGCA CTAAGTTTCT ATGTGACACA GTGCAGACAT GGCATAAGGA ATGTGTGAAC GGGAGAGTTA GCATGTTTGC TTGGCTAGAG CTGAAAATCC AGGCTAGGGA GAAAGAAGAC ATTAGTTTAC TTAGGAAATG AAAAACCAAG TTCAAAGCTA TTGCTGGAGA GTCTTCAAGA ATCAGATATA AAATTTGTCA CAACAATGGG AGAAGGACCA AAAAATGATA AACCCCCGTC CCTTAATAAG CTCGTATTGT AATTGTAGAA ATGACATTAA TGTACACTGA ACTATGAATA AAAAATAGAA AATGAGGTGC TAAATATTTG GTACAGATTG TAAGTACCTT AACAGAGATT TCTTAATTAA CATTATTCCT TTATAATTGA GGGATTTTGT GGGGTTATTG GGATTTGAAC TCTACAGCAT GGGCTATTAT AGGTTAAAAA TAGTGTTCAG GAGTTTCTGG GGAAGAACTA AAGGTAAGAA GAAAAGAGAT GTTTACAGAA GGGATAGAAT TAACAGCTCT GTGAAATAAT TTTCCCTTAG ACTATGTATA ACTAGTGGAT ATTTAAGAAA AATGAATATA AGTAAAATAG ACTTAGCGAT ATATAAAATAT CATAACATAC CACAACAGAG CATTGTCCAC CCCCACAACT TGAAGATGTT CCATAAGTCC CTCTGGGTGC TCTGACATTT CCATGGAAAT ATCTGCAAAT GAAATACAAA ATTATATTTA GATGTATACT CTTAAACCAC ACATTTATAG CCTTTGAGGT GGTGCTTACA ACTTTCTTAA TAATCAGAAT AAAACACATA TGTCTACTAA CCCTGTCTGA GGTAACAGGT TICTCAGACA TAGATGAAAA ATTACTTCAA ATTTACATCA GAACTGATGC ACAGTTTTGT TTTGTTCTAT TTTATTTTTA
CGCTTTAGTC TCAAGTTGCT AATCGGTACT GCCCTGAATT TTTTCTATGG TTTTGTTAATT TTTATACCTG CTTTTCTGCT
GAGCTATTAG ATAAAACTAT TTAATATTTA CTATGTTATAT TTTTTAAAGT ATTGTTGCTG CTTAATTAAC TATTGATGCT
TATATTTAAT GTTATAGCCT CACTCTTGAT CATAATGGGT CAATGCCTCA AATACCTAAA AAAAAAAAA ATTAGATAGC CAGACACCAG GAAAGAAAAG TATTTCTTTT TTTAATAAAA AGAAATACCT TTTTGAGCAA CTGAAATGAC AAAGTCACAA ATTTCCTGCA CACCTTAAAA TATACTTAAT GTAAATGACG AGTTAATGGG TGCAGCACAC CAACATGGCA CATGTATACA TGTGTGACAA ACCTGTATGT TGTGCACATG TACCCTAGAA CTTAAAGTAT AATTTTAAAA AAATTCTATC TTCCAAAGCA TATCACTTCT CAGGTAGACA CAGTGTTTAT TGCAAAAGAT CTGATTTCAA TAGTATTTCT TCAAGAGTCT CCCCAGAGAC AAAGTCAAGA AGAGGAAATC AGCATATCTG AGAAGAAGA TITCAGGATC ACTITITITTG AGGGTCTGAG AAAATGTTTA
GTTTCTATAT TATTTAAAAC CAGAATTGAA ATGGGTGAT TCCTATCCTT GCCACCTGCC TCTACAACCC CAAGAGTTTC
TATCTGAGCA TCTAAACGTC TTTTAGGCTG AAAGGCTCAC CATGGCTTTG CTTGGTCCTT CTCTAGTTCT TCTGCAGCCC
ATTGAGCCTC TTGACTTAGC ACAAGGGTCT CAGGTCCTTG CCCAAAGGGA GTGTGCTGTG CTGCAGGTAG ACTGCACTGA ATGTCAACAG AAAGCCTTGC TTTCTTTCAT TTCTCTAACC CAGTCTCACA TCCTCCTCCT CCTCCCCTTT TCCCTCCCCT ATGTCAACAG AAAGCCTTGC TITCTTTCAT TITCTAACC CAGTCTACA TCCTCCTCT CCTCCCCTT TCCTCCCCT
TCCTCCTGCA CTCTCTTTCC CTCTTTCCCC ACCCCTTTCC TAGACTGGCC TCTATTGCCT CCCACTGAGA CAAAAATGAA
CTGCTGATCA GAAAGTAATG TGACTAGATT CTCTCTTCT TCCTCCTTT CTATCCTTCC TTCCATTCT CTATGCATCT
TTCCTTACCC TCCTCTCCT TCACTCATTG TTGTTGCTGT TCTTCTTCCT CTTCTTTTTC CTCCTGCTC TCTTCTTCTA
CTTGTTTTTT TGTTTGGTTC TTGTTCTCCT CTTCCTCCTC TCCTCCTCCT TCTTCTTCAC
CACCCTCCCC TATCTTTTC ATAAATGCTA AACTAACTCT TGGCTACCTG TGGTAAATGG CCCTTGGAAA TTGCAAATAC
TACAAATCAA AACTGCATTT CAGACATATT TATGATGTTT GCAAAACTTC AGTAGAGCTA AGCAGTGGAC TTGACTCGTT
TCGGTTCCTT CACCTCCGTC TTTCCTTGCT CACCACCTAG TGGACGTCCT TGTTAGTGGC ACTTCCTGAA GTTAACCCCT
GAAGAGAGCC CATGCTCTC AGCTTTTCACA ATTGAGGGTT TGGGACCTTA CAAGAACACCT TAATATTCTT GGACTATATA ATGAGATGGT TTTATAAGAC TGCATGTGAA ATTAGGACCC ATATGATGAA GGACAATAAA AAGGAAGACC CACTGATGTG AGTCAATGAG TCAAATGCAA ATCAGATTTG CATTTTTAGG AAAATAATAA TAACAACAAC AAAAACTCTG AAGCTCAGCG CCCCATATTT ATTATATTGT TTAATCTTTA TAACAGCTCT CTGCTATAGA TATGATTATT ATCCCCATTC TAAAGAGTCT CAAAGAGGTT AAGAAACAAA TTCAAAAAACT AGCGAAAGAC AAGAAATAAC TAAGATCAGA GCAGAACCAT AGGAGGTAGA GACACGAAAA AGCCTTCAAA AAATCAATAA ATCCAGGAGC TGCATTTTGA AAAGATTAAC AAAATAGATG GACCACTAGC TAGACTAATA AGAAAGAAGA ATCAATAGAC ACAATAAAAA ATGGTAAAGG GGATATTACC ACTGATCCCG TAGAAATACA AACTACCATC AGAGATTACT ATAAACATCT TTACACAAAT AAACTAGAAA ATCTAGAAGA AATGGATAAA TTCCTGGACA CATACACCCT CCCAAGACTA AACCAGGAAG AAGTCAAATC CCTGAATAGA CTAATAACAA GTTCTGAAAT TAAGGCAGCA ATTAATAGCC TACCAACTAA AAAAAGCCCA GGACCAGATG GATTCACAGC CAAATTCTAC CAGAGGTACA AAGAGGTGCT GGTACCATIC CTTCTGAAAC TATTCCAGAG AATAGAAAAA GAGGAACTCC TCCCTCACTC ATTTTATGAG GCCAGCATCA TCCTGATACT AAAACCTGGC AGAGACACAA CAAAAAAAGA AAATTTCAGG CCAATATCCC TGATGAACAT CATTGCGAAA ATACTCAATA AAATACGGCA AACTGAATCC AGCAGCACAT CAAAAAGCTT ATCAACCACA ATCAAGTTGG CTTCATCCCT GGAATGCAAG GCTGGTTCAA CATACACAAA TCAATAAACA GAATCCATTA CGTAAACAGA ACCAATCACA AAAACCACGT GATTATCTCA ATAGATGCAG AAAAGGCCTT GGATAAAATT CAACACCCCT TCATGCTAAA AACTCTCAAT AAACTAGGTA TTGATGGAAC GTATCTCAAA ATAATAAGAG CTATTTATGA CAAACCCACA GCCAATAGCA TACTGAATGG GCAAAAACTG AAAGCGTTCC CTTTAAAAAC TGGCACAAGA CAAGTATGCC TCTCTCACCA CTCCTGTTCA ACATAGTATT GGAAGTTCTG GCCAGGGCAA TCAGGCAAGA GAAAGAAATA AAGTGTATTC AAATAGAAGA GAGGAAGTCA AATTGTGTCT GTTTGCAGAT GACATGATTG TATATTTAGA AAATCCCATT GTCTCAGCCC AAAATCTCCT TAAACTGATC AGCAACTTCA GCAAAGTCTC AGGTTACAAA ATCAATGTGA AAAAATCACA AGAATTCCTA TACAGCAATA ATAGACAAAC AGAGAGCCAA ATCATGAGTG

AACTCCCATT CACGATTGCT ACAAAGAGAA TAAAATACCT AGGAATCCAA CITACAAGGA ATGTGAAGGA CCTATTCAAG GAGAACTACA AACCACTGCT CAAGGAAATA AGAGAGGACA CAAATGAATG GAAAAACATT CCATGCTCAT GGGTAGGAAG AATCAATATC ATGAAAATGA CCATACTGCC CAAGGTAATT TATAGATTCA GTGCTATCCC CATCAAGCTA CTACTGACTT TTTTCACAGA ATTAGAAAAA AACTACTTTA AATTTCATAT GGAACCAAAA AAGAGCTTGT ATAGCCAAGA CAATCCTAAG CAAAAAGAAC AAAGCTGGAG GCATCATGCT ACCTGACTTC AAACTATACT ACAAGGCTAT AGTAACCAAA ACAGCATGGT GCTGGTACAA AAACAGATAT ATGGACCAAC GGAACAGAAC AGAGGCATCA GAAATAACAC CACACATCTA CAACCATCTG ATCTTTGACA AAGCTGACAA AAAGAAGCAA TTGGGAAAGG ATTCCCCATT TAATAAATGA TGTTGGGAAA ACTGGCTAGC CATATGCAGA AAACTGAAAC TGGATCCCTT CCTTACACCT TATATAAAAA TTAACTCAAG ATGGATTAAA GACTTAAATG GAAGACCTAA AACCATAAAA ATTCTAGGAG AAAACCTAGG CAATACCATT CAGGACGTAG GTATGGGCAA AGACTTCATG ACTAAAACAC CAAAAGCAAC AGCAACAAAA GCCAAAATTG ACAAATGGGA TCTAATTAAA CTAAAGAGCT TCTGCACAGT AGAAAAAAA AAACTATCAT CAAAGTGAAC AGGAAACCTA CAGAATGGGA GAAAATTTTT GCAATCTATT CACCTGACAA AGGGCTAATA TCCAAAATCT ACAAGAAACT TAAACAAATT TACAAGAAAA AACAAACAAC ACCATCAAAA AGTGAGTGAA GGATATGAAC AGATGCTTCT CAAAAGAAGA AGTTTATGCA GTCAACAAAC ATATGAAAAA AAGCTCATCA TCACTGGTCA TTAGAGAAAT GCAAATCAAA ACCACAATGA GATGCCATCT CATGCCAGTT AGAATGGCGA TTATTAAAAA GTCAGGAAAC AACAGATGCT GGAGAGGATG TGGAGAAATA AGAATGCTTT TTACAGTGTT GGTGGAAGTG TAAATTAGTT CAATCATTGT GGAAGACAAT GTGGCGATTT CTCAAGGATC TATAACTAGA AAAACCATTT GACCCAGCAA TCCCATTACT GGGTATATAC CCAAAGGATT ATAAATCATT CTACGATAAA GACACTGCA CACTTATGTT TATTGAGGCA CTATTCACAA CAGCAAAGAG TTGGAACCAA CCCAAATGCC CACCAATGAT AAACTGGATA AAGATGATGT GGCACATATA CATCATGGAA TACTATACAG CCATAAAAA GGATGAGTTC ATGTCCTTTG CAGGGACATG GATGAAGCTG GAAACCGTCA TTCTCAGCAA ACTAACACTG GAACAGAAAA CCAAACATTA CCCATTCTCA CTCATAAGTG GGAGTTGAAC AATGAGAACA CATGGACACA GGGAGGGGAA CATCACACAC TGGGGCATGT CAGGGGATGT GGGGCTAGGG GAGGAACAGC ATTAGGAGAA ATACCTAATG TAGATGACAG GTTGATGAAT GCAGCAAACC ACCATGGCAC ATGTATACCT ATGTAACAAA CCTGCACGTT CTGCTCATGT ATCCCAGAAA TTAAAGTATA ATTTAAAAAA AGTTTAAAAA AAGAAAGTTG CCTTAGTCAC ATAACTAGTA AGAGACATGG TTGGGAATTT GAACAGAGGC CAATCAGTTC CAAATCCATG CTCTTGATCA TTAAGCTGAA CTTATGGCAG GAACTTGGAA GACATGGTAA GAACAGAGGC CAATCAGTTC CAAATCCATG CICTIGATCA TRAGGCIGAA CITATGCAG GAACTIGGAA GACATGGTAA
AATGGGGAAA AACGTGGAGC CAGGGAGACT TGTGAAAGTG CCAGTGCTCC CACTATACCC TGAAAGAAGT ATCTAGACTT
ACTITITITCT AAGTCCTCTC CTCTAATTCT CTCAATCTCT CTCTCTCTTT CTCTAAGAGA TGGGAATGCT GCTCTGTCAC
TCAGGCTAGA GTGCAGTGGT GCGATCATAG CTCATTGCAC TCAAGGGAATC CTAGGGTCTA GTGCCCCTTC TCCCTCAGCC
TCCCATGTAG CTAAGACTAC AGGCACATGC CCCAACCCTC GACTAATTTT TTTATTTTTT ATTTTTGTAG AGACAGGATC
TCACTATGTT GCTCAGGCT TAATTCTGTC TTGAAGCTTG TCCAATCAGG CTTTCAGCCA CACCAATTCC CTGAGACTGC
TCTCACCAAG GTCCTACACT TCACTAACAC AAACAGCCTA TTCTCCATCC TCATCTTACT TCACCAGGGA GCTCCTGGTT TICCTCCTAC TICACTGGCT ATTICTTCTG TATCATGTGT TGATTCTCCC TCATCTCCCC AACCTCCAAA CCCTTGGAGT ACTCCAGAGA TCACCGCTTT GCTCTTCTGT GTCTAACCTC ACTAACTTGG TGGTCCAATT CACACTCTTG ACTTTGAATA CCATTTAAAT GCGAACGAAT TCTAAATTCT GTACAACCAG AACCATTCTC CTGTAGCCAA ATGCCTACTC AACATCTCCA TCCCCAAACA AATTTAGTTG TTCAATAAGC CTCTCATATT TTACATATCC CAAACTGAAC TTCTGAATTT CTCCTCCAAT CTGTAGGGCT CTTCCCACAG CCTTTCCATC TCAGTGGATT ATAACTCCAT CCTTCCAGTT ACTCAGACCA AAACTTTTGG AGTTAACTGA GACACCTCTC TTTTTTTTCA CAAGTCATAT CCAATGTGTC AACAAATTTT GGTAGTGGAA ATATTGCGGG ATTTTTTAAG AAATCAGAGA GACCGATGGG GTTCAGGAGG ATATTTATTA TTTAGGTGCA CTGGCCAAGT CAGATTAACA TCCAAAGGAC TGAGCCCTGA ACAAAGAGTT AAGTTACCTT TTAAGCATTT TGTGGGGTGG GAGAGAGGGG TATCTGTGCA GGGGGAAGCA TACTACAGAA GTGAGAAATA AAGACAGTTA TTCAATTAAT TGAGACATGC ATTACATCAT TTCTTACTTT TCAAGAAGAA ACATGTTTTG CGACTTGAGT TTATCTGTCT AGTGACCTTG CAGCTGCACA GCTAGAGAAA CAGGGTCTTC ACAATGCCTG GGAAAGGAGG AGAGGTAAGT CTCACTAGCC ACAGAAAAAC AGGCAGTTAA TTTTTAAAAG GCTCCAGCTC
TTTCTTTC TCAGGGGGAG TTGGGTTTG TTACATACAA CTGAGTTTCC GCTTACACAT TATTTAATTT CTTTTAATTC
CTGTTCCAAA AGAAGCCAGA TACAAAAGGT TACATGTTGT CTGATTCCAT TTATATGAAA CATATAGAAG AGGTAAATCC ATAGAGACAG AAAGTAGATT AGAGGTTCCC AGGGGCTGAG GAAGAAATGG GGACTAACTG CITATAGGGT ACAGAGTTTT CTTCTGATAA AAATATTTTG GAACTAGATA GACATTTTGT TAGGCCATTC TTGCATTGTT ATAAAGAATT ACCTGAGACT TGGTAATTTA TAAAGAAAAG ATGTTTAATT GGCTTACACT TCTGCAAGCT TTACAGGAAG CATGGTGCCG ATATCTGCTC AGCTTCTGGT AAGGCCTCAG GAAGCTTACA ATCATGGCAG AAGGTGAAAG GGGAGCAGGC ATATCACATA GCAAAAGCAG GAGCAAGAGA GGGATGTGGG GAGGTGACAG TCACTTTTAA ACAGCCAGAT CTTGTGAGAA CTCATTCACT ATCATGAAGA CAGTACCAAG AGGATGGTAC TAAATCATTC ATGAGAAACC CCACCCTCAT GATCAAATCA CCTCCCACCA GGCCCCACCT CCAACACTGG GGATTACAAT TTGACATGAG ATTTGAGTGA GAACACGGAT CCAAACCATA TCAGAGATGG TGGTTATACA ATGCGATAAA CGTCACTGGA TTGTACACTT TAAGATGGTT GTTTTATGTT GTGTGAACTT CACCTCAATA AAAAAAAATA TITAATGTAC ATTCAGCCAA AAGAAGATTI GGAATAGGAA AGGTCATGGA GATATATTAA CAGCCATTIG ATGGGTGGTA AGGAAAAGAG TGGTTATTAG ACTGTTTTGT GGCCCTCAAA AGGTAGAACT AGATCGAGTT GGTGAGCATT ATAAAACCAT CACAAAACCC TGGAGAGAGG ACCCAGTGCT GAAGAACCGT TTGCCTGCCA TGAGACATGA GGGAAGTACC AGTGAATGCC ATTGAAAGCA GCATCCCTGG GTCCAAGGGA TGGTCAAAGG ACCACTACCC AACCCTTCCC TAGCCTACGC CTCCATTACA GATGACCGCA AGATTTATTT GCTCATTGCT GCCAACCAAG GCTGCACTCA CTGCAGTTGC TATCAGTTTA TCATGGGTAA CTITATAATG AGTGCCTCTT ATATATGTTT ATTCATCTGC CCTCTTGTAA AACACACAC CACACACAC CAAAGAAGAA CTITATAATG AGTGCCTCTT ATATATGITT ATTCATCTGC CCTCTTGTAA AACACACAC CACACACAC CAAAGAAGAA
ATAAAATAAC TCTGCTTCTT TGAAGCTTGT GACACTGAGA TAAACCATCT CACTGTCCTC ATTGTAGTGA CCTCTCAACT
CCTCATGCAA GATTGGCTTT GGCACCTAGT TCCTGATCTT CCTTTCCCTG TAAGCACTTC TCATAGTCTT ACGGGACTTC
ACCATCCATG GCACAACCAA TACCACAGCC CAGATCCTCA GCTCTCCAAT GACATTTTCC TCCACTAGAC TTGAGCTACC
TCCTTCCCTA GGCACACCAA TACCACAGCC CAGATCCTCA GCTCTCCAAT GACATTTTCC TCCACTAGAC TTGAGCTACC
CTTTAACCAC TGTCTCCTAT TCTTGCAAGT GTATTGCTCA AGTATCTCAT TGCAATGCTT TTTACTTCTA CCTCATTGAA
CCTCCAGGCC ATTAAACATT TCCTTATTTC TAACCATCAG GTTTCTCCTT ACTGTTTGT TTGTTTATTT GTTTCTTTT
TTTTTTTTTTT TTTGAGACAG GGTCTCACTC TGTTGCCCAG GCTGGAGTGC AGTGGTATGA TCTCGGCTCA CTGCAGCCTC
CATCTCCCTG GTTCAAGTGA TTCTCATGTC TCAGCCTCCC GAGTAGCTGG GACTACAGGT GCATGCACT ACGCCTGGCT
AAGATTTTGT ATTTTATTA GAGAAGGGGT TTTGCCATGT TGGCCAAGCT GGTCTCGAAC TCCTAACCTC AGGTGAACCA
TCTATGCTGC CCTCCCAAAG TGCTGAGATT ATAGGCATGA GCCACTATGC CCCACCTGGT TTCTCCTTAT TTATTTCAAG
TCTATGCTGC ACTATTAAAA CTCCCTTGAC AAAAATTATA ATAGTGAGAA AATTATGACA GTGAAAGAGA TCTGAAATAA TCTATGCTGC ACTATTAAAA CTGCCTTGAC AAAAATTATA ATAGTGAGAA AATTATGACA GTGAAAGAGA TCTGAAAATAA TCAACCCCCA TCTTGCCTTT ACCTTCCAGA CTGCCCTTAA TAATTCCTGA GCTTGGGCCA AGCTATCTTT GGCAGAAATT TAGTITATAG TITAAATGAT AATAGCCCTT CTCCAAAACT AAACTGCCTT TGTAAAACTA ATAAAAGACC ACCAATGAAA

GGTTAGGAGG ATGAGAGGAG CCTGAATTCT GCTAAGGTGT AGATGTAAAC AATTACCAAC TGTTATTCCG GAGGTCACAA GATTIGCAAC ATCGCCAATT ACTCCTGCAG ATAACAGCAC TATCATAGAA TCTGATTGGC CTTTTGAGAT GTCTTTTCAG ATTOTTACAT TICAACTGGT GGCTCTACCT GGACCCATCA ACAAGTCCTG TGGCTCCACC CAGAAGCAGA CTTAACATGC ACAAGGACCA TITTOCACAC CGCTATGATT GCATCCCAAC CAATCAGCAG CAACCATTCC TCTGCCTGCC AAATTATCCT TGAAAAATCT TAGCCTTAGA ATTTTGGGGO AGGCTGATTT CAGTAATAAC AAAACCCCGG TCTCCCATTT GGCTGGCTCT GCATGAATTA AATTCTTTCT CTATTGCAGT TCCCATCTTG ATAAATCACC TTTATCTGGG CAGCAAACAA AAGGAACCCA TTGGACAGTT ACACTGTTGG CAGATATATC TTGCTTCCAA AATTGGATTT TTGTTTAATG AATTTATTCT GTTTTCTTGA TATTTACAAC TGTGAATGTT GTGTCTGAAT TCTCTTTATT TCTTGTTGAA AAGAACTATA TTGCTACAGC CAGTACATAC AGATGGATAG CTAATTACTC AACACGGGGG GATGTGACCA TCACCGCACT GTGCAAATGA ATGTTACCCA TTGTCCACTT TTCCCAAACT ACATAGTGTT ATATGGTATA TGACCCAATC AACGGTGGCA AAGCTCCAGA AATACCACAT AGACATCAGG GACACTITAA ACTAATCAGC CTATAGTCCT TITTCAGTAA TITCCAAACC TGGTTGTGCA TCCAAATCAC TTGGTAACAT TAAAAAAACA AAAAAATATA CACGCAACAT TCGCTCCCAA TCCTACTGAA TCAGAATATT TTGGGTTGGT TCAGGAACAT TCAGGAGTTT TTCAGGGTCC AAGGTTTATA TAATTTGAGG TCTCTCTTTG AGAAAAGGAA CGTAAAAGCG TCTTGCTTTT ATAGATCTTA CAAAGATGTA TTACCATGTA AACACATTCC TAGGACCCAG GCCCTTGTAA TTTAAAGGTT TATCTAAGTA ATGGGCCCTG AAGCTTAATT TTCATTATCT TCAGGGCAAA TTACCTGTGG GTTAGGGTTT AGGAATATAT CTCTCTGTGT CCATGITGGC CAGGATGGTC TTGATCTCTT GACCTCGTGA TCCACCCGCC TCCACCTCCC AAAGTGCTGG GATTACAGGC GTGAGTCACC ATGCCCAGCA CTTGTGTGGA TGTTTTAAGC TCCCAGGTGA GTGAATACAA AACTAGATCT TTCCCTTCTG TAGCATCTGT ACTGTTTACT CTATGCATCT CAATATTTTT TCTTTTAGTA TCTTTCCTTT TTCTCTCTA TTACTTCCTC TIGIGCTATI TITACACCIC CTTITTTAAA AAATTITTIC CCTTITATIT CTATIGACCT TIAGCCCTCA CAATGATTCC TACAAGCCCC ATITCTGTAA ATGGGGATTG AAATAATTGC TGGACTTTTG AGAGATAGAT ATATTAAATT GCAAACTGGC AGTAGTGGGG GCAGTTGATA CATAACTAGG TTTTAAAGTC TAGCCTTCTG AGACCACTCA TTCCATTTGT GAAAAGTGAT TCTACTTCTT ATTATGAGCC AAAATATGCA TTCATTCACC CATGCATTGA TTTATTCATT CAATAAATAT TTGTTGGATG TCCACTCTGT ATCAGGAATG TGCTAGGTTC TGGGAATACA GCAATGAACA AGGTAATTTT TCCCTACCCC TAAGGAACTT AGAGTTTAGT GGGGAAGACA GACATTAAAC AAACAATTGT GCAAGTAATA ATCTATAATT ATTTATTACA ATTAAAGGAA GGAAGAGACA TATGGATTAT GAGGGCATTA AAGAGGAGAC CTAGTGTAAG TAGCCAGTTC TCGTGAAGGG ACATGTATTA GGTGTGGTAT TTTTTATAGA AATTGTCTCA CACAATTATG GAAGCTGAGA AGTCCCATGG CCTGCTGTCT ACGAGCTGAG AACCAGGAAA GCCAGTGGAA TACTTCAAAG TCCAAAGGCC CTGGAACCAA GAGTGCCAGT GTTGGAAGGC AGGAGAAGAT GGGTGTCCCA GCTTAAAAAG ACAGTGAATT CACTCTTTTT GCTCTACATA GGGCCTCAAT GGGTTGGATC ATGGCCACCC ACATTGGTGA AGGCAATCCT CTTAGTCTAC CAATTAAATA CTAATCTCTT TGGAAATACT CTCACAGACA CACTGAGAAA TAATGTTTTA TCAGGGTGAT AGAAATCTTC TGGAGTTAAA CAATGGTGAT AGCTGTACAA TCACATACAT TTTTAAAGGG TGCGTTTTAT GGAAAGTGAG TTTTATCTAA ATAAAATTTC TAAGAAAGAG ACTTAACACA GAGATAAACA TAAGCACATT
TATTGTCAAC CTTTATAGTG TTATGTCAAA TAGGTCTGAC ATAAGCTTAA ATAAATATAT ACTTTAAAAA TTATAAAAATA TTTTAAGTTA TAATTTAAAA TTCTCAATAA AACTCAAACA CAAACCACAC TGGTATTTCA CACAGCTAAT TTCTAATGCA GTTTACATAA ATATTTACAA CACTTAAACA ATTTCAAAGA AAATAACACT GTATTCCATA CATAGCCTGA TCACAGTAGT TGTTCTCTCT TATTTCCCAG AGTTTTTCTG CCCCTTTAAA AGAACCTCTG CTGTTCTGAT CCTTATCACA TCTCTGTTTT
GACTGTTGGC TTTGTTGTTG CCAGTGTTCA GCCAGAACTT CTCTGAAACT TTTTTTTCAA CACATGCTAA GTTAATGGAA
GTGTAGGAGA GTTTTGATTC TCACACTCCT CAAGGCTAGA GCAGCTTTGG CAATTACTGA CTGAGAATTT TTCATTGCCA GTGATCAACT GAAAACTGGA GATTCCTTTG GAATTGTTAA ATCTGCTTAT AAATAAACAT AAATGCTTGC TCACACAGGC ATTCCTCTCT TCCAGAGCAC CCTAACATAC AGAAGAAAAC AAATAGGGAA TAACTATTAG ACATCTTCAT TCGTTAAAAA TCTACCAGAT GACTCTTTTA CATGGTGAGT TTCTATTGTG AATTTAAAAT CTTCCATAAT ATACAAGAAT TATGTTTACA TATCATATCT GACAAACATC TTTGTAGGAA TGCAAAGCAC ATCCATCTTT CTGTATTCTT TTCCAACAAA GACATCATA
AAATTATACC TTTGTGTGTT TGCATTATG CTTTTATTAG TTCAAAACGT TTGGCCTCAT GGAAGTTTTT CATCGTGGAA
ACCACATATT TCTGAAAAAA TATCTGACAA TATACAAACC TTCCATTCAG TTTTTACTCT CCAATTCTAC CATGTTTTCA
AAAAACAACT GTAGTAAAAA CACTCAGAAC TTTATTCTGG TTAACATCAT GCCTTGCTAG GGGACAATAG TTTCCCTTTT
TGAAATAAAT TTAAAACAGA TGTAACATAA TTTGTTAATA AACAATGAGG GGGTAATCTA GAATAAGTAA CTTTTACCAT TGCCAAGATT TTACAGCGAG CAAGGGAGAG TTAGAAAAGG AATTCTGAGA TTTCAGAGTC TTGGTCTCTT CACCTTTGCT TGGAAGAAAA TATCCTTTCC CTTCATTAGC CAACACTTTC TTGATCCTGA GAGTAGGAAA GGGAACACTG AGTCTTTTCA GTTGAAGGCC GTCCTTGCCT GCTGGACTTT GATCTATTGA AGTGGTGATG GGTGTTGCGG TTTCAGCCAT AAAGGCATCT GGCATAGTAG GCAAGAAGGG CCAGAGACCC GAGGAGAGTT ATCTGTCTCT GTTAACTTCA GTGTATCCCT CTAGTTCCCC AGATGCACCT GTTTCTGTAA ATATAAACAT GCATGTCATC AGAACACTTA ATATTCTGCA TACTGATCAT GACAACAAAA TGTACCTTCT AACACAGACA CTCTCACTAG GATAGACCAT GTAGGAACAT CGAATTCTAT TCAGTTAGGA CAGTGATGAT GTCTACATAT TATACCTCTG TCAAAACCTA CAGAATATAC AACACAGCAC AGAGTGAATT CTAATGTAGC CTGTGGACAT TAATGAATAA TAATGTATCA ATATTGGCCC ATCAGTTGTA ACACTAATAT AAGATGTTAA TAACAGGGG AATTGAAGGG GTGGTGGGGA GATATGTTGG AACTCTTTGT GCTTTCTGCT CAATTTTCT GTAAACTTAA AACCGCACAC ACAAAAAAAG
TTATTTTAAT TTTTTAAAAA GTATTCAGAG GGACTTGACC TTTCCAAATT CTCTCAAAGC AGGTCGGAGT AGTTAAGAAC
ACAAATTTTA GAACCAGACT GCCAGAGTTT GAATCCTGGC TACACCACTT ACTAGCTTTG AGATTTCAGA CAATTTACTT 65 AACTICICIG TCTCATITTC TICATCIGIG TGATAAGAAA TAAAGTAACA GGCCAGGCCC AGTGGCTCAC GCCTGTAATC CCAGCACTIT GAGAGGCCAA GGCGGGTGGA TCAGGAGTTC AAGATCAGCC TGGCCAACAT GACGAAAAAA TACAAAATCT CTACTAAAAA TACAAAAATT AGCTGGGTGT GGTGGCAGGC ACCTGTAATC CCAGCTACTC AGGAGGCTGA GGCAGGAGAA TTGCTTGAAC GCAGGAGGTG GAGGTTGCAG TGAGCCAAGA TCATGCCACT GCACTCCAGT CTAGGCAACA GAATGAGACT TTAGAAAAAT TCCCAGAATA TAATAAGTGC AATGTAAGGG TCAGCTATCT TCATTATTAT TATCTATCAT AAATGAAATT ACACAATAAA GCTAGATCCG TTTCTTTCCT CTCCTTCTAC AAAAAATAAA GCAACTTTCC AGAACAATAC CCAGGTGATG ATTTCTCCCC TGCTCCCTCC CTAAGATATT GGCAAGTTTG GAGGGTTCAA GGAGAAACAG AGCATGTAGA GAAGATACCT CTCTCATAAC CATTIGIGAT ITACAAGTCT TACCTGATTC TTTTGAACTT AAAGGATGTA AGAAGGCTTT TGGTAGCTTC CATCTOATTC AAGGCTTTOG CAGCTGCTGT GGAATACATG AGAACACTAG GTAAAGCACT GTCTTCCAAC ATGAAGAGAG

AAAAATATGT GGAATGTTCA ATGGCATGCT TTGTATAAGA ATGCAACTTA CCTGGCAGGA ACAAATTTCT TTGCTGCAAA AGAAAAGACA AACAACCATT AATTCAGACT AAATGACTTT TAAGGATATA TTAAATCCAG ATACAATATG ACTTAATTCA TCAAGTGTTG CAAACTCGAT GCTTCAGGGC CTCTGTAATA ATCAGAGCAC AAGCATGGCT CTGTGGCATC TAGGGTAAAA TGCAAAGTGC ACAGCCATCC AAAGGGCATA GCAGCTTCCT AATGCCAGCA AATAGCTACG GGGTCATCTT GCCCAATTCA GCTCCCAATT TTTCATGAGA AGTCCAAAGT CTTAATTTAA ATGTGAGATT TCCTATTTTG TAAACGTCAG AACTTAACTC AAAAATGTTT TAAGTACTCT TAAACATGTA AGCCAAACAA ACCATGAGTG TAGTCAGATG TGCTTCCATA TTCCTTATGA GAGACTCTCA AATTTAAGCC TGTACTCCAA ATAAATCTCC TTAGGAAGAA TTTTATCCAT TTTCCTTAGA GTGCTCATCA TGGCAGTTCC ATTGCACAAT TCCGGGAGGC ATCATATAAT TCAACATGAA TAGCACCCCC TGGAGTTGTA CAATATTAGG CACGACTAAC ATTITATIT CCTGAAACAC TTCCCACACT GAGTTGTACT ACTAACTCTT TTCTTAATAC TTCTGCTTAA
TTATACTGCA TTTTATCCAG ATTCTAATTA TTGTTTAAAT CAGTAAGCAA GACCATGACT TATCAATGAG AAAGAAATGT ATTITCAAAA ACATTITIGA AGTACATICA TAAACTICCT CACCITTCCG TAAGCATITC CGAAGCCAGA GGAGAAATGG TGCTAATGTC AGGAGGGAGA GTCCAGCAGC AGAAAGTCCA GCTACCAAGG GAATGTTGGA CTCAGTGGGA GCTAAGGAAG TAAGAGACGA AGAAAGGTCA TGAGGAAGAA TTGATGTTAA AGTCTCTCCG TCCTGTCCCT TTGGCCTTTT TTCTGTACAT TCATTACTAG GAGCAGAAGA GCTATCTAGT TTAATACAAG AAGCAGAGAT GTGGCATTAC AGGCCTTTGA GATCTGCTCC GTAAGCGCTA CTTAGTTTTC AGCATGTAGG AAATTAGGAC CAAACCCCTT TGGGGCAATC TAGGTTCAGA AACTTTATGA AGTATTTGAC CTGTACCCTA AAAAAGTCTG CACTCAATTC TACCTTGGCA GGAAGGAACC TCTTCTGTCC ATTGTCCCTG AGATGTCAC TCAAGTTGAG TTGATCCATG TAATTCAAAT CCCTCCTCAC AGCTGAAGGC ACAAGAGGA TTGTAGGTGA ATTCTCCAAT AGGGGAATGA GCACACCTCA CCAAACCCTT CGGGGGCTGG TGGACAGCAT CGCATCTCAC AGCTGGAACA CACGAGAGAG CACTTTAGAA GTTTGTTTGC ATCTCCAGCA ATACGTTTCC CAAGGTAACC AAGTTCCCAA GCTCTCAAT AGTTCTTTTT ATCTTAAAAT AAAATAAAAA CAAAGACTGT ACCTTCACAT GTGGGCTTCT CGTTGTCCCA CTCCCCTGTG GGGCCACATT GGAGCCTTTT GGATCCCTTC AACACAAAAC CCTGCTCACA GGAGAACTCA CAGCTGGACC CATAACGGAA ACTGCCAGAA GCACTAGGAA GACAATTCAT GTAGCCTCGC TCGGGGTTGG ACACGGCTGT GACCTGGAAA GCTGAGACAT 30 CAAAATGATG GTCAGAAAAT ATTGCAGTGG AACTAGAGAG TACTTGGCGT TTGTTGAGTG AACCCAGTTC ATTCAAGCAA CACTTGGAGA ACTGAAGATT CTTTATAATT CCCTGGACAA ATGGGAAGAT GGCTGTGTTT TCTTTGAATT TCAGCCCCCT CACTGATCAT GGCACTAATT AAAAGACTAA TTAATCAGAA CATTAGTTCC TGAGCACTGT TCTTCTAACA CACAAAATAA ATTATGGTCC AAGGAAAGAT TTCACGCAGT CTGAGGACAA CATTATGGTC ATGGATGTTT ATAGATGGTG CCAAAAAGAA 35 AGAAAAGAAA GCACCCTAT AAAATTTGTC TGTTTTGCAG TTTGGTTTTT GTGTTATGTT TTGCTACTGG AAATCATTCT GTGCTGGCTT TGGCTAGGAC AAGGCCAGTG CCTGATAGTA AAAACTGCTT GTTTTCAATA TCCTTGCTCT CACTTAAAG
TGAATTAAAA TTTACTGCTT ATATATGCAT CAATACTATC TCTGTAGCTG ACACCATGCT TGAAACAGTC TCATCACTGC
TAATTATGAG CCATTTCAGA AGACAGGTGT GATGAGAGTT TTACATTCAA ATCATGTTCT CATTATTCTG CTTTCCGAAT TTICTAATAT GATTCACAAA TCTGTCTATI CCATGCTAAT GTCTACAAAG TTITATCAGC ACATCACAGT TAAAAAAAAA CAGCAAAGAA TTCATTCTTA ACACATATGA TCCTTTCCCT GGCCAAACAT TAGTTCTTT AAATGAATCT CAAAGATACG AGGGTTGCTC ATCAAATCTG ATTTCTATAG TTAAAGTGGG TATTGGTTTT TTTTTTCACT GTCCAAGTTT GAAGATGGTT GTTCTTTAAG AAAGTATAAA TCGAAGGATC TCAAGCTTAC CTTCACAAAC TGGGATTTGC TGTGTCCACT GCCCTTGAGT GGTGCATTCA ACCTGGGCTG GTCCCTGCAA CATGAAGCCT TCCTCACAGG TGAAGTTGCA GGATGATTTG AAGGTGAACT CTCCAGCAGG GGAATGGCTG CACCTCACAG AGCCATTCTG AGGCTGGCGG ACGGCCCTGC ATGTCACAGC
TGTAACAAAT ATACGCATTG ATATTAGCAC GGCCTAGAAT TAGCTTGCCC ATTTCCAGTA TGGGTTGAGA GAAAGAATGT
TCACAGTAAG TCTCCATGTG GAACAACTCT ACCTTTACAC GTTGGCTTCT CGTTGTCCCA ATTCCCAGAT GAGGTACACT
GAAGGCTCTG GGCTCCCATT AGTTCAAATC CTTCTTCACA GTCAAATGTA CAGGTTGTGT TCCATGGGAA GCTTCCAGGG TTTTGGAAAC ATTCCACGAA CCCATTGGCT GGATTTGTCA CAGCATCACA CTCAACCACT GAGGATTTTA AAGAGCACCA TGAATTITAC AGAAGAATGA TCTTTICACT TCCTATTGAG CIGGGTGCCT AACAGAGTGA GGAAGCTGCC TTCAAAGGGT AGATCCCAAA GTCCTATGTC AATTCTTAGG GACATGCACA GCCAGAATAA AAGCTTTTAT TCTTTTTCAT GGATATTCTA TCTTTTCTGA TTTCCACTTT GCCTATGCTG AGTGGTCTCT AATCTATGTT ATCATTTACG TGAGGTAAAA ATTTAAAAAA AATAGATTCC AGATTAGGAG TTATGACTAG TACTGACATA CGTAGGCTAT TCATTTATTT TAGCCCATCA GAGCCTGAAG AACTGATTIT TCTTTTTTTG GCCTCTGGTT CAGAAAGATA AAATTAAGAG AGAAAAAGAG ATACTAAGAC TGCTTGACTA TCATGGTCTT AAGTTAGTCC CATGGCTTGG AAAAGTTAAA CAGGGAAACA AGATGAGAAA TCCATTGAGA TTTCTAGAGC TTTATTGTTT TATGGTCTCC CTTACAAATC ACCAGAGCCT CAGAAACACC CATTTCAAGC ATAGAATAAA AAAACCTCTC CTTTCCCTGA AGTTTTGAAA ATGTAAGTTG AATCAAAAAA CAGAAGCAAT GAGGGATGAG TTACAGAACG TTCTGTGCAT TCTCAGAGGG ATTTACCATT GCAGGCTGGA ATAGGAGCAC TCCATTCTCC AGAGGACATA CACTGCATGG TCTCCATGCT GCTTGGCAGG TAACCCCTAT CACAGCTGAT AGAGCAGGAA GAATTGTAGC TGAAGTTTCC CAGTGGGTGA CTGCAAACCA GGCTTCCATG CTCAGGGGAT TCCAGGGCTG TACAGTTCAC AACTGAAAAA GAAACCCAAA TCAGTTCTGC TCATCTCTCA CCTTTAACAG ATAAGAACAC TGGAAACTAG AACTACAGTT TGGTTTTTTT TTTTTTTAGT TTAAAAATTT ATAAAATTTC TAATGGAATT TGTAAAAATTG ACTGTAATTC TACCCCTTTT CTTTTATTCA AGAAAATGCT GATCCATAAC AACAACAACA AAAAAGCAGT GATGACAACC ATAAAAAAGA AATATTGAGT GATATGGGGA GAGTAGTGTA ATTGTGTTTA CCTCAAAACT GTTCAAATTA TATGAACAAA CACAGCAAAC TTAGGTACCA CAACAAATTT CTTGTTACTT TTCTCACAAC TGCTAAAAAT ACTACAGTAA GCTTCCAACC AGGATGAGAA CCATTCACAA AGCTATATTT CAAATTTAAG TACTAGAATA CATTACAAAT
TTTAAAACCC TAATGCTGCA CTGTCTACTA TAGTAGCCAC TATCTGTGTG GCTACTCAAA TTTAAACTTG AATTCGTTGA
AATCAAATAA CATTTAAAAT TCAGTTCCTC AGTGTCACCA GCCACATTTC AAGTACTCAA TAACCACATG TGGCTCATAG GTACACACTG GAAACACAG CTATGGAACA TTTCCATTAT CACAAAAGCT CTACTGCACA ACGCTGTGCT AAGGAATCTT GGAGAGAAGC TCATCTAACT CTCTTAATGT ACAAATTTAG GAACTGAGAC CTCATTTCAT TCAAGTGACT TGCTCCATGC TACACGGCTA GTCATTACAG AGCCAGAGGC CAGAGCATGA ACCAAGATAC CCTGGACTCT GTAACTCACT CATTTCTACT GCAACGTCTT GTTACCACCT AGATGAGGTG AGTACATGTT CCTCGCAGGG ACACAGAATT ACAGTTTATT GAATGTGTCC TGTGTGCCAG GCACCATGTA ACCATGAGCC TATGAAGTTC ACACTATTAT TATCCTCATT TTACAATGAG AAAACTGACA TAGAGAGTTA AACTATCTTG TCAAGGTGCC AAAATAAATA ACTGGTGAAT CTAGGACTCA AACCCAGCAG GGTCTGACTT CATAGTCTCA GCTCACGATC ACCATATGAC ACCATCTGCA CCAGGGAAGG GAAGGCATGC AGACCTGACT CTAATGCCAG CTAGGACGTG AGATGGTGCT ACCATCTCAA GTGAAGAAAG AGGCAAGAAC CAGACTTACT TTGCTCACAC TTGAGTCCAC

TOAAGCCAGG GTCACACTTG CAAGTGTAAT TATTGATGGT CTCTACACAT TCACCGTGGC CACTGCAGGA TGTATTGGTA CAGGCAGCTA CGGAAAATAC AAAGCATGAT GAGGAGGACT ATTACTGTGC TTATACTGAG TGCCTTTGAT TTTAGAATCA ACAGTGTGCA ACAGAGACAT CAGCAGTCCT ACAGAGTGCC ATAGACTTTA ACTGAAGTGT TTTACAAAGT TCCAAATCTG AGTITCAGGC CCACCTATCC TAAACCTTGA TGCTAATGTA TAGCTGTGGC TGGCACCTAC CGTAGAAAAT TTACTTCTTC ACAAACTCTG AAGACAGTTC CCCTACCACA AATAAACAG TAATTAAAAAT ATGTATTGTG TGTGTGCATT TTTATATGTA
AAGAACTACA TATTTGCCTA CAGTATTTAT ATAATATTTTA TATATATACAC ACACACATA TATGTGTGTA TATGTGTGTA
TGTATATATA TAAAATGTAT ATAAATGCTG TAGGCTATAT ATATATACAC ACACACATAT ATGTGTGTGT GTATATATGT GTGTGTGTGT ATATATATAC ATATCCACAT ATTCTTGCCC ACATTCACAC AAAACAGCAA AAGAGAGAAA CTTTAGCAGT TAAACAGAAT CTTTTGGAAC ATAAAATGAC CACAATAGAG AGCAGTTTTT GCATGCTGTA AATTTGCCAA GATGCCCACA CACTGAACT ACCTCCCACT GCTGCCGCAA ACTCCCTACC TGTGTAGCAT AGGGCAAGCT TCTTCTTGCT GCACCTCTCA
TCATTCCACA TGCCCACACT TTTTTCTCT TTGATGTAGCA TCTCCACGCA GTCCTCATCT TTTTTGCCTAT TGTTGGGTTC
ACCTGGAGCC CAGTTCTTGG CTTCTTCTGT CAGAGGTTTC TGGGTTCCTA CCCAGACCCA CACATTGTTG ACTTTTCTGA
TTCCAATCCA GTAATAACTT GGTGAATAGCA CTGGCCTCAT CATAAGTCAT TCCACTCTCT TTAATGAGAA GCACTAGTGG GAGAAAAAGA AAAGAAATGG TAGAGTTTGG TACTGTTGTG GTTTAACTCT GACAACIGIG CITITITATIG TCTIANTITI GGCAATGTTI GTGACATGGC CCAGACITTT CTCATCTITT CAAAAGTAAG AAGTACGTAT GAAGAAACAG CGACTTATTG TTTATCTCTT TTGTGACTGC CACCCACTAG GTACCTTATC CACACTCACT CACAACATTA TAGTATACCC ATTTTGTAGT AGAATAATAA TCAGAATAAC TAAGCTTTAT TGAGCACTTA GTATGCACCA AGAAGCACTG TATGAGGTAC TITCCATGAA CCATGCTATT GAATCCTCAC AATGCATCTG GGAAATAGGT CATTATGATC CACACTTTAC ACTTAAGGAA AGGGAGACAC CAAGAGGTAA AGTAAATGAC CCCAAGCCCA GGGAAGAACA CATTGCAGGT AGAGGTCAAG GATGCTGCCA GATATCCTGT GCAGGACAGC CCCAGACAAG CAAGGATATT TCAGTCTGAA ATATCTATAG
TGCGAGAATG AGAAATCTTG GTCTAATGGC ACTGACTTAC CCAAAGTGAG AGCTGAGAGA AACTGTGAAG CAATCATGAC TTCAAGAGTT CTTTCACCC AAAGGTTTAG GCTTGAAATA CTTTCCTGGG GAGATAAAAC ACAAAATGAA TTAAAGAAGG AAATCGTGGG TAGCTAGTTA CATTATTCTA CCATGATGTT TAAGGCAGCA TCCTAAGATT TTGGGCAAAG GACACTAGTG CAATAATCTT TATTTCAGAG TTTAATCAAA TAAATAAACA AATTTTAAGA CTTTCATTAT TTAGGTCAAA GAGAAAAGAC AGGITTTAGC TACAATACAA TAAGAGCTTG TACAGATGTG GTTTTTATTA GAAGGCCTTT TGCATATCTG TGTTTCATGG CCCGAGGCTG CCCTTATAAAA GCGTTCTGCA CTTACCGTTT TGGGAAGCAG TTGTTCAAAC ACAGGATCTC TCAGGTGGGT ATCACTGCTG CCTCTGTCTC AGGTCAGTAT AGGAGTTTTG ATGTGAAGTC AGCCAAGAAC AGCTGAACAC TACTTCGGCT GAGGCCCTTT TATAGGAGGG ATTGCTTCCT GTGAATAATA GGAGGATATT GTCCACATCC AGTAAAGAGG AAATCCCCAA TGGCATCCAA AAACTTTCCC GGGAATATCC ACGATGCTTA AAATTACAAT GATGTCAGAA ACCTTGTCTC TTGAAGCTAC TTCACCTTTG TCCATGCCTT TATATCGTAT ATGCAATTTT ATTAATATGA CAAAAATGCA TGATTTTTAA TTATAATAAC ATAAAGTCTA TGTCTTTAAA AAGTTGTAAA ACTTTGCTTG TTAGTAGTGT CTCTCATGTA GTTGTGGTAG TAATTAGAAT TTCAGAAACA GAAGGAAACC AAGAATAGGT TTGTCATCCA TAGTCTACTA CCTTCAATTT CTCATTCATA GCTGTGGATA ACCAATCACT ACTCATTTT TCTCCTTTT TCACCTGCCA ATTCAACATA TTTAACATGC ACTGTCTCAC AGAGGAATGA CTCACAAGGT AGATATTAAT CTTCAGATTT TGCACGGCAG TTATGCCTAA ATTAAAATAT TATCTAAAAA TAATATCTAA CACTCAAATG GTTAAAATAA TGCCTTATTT TAAAAAAAAGA AAAATGGGAA ATAGATATTT ACATCTGGGA AAGTTTCATG GTTTGTTCAG TGAAAAAAAT AAAAAGGAGG CCAGGCACAG TGGCTCACGC CTGTAATCCC ACCACTTTGG GAGGCCGAGG CAGGCGGATC ACCTGAGGCC GGGAGTTCAA GACCAGCCTG ACCAACATGG AGAAACGCCA TCTCTACTAA AAATACAAAA TTAGCTGGGC ATGGTGGCGC ATGCCTGTAA TCCCAGCTAC TCGGGAGGCT GAGGCAGGAG AATCGCTTGA ACCCGGGAAG TGGAGGTTGC AGTGAGCCAA GATCACGCCA GTGCACTCCA GCCTGGGAAA CGAGTGAAAC TCTGTCTTAA AAAAAAAAA AAAAAAAGAA AAGAAAAGAA AAAAAATAAA ACGGAAAACT ATATATATAT ATTTAATTGG TCAAAATTTT GTTTAAAATT TTTGAAATGT TAATGTGCAA AGAATAAAAA TTCTTCCACA ATGTTAACAG TGACTAACTC TGGATGGCAG GATTTGGGAT AATTTTTATA TCCTTCATTA TTATTTTCAG GATTTAAAG TTTTTTTCAA TTTCCCTTT TTTCACCTTT ATAGTAACAA GAATACAGTT TAAAGAAACT TGTCTCTAGG CCAGGCATGA TGGCTCATGC CTGTAATCCC AGCACTTTGG GAGGCTGAGG TGGGTGGATC ACCTGAGGTC AGGAGTTCCA GACCAGCGTG GCCAATATGG TGAAACCCTG TCTCTACTAA AAATACAAAA ATTAGCCGGG GTGTAGTGGC GCATGCCTGT AATCCCAGCT ACTGGGGAGC CTGATGCAAG AGAATCGCTT GAACCCAGGA GGCAGAGGTT GCAGTGAGCT GAAATCACAC CATTGCACTC CAGCCTGGGC GACAGAGCAA GACTCCATCT CAAAAAAAAA GAAAAAAGA AAAAGAAAAG AAAAGAAATT TGTTTCCAAA TGCAACAGAA GGAGATGTAT GTGGTATCCT ATATTCCTGC TCTTCATTIT GACATTICIT CTGGGTGATT GTATACATTC CCCATCTCTG CATCTTACCC TATCTAAATG ATGGTAACAG TAAATGGGGA TCATTTAAT TTCCATATTC TGTAGGTTTT CAGAGCTCAA GTCAAGCTAA TATTCTATAT CTACAGCCTT TCAAAATAGG AGGTCTATCT AAAAATGTAC TGTCAGCAGA CCTGAACGAG TAGTGGTAAA AGCCTCGTTT TTCTCTTTAC TIGITAGCAC TGGTCTTTCT GTGTTCATAA AGATGTCAAG ACCCAAAAAA AAAACAAGAA AAGAGAAGAA AAATTCCAAA AAAGACAACT GATTAGAAAA AAATAACTTA ATTAACGAAT TTAATTCAAC CCCTATCAAA AAGCATAGAA TTTATTCCCT CCACCTTACC ACTCTCTTAC ATGATCCAGA TACTGACATT ATTCCAATTC TTTATCCCAC TTTACTTAGC TCAATGTGGT TOTTGCTTCA ATAAATTCAG AAGAGTAATC ACTCATATAG TGTTTATTTA GATTTTAGGG CAGAATGTCA AGTTGGGTTA
ATACATTATC TGTATGTATT TTATTTTTAA TAAAGTATGA ATACATAATC TGCTATTTTT AAAAAAGCATG GTCAAATGTA TAGAGTAGCC AAATCTTAAA AAACAATTTA TCTTCGATAT CAATAAAGTA CCTAATAATT ATATTGCTAA TAGAAATTAG TCGTTAACAT CCCTAGATAA CTAACTTTAT TATTGCGAAT TTTTCATAAC TAAGTTTATA GTTTATCTT TCCCCTTTTT AAAAATAGTT CAAAGATATC TAAAAATAGC CCCAGTGGTG ATGAAGTTTC TATTTTACTT ACATATATAT GTCCTGGACC CCCAATTATA ATCTCTAACA TTTATTGAGT GCTTACTATG TGCCAGGCCA TATTCTGAGC ATTTTGTATG TTCACCTATT GATTATTCAA TCCGTACAAC AGCCTATGAA ATAGGTACTC CTATTATCCC CATTTTACAG ATGAGGAAAT TGAGAATCTG
GGGATTTTAT CTCATTCAAA AGCACAGAGC TAAGGGTTGA AACCAGGCAG TTGATATCCA GAGCCCACTC CCTTACCTGC TACTCCAAAC CATGATTCT TTTGTTGTTA TGCCCCGAGA TTCCTTGTTC TACCCAAGTT TCCTGTACTC TTCTTGCCCT CTTCTTCCTG AGACATCCTT GACCATCACA GCTCTCCACT GAGATAACTG TGTCCTGGGT TCTGAGACAT GGGGGCTGGA AGGGACCCCA GGGACAGTGA GCAGTAGGGA GAGGATGCAG TGAGAACAGA CCCTGGATCC CCGGTGCATA GGCAGGGAGA AAGTGGACAA AGGAAAAAAC AAGCAAGGCA GGTGGAGCCA TGCCTAGGTA AAGTTGATCC CTAAGCCACA GTTCCCAGAA GTTCCTGATT CAAAAGCAAA TTTTCTCTAA GGTCAAAGGG CAAACTGATT ATTCTAAAATT CTAAACTGAT TATTTCTAAA TTGAGAAAGC TTCAGGGAGA GATCCCAATA TTCGAAGGAT AAGAGAAATG AGGAGTGGAA GAGATAGGTG AGTAACAGTA CAAATACCTG TAATTTCACA TGCTTACTTT ATCTTATATA AAATGTAGAT GTACTGAGCA TGAGATCCAT GCATAATTTC CCTCTAGTCC CTTCTTTTTA CATGTAAAGT GTAGACTCAC TGAGTGTTAC AGAGCCTTGC CACAATGTAA ACACTTGTCT CATTGCCAAC CCATCTTCG TTTATTTTCT TCCCCTCCTG CTTGCTCTTT CCCCTCTAAA GATGGAAGTT CCCAAAACTC

	TCTTTGGAAA	AAGCGCAGGT	CACAGATCCT	ACAGTGATTT	GTGTTTCTTT	TACCTGGGAC	AAAATAAACC	TCTAATCTGT
	TGAGATATGC	TTCAGTTACT	TTTTGGTTTA	CAATATGTAC	ATGTATGTAT	ATAATTTATA	TGTATATAAT	ATATGTACIT
	GTTTTAACCA	GAGGTATGTT	ATTCAAAATC	CATTCATCCT	TACAATTACC	TGCATTCTCC	CACAGTATIT	TCTGTGTCCC
	TGCCCCGAG	GTTGTCACTG	CAAATCAGGT	ACATGGATAC	TGGGAGCTGA	TGGGCTCCCC	TCTGGCTACC	TGGGCTGCTG
5	AAGGGGCCAT	AGACAGACCC	AGCTTTCCTC	TCGTGGAGAG	GCCCTGGGCC	AGCGCTGCGT	GGGAGTGGGA	TTACAACCAG
	ACTATAGCTT	CTTCACCTGC	TTTTTCCTAT	CAGGATTTCA	TAAGAGGCAA	TTGCTTGTTT	TTTGAGGGTG	GGGGCAAATC
	AGGGGGAGTT	GAAGAGGAAA	A TTGGGTAAGA	A TTTGAATAGT	TGGGCATGTT	GAATATTATG	AATATCATCT	CCCTCTTCAA
	ATAATCCAAA	ATATACCCCC	AAGAAACAGG	CTGATTAGAG	GTGCTTCAAG	GCTCCACTGA	ATCTCCCAAG	CTCTGAAGAT
	GTAGCTAGCT	GTTACCGGAT	TGCCGGTTTT	CAAGCCTCGC	CTCACATGGA	CCCTCTTGGC	AGTTTCTCGC	ATGGGGGAAG
10	CATCCGCTAC							
	TATTTAATCT							
						CATTCTCACT		
						TAGAATTTTA		
						GCAAAAGCAT		
15						CTGAGGCACT		
						CTCCCATAAA		
	TCTAAGTTAC							
	GGTATTTCTT							
						AAGCCATGTT		
20						TTTTCTCCCA		
						TGCACATCTT		
						TATCTCAGAT		
						ACTTGGAGAA		
	GTTGGTGCTC							
25						GTAGCATTTT		
						GCTAAAGAAT		
						ATTCTTCTTG		
						TGAAGTTTCC		
						CCAAAGCGGA		
30						TGTTGTTAAC		
						GTTTTGTAAG		
						AAACATATAA		
						AATGGGTAA		
25						CTCTTTAGAG		
35						TGAATATTTA		
						GGATCACCTA		
						CAGGCGTGGT		
						GTTGCAGTGA		
40						AAATACAGTG		
40						AGTCTCAGAT		
						CAAAAGGTAT		
						ATAATTCATA		
						TTTACAAAGT		
45	ACATTCAATC	TOTOTTACTO	TAAAGTCCCT	GTCCTTTTLA	TTGCCTCCAT	TGTTTTTTCA GCCTACTCAG	ATTTAAATCT	CVCCVCCCYV
43	CTA A A CCTTA	CTTTTTACAT	GAGAAAATGT	TACACCACC	TTOTOGGCTT	CCTTTACCCC	CATCCCAGTT	TCACGAGCTT
						GGTGCCAGTC		
						CTCCACAAGA		
						TACAGAAAAC		
50						AGAGCTGATC		
50						GAATTCCAGA		
	ATGATOTGAA	TECTETETTE	GGACAGGGTG	GGCGTTATTA	GTTTTCTGTC	ATTACTGTAA	CAGATTACTA	CAAACCTGAT
	GGCTGCAAAC	AACACATATT	TATTATGTCA	TAGTTTGTGT	GGGTCAGAAG	TACAGGTTAG	CTCAACTAGT	TTCTCTGCTC
	TAGGTTTCAC	ATTGCCAATA	TCAAGGTGTC	ATCCAGTTGG	GCTCTTCTTG	GGAGGCTTGG	GGATGAATCC	ACTITCAAGC
55						TCCCTGTTGC		
55						ACTTCACCTT		
						TCTGTGTACC		
	TAAGGGCTCA							
						GCTACTGATA		
60						GGGAAGCCTC		
						CTTGTGCAGG		
	ATCAGATCTC	ATAATACTTA	TTCACTATCA	CAAGAACAGC	ATGGGAAAGT	CTTGCCCCCA	TGATTCAATT	ACTCCCACCA
	GGTCCCTCCC	ACAACATGCA	GGAATTCAAG	ATGAGATTTG	TGTGGGGACA	CAGCCAAACC	ATATCAAGTA	CCTAGATTCA
	TGTTTGATTA	AACAACCAGG	GAGCAGAAAT	CTTCAGGAGT	GGGGGGCATC	TTTAGAATTC	TGCCCACCAA	GGCTGGGCGC
65	GGTGGCTCAC	ACCTGTAATC	CCAGCACTTT	GGGAGGCCAA	GGTGGGTGGA	TCATGAGGTC	AAGAGATCGA	GACCACCCTG
	GCCATGGTGA	AACCCCATTT	CTACTAAAAA	TACAAAAATT	AGCCAGGTAT	GGTGGTGGGC	ACCTGTAGTC	CCAGCTACTC
						TGAGCCAAGA		
	CTGGGAGACA	GAGCAAGACT	GTCTCAAAAA	AAAAGAATTC	TOCCCATCAT	AGTAGGCTGT	CCTACAGAGA	CATAACCCAG
	GAATTAGGTG	AATGGCTAAC	CTAAATTAGC	ACTGTGATGT	GTTTTCTGAC	TTGGTCCTTA	TAGCTCCTCT	GCTTAGATGT
70	GGAACTAATC	CATGAATGCA	AGGGTTTGTC	TAGAGTTTTA	AGTGGGAGTT	AAATATCCAA	AGTACAGGAG	ATATTATGGG
	TGCCTCATCC							
	ACTCTGTGAA	CTGATGTCCC	ATAAATAGAC	ATTTCATTTT	GCCAGTCTTC	TTGAACAATA	ATTACGATTA	TTAATCTAGC
	AGTTATCATT	AATTGGCCAC	TTCACATTAG	ACACAGCACT	TAGGACTTAA	GAATACCATG	TCATTTGATC	ATCATAATAT
	GGTCAGGAAT	TAAGTATTGC	TATCCAAATT	TTACAAAGAA	GGCACTGAGG	GTTAGAGTTT	AAATAACTTG	CTTAAGATGT
75	CATAGCCTGT	AAGTGACAAA	ACTAGGACTC	AAATACAGGT	CCATCTGACT	CCAAAGTCTA	TGTTCTTGGC	TACCACACTG

		AAGTGACCTG						
		CACAGCACAG						
		TCTAATCCAG						
_		GATGCCTTCT						
5		AAAATACCTG						
		GATAGTAAGC						
		CTGAAAAAAG						
		GGCCATGCCT						
		ATTTCCACAG						
10		TTTCACAGTA						
		GCTATCTCGG						
		AGGTGTGTGC						
	GCTGATCTCG	AACTCCTGAC	CTCAGGTGTT	CTGCCCGCCT	CTGCCTCCCA	ATGTGCTGGG	ATTACAGGCA	TGAGCCACTG
		GCACTTCTAC						
15		CTAATACTAG					-	
		AAGGAAGACT						
		ATGAGGGTGA						
		GTTTGCCAAT						
		ATGAGTACTA						
20		TGGATGTTGG						
		CAGAGTTGAA						
		TCATCTCTGC						
		TCATAGAAAG						
		ATGTTTCCCT						
25		GCTACTAAAT						
		ACTGAATCAA						
		AGCATAGAAT						
		AACTAGCTAT						
		AATGGGAATT						
30		CTGGGATATA						
		ATCCGCCAAA						
		CTCAAGCCTA						
		AGGTCCTGGA						
0.5		TGAATTGAAT						
35		GAATCTCCAA						
		ATGCCACAGT						
		ACAGTCTTGA						
		TAGTTTTTTC						
40		GGGCATACTT						
40		ACAGGCATAC						
		AAAACCAGCC						
		CAATAGCATT						
		AAACTTTCTT						
45		TTTTTCCTTT						
45		AGCTAAAAAT						
		GTCTGCTGAC						
		ATAAATGATT						
		TCAATCCTTT						
50		GTTCACACCA						
50		CCACTAAAGT						
		TCTATCTCAT						
	ATCCTCAACC	ACAAACTCCT	CTTTTCACTT	CCCTTTCCCC	COATCOATCA	CACCAATCCC	TATICITAAI	ACCTATACAT
		TITTCAGAAG						
55		GACTCAAACT						
JJ		AGCCCAAAAT						
		GGTTACCAGA						
		GAGCAGTAGT						
		TGTAAACAGA						
60		GGGCCTTAGG						
00		GGTCTGTCAC						
		TGCCTCTGCC						
	CTACAGACGG	GGTTTCGCCA	TGTTAGCCAG	GATGGTCTCG	ATCTCCTGAC	CTCCTCATCC	ACCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	CCCTCCCAAA
	CTCCTCCCAT	TACAGGCGTG	AGCCACAGCG	CCCACCCTCT	CTTCAACTTA	AAGTCGCCAG	CTCTCTTAGC	CTCTAATAAG
65		TGTCCTTTCA						
55		AGCCATTTTT						
		TTACCACAGT						
	TCTA ACCTCA	TAAACTAACC	TOTACATCA	TCACATTOTT	CTTTTACACC	TTCCTTTAIGI	CTCTCAGAGT	TCACAGAATT
	GAAGAATGTT	GGGCCTTGGA	TTACACTAGGC	GTTTAACCCA	ATGCTGTGGC	TGGTTTGATT	TTCTATCCAG	AACACTAAAA
70	CTTTCTTCAT	ATCAGCAATA	AGACTGTTTC	ACTITATIONAL	TATTTTTOT	GATAGCACTT	TTCCTTTCCT	TCAAGAATTT
, 5		TTCACAATTT						
		ATCATTTTAG						
		AAGCTTGAAA						
	TOCTCAATTT	GCCATTAGAA	GCCATTGTAG	GGTTAATTAA	TTTGCCTAAT	TTTAATATTA	TGGTGTCTCA	GGGAATAAGG
75	AGGCCTGAGT	AGAGGGAGGG	AGATGGGGAA	ACAGCCAGTC	ATCAGAGCAC	ACACAACATT	TATCAATTAA	GTTTATCACC
, ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			····	, ,,			J. 1.1.1.01.00

TATAATGATA ATGAAAAATT TGAAGTATTG TGAGAATTAC CAAAACGTGA CACACAGACA CAAAGTGAGC ACATGTCATT GGAAAAGTGG TGCTGATAGA CTTACTTCAT GCAGGGTTGC CACAAATACT CAATCTGTAA AAAATTCAAT TATCTACATA GTACCATAAA AACAAGGTAT ACCTGTTTAT ATAATCAAGA CCAACAGAAC CCTAGAGAAA ATAGCTCACT CCCTAGCTCG GAGACATTCT AACCAACATA CACTTACCTT TCTTTTTGCT GTGTACAGAA TTCAAATCCC TGTCTCAGCA AAATTGCAAAGTATCAAATG TCATGTCCAT CTAATACTCA AAACTGCAAA TGTTAAGTCT TGTAAGCCCA GAGACCACTG TATATACAAG TGTTGCTATA AGCATTAGTT CTTCTCCAAA GAAAATAGTC CACTTGGTAG AAACAAACAA AAAGAAAAAA AAAGAAAGAA AAAACATTTT TTACAAGAAG ATTCAGTCTC TTACCTACAT AAGCAAAAAT ATGAGATGTT CTCTTATCAT TTTTCCATCT ATCTTATAAT CTTTGGTGCT GACTTAGACA CTCATTTTCC TTTTTGTACG TGACCATGTA AAAGTTCAAG TCAAGAAAAA GTTTAAGTTG GTTGTTATAA AATGAAGAA TATGAAGGAA AGCCTTCTTG TCTTAGAACA CACTGATTCA CAAATAAGCA GCTTCTCTCA AAATGTTGTA ATTACAAAAA TTCCAAGGCA AATATAATAA ACTCCTTGTC GGTGCTATGT CTAGAAACTT AACAGCCCCA AAGAAAGTCC TGACAAGGCA AAAAATATAT ATATATATAC AAATTGTGGA AGCAGGGTGT TGAAAGAAGA ATAAAGACTA TATAAGGACA AACTGTTTAA AAGGGAGGGT ATCCTTGAAA GCTTGACACT TGACTCTTTT GACGAGGCTG AGGGAAAACA CTCAGTTTCA TAGATTGCTG GTACGGATGT AAAATAGTGA CATCCCTATA GAGAGGAATT TGGCAATATC TAGCAAAAGT GCITATGCAT TTATTCTTIG ACCTAGTAAT CCCGCTTCTA GGATTAGTGG TGAAGATACA CCTCAACAAT AAAAATATAT ATACATTAGG TTATTAGTTA TGGTTTAATT TTTAATAGCA AAATATTTAA AACAACTAC ATGAACAAAT AGGAGACTTA CTGAATAAAC TATGGTATAT CTGTACAATA AAGGAGACTTA CTGAATAAAC TATGGTATAT CTGTACAATA AAGGGCAAT CACTTATGTT GTTAATTTGT TCCAAAAATC CAGAGCCAAA GAGTATTTGT TATGCTCTCT TTAGTATAAG AAAGGGGAAA TAAGATATGT GTGCATCTGT TTATTTTTTGT GAAAATAAGT ACAGAAAGGA TAAGTAAGAA ACTAGTAAAA CTAGTTATCT CCTAGTGTTA GTAGAAATAG AATGAAAGTG AATTAGGCTT CTTTGAGTAT ATGTTTATAT ATAGTTTTGA CTTTTGAATT ATGTTTATGT TTACATAGTC AAAAATATAA ATTAATCAAC AGAAATAACA AAAAAAGAAG AAATCACAAG CTTTAAAAATT TAATACAAAC AGAAATAATT GAATCTAACA GTATATCAAA GTGATAACGT AAACTCAGAA GAAAAAAACA TAATCCAACA TACCAGTGGA ACACAATATT CTAACTGTAT ACATTCAGTG GTTATAGTCT AAGGACAAGA AAAATTGCAA AAAATATCTTG AACTTTAGCT TGTAGGATTT TTATTGGTAG CAATACTAAT GTACTAATTC TGAAATTAAT GTTCGTGTAT TATAGAATTG AGTAAATGAA TAAATATGTT GATGTTATTG GGAACTAAAA TTATCATTCT GGGAGTAGAG AAATATAAAT ATGGACTTGG CAAATGAAAC AAAGACCTGC AGAGAGATAA 25 CCATATAAAC TCATTATTTT AAAAATTATA AGTGTCCTAG CTCTGTTACT GAAAAGGCCT AGATTCAATC TTATCTTGAT AGACAGGAGG GCACCCCTTT CTCAGAACAT GGTTTCCAAA TGCCATTCTC CATTAAAAGG AACAAGGTCT TCTTGGAGAA AAGACTGATT CTAGGTCTGG ATTAGGTAAA GTACAACGTT AGTCTGGAAT TTCTTGCTGA ATCAGAAGTA AGAAAGTGCT CAAAAACATG GGAACATGTC ACAAACACAC GTGAGGCAAC TTGAATCCTC ACTGGCCATA TTTAGGACAA TCGAGCATCA AAAAAAAAA AAATGTTGAG AATAATGGAT TCTAACACTT AAAACAAAAA ATAATCCATA GCCCACAGAA GGGGAAGAGA GGGGGAGCTC TTATTTACAG ATGAATATCA AATAGCAAAG ACAGAAGAAA TGACAGAATT AGAGAAACAT CATTTTGCAA AACACCACTG TAATAATCAA TTCAGGCAAG TATTATTAAT GGATGTATTA CTATTGCGTA AAACCAGTTG GGGAACAGGA TATTCATACA GTCTGAAGGT GTCACCCTAA ACATAACTTA TTACAAGTGG AAAATGGTGC CTTTACAATG AAGAAATCTA GCAGAAACCA TCTTAATCTA GTGATCAAAC TTAGTATCAC CAATAATGGA TCATACTGAG TCATGTGTCT CCTAATATGA
TGCACCAGGA AGGATGCAAC GTCATGAACG TTGTATTCTT TTGTATTCAA CAGACCACCC AGGGTAAAGG CAGCTTTCTC
ACTTACTAAT CAGAATTGTT GGTTTTAATT CATTTTGGAT TTTAAGATTT CTTACTTTCT TGTCAGCTCA GAAATTTATT TAAGATGATT TITATCTTIT ATTCAATACT TTAGCTTGGA GAACCATTCA GAGTTTCTAA CTCATTGTAT TGCCAAAAAAT AGAAAACAGC ATGGTTTCTT TTGAAAATGT CTAACTTTAA AGTTACTTGT GTGTGTCACT CAGATTCACA TAGCTTTTTT GCCTAGTAAT GTAGTACTACA TGGCCAAGGC TATAAAAATG TTTACAATCT TTTATTTAAT ATGACTCTTG AGAGTTTATT CTAAGGAAAT AATTGAATAG TAACAAAACA CTATTAACAC AAAGCATAGC AATTTGATTT GGGCAACCAA ACACTGGAAA CAACCTAAAT GTCCATTACA GGAATCATTT ATGAAGCAAA CACTAAAATA TTTATTGTGA AGATTATGAG AACATAGAAG ACAGTTATGA GAGTAAATTT GAAAACCTGA ACACAAAACT TACATATACT CCAATTGTAA CTTATAAAAA ATACGTGCAT ATAAGGATAA AACAGTACAA ACAAAAAAAT AGTTGCGTTA GATTGGTAGA ATTATGGCTC CTTTTGCTGT CTTAATTTTT TCCTTTTACA TITTGATACA TTATTTTAAT TITAATTITA AAATTCAAAA GAATTTGCCA CTCATCTTTG CCACTTCAAG
GAAAAAAGAA ATGTGTTCGA TTATTCTGTT CTTAGTATAG TTTTGGCAAT TTCCTCACGT GTAAAAAGAG AATACTATTA
ATAATTTCAG TATCTATAAG ACAATATAAA ATTAAAGAAT CTAGCCCAGT AACTGGTACA TGGAACGTAA TTAATAAATC ATTATGGACT TITTTCTCA CACCCAAGTA GGGAGGAATC AGTGGTCCCC TAGAGGCCCA GTGTAGAGGT GGCAGCACCA ATCCCTAGGG GAGAAGATCT TGGTGATGAT AATTCCTGAG CAGACAGTTA GCTGAGAATT CAAGAGCAGA AAAGTAAGAA AGAACAACT TOTTGCTAAC ACCITTCCAC CCACGITTCC CTGTTCTGTT GTACTCTCCT TACCCITTCA TGGATGGAGG CAGAGGAAAG AGAACCAAGT TTGCTCTTAG TCATTCACTA TGTTGTTTAA TCTGCCTTCC ATCTTTCTTA TCAGTTCAAA TTAGAATGTA GACCTGAATT TAAATCCCCG TTCTGTCAGT TATAATGTGA CCCTAGACAA AACACATTCT CTGAACCTCA GAGAACATTC TTCATTTGTA GAATGGGAAG ATTAATCTAT ATTCCACTTG GATGGCAAGT CTTTATAAA CTTTATAACC TAAACATGTG TGAGTTGCTA GTATCATTAT GTTGGTAAAG TTATTCTGAG ATATGATAAC AGAACTGTTT TGTCTAACTC CACTAGCATG GTTCAGGTTT AGAGAGTGTG GAATTAAAAG GCTTTATCCT CAAATATGAC TTAAATCCGA TTTTTCTCAT CCACTITICCI CCACAAACAA ATCCTCAGGA AATGACAAAC TITACATGGT TAAACATCAG TITTIGTTTAG TCTTTGACAT CCACATGGTT AAATCATACA TTTGAAAACT GCTTATATTT GTGTTGTCTA TGTCTAAATT GAAAAGACTT ATTGAGGAAT AGAAGACTAC ACATTTTCA GCAAACACTG CACGTTTTGC AGAATTTCCC CAGGCACCAG TCTCCAGGAA TTTATTGGCT ACTAACAATA CTAAGATATG GATGAATGAG GAAATCAAAA TGGAGATCTT GCAAGTTTTG TGAGAATGGG TGAATGGTCC AAATGAAGAG ATAAGTTGTG AAATATTAGT ACAAGTAAAA ATTATTTACA ATGAAAGACA TTTTGTCAAT AGCTATGAGA ATTITACCAT TGACCCAGAA ATTCCATITC TTTCTTCAGA AATACCCACG TAGGTATACA TATAAAAAGT TATTCATTAC AGTATCGTTT TTCATAGGAA AAAGTTTTAA AAATCAGAAG CTATCTAAAC TATGGTATAT CTAGGTCATA GAAATCAAAT GACTAAAAAAT GTTAATATAA GCATATGTTT TTAAATTAAC TTGGCTTGGG TCTTCAGCAA AATTGGCTTC TTAACATTGC ACTCCAGAGT TAGACTTACC CACTCAGTCA CTTATCATGC AGGAGCAGAC TCCTAATACC ACATATCATA GAGCAGAGTA 70 TTAGCACAGT GCCTGGCATA AGGAAAATGA TCATTAAAAG CTGGGTGAAA AACCTAATAA AGCTACTGAG GATAGGAACT GCAGACCAGC ATGGAAAGAA AACTATGAGC CAGATATTGA CATCATCCTG AAAGGCAGAA GATTTAGTAT AGGCAAGAAG TATGCTTTTG GAATATAGAA AATCTGGATT ATGATAAGAA AAGAATCATA TTTGTCTTAT CTTACCTACT CACTTCTCAG

				**				
	TTCCACATGT	TTCTGAGGCT	GTTTGTCCTT	ACTITCTTTT	CTGTTTTATC	CACTCTTTCT	GTTCTTTAGA	TTGGATCATT
	CCTATTGAGC	TGACATCAAG	TTAACTGACC	TTTTATTTTG	TCCAAACTGC	TGTTAAATGC	ATCCAGTGAA	TTTTTAACTT
							TGCTGAGATC	
							AAATTCTTGT	
_								
5							AAGTCACATT	
							TTCTGGATTC	
	ATTGACTTGT	TTTTTCCATC	AGGCAGGTAA	CTTGACTGGA	CTCAAACTCC	AAACTCTAGG	TCCTCTGTAA	TGGGCAACTG
	CAGTAATCTT	TGTTTAGTTC	TTTAAGACTT	ATTGGCCAGG	CACGGGGGCT	CATGCCTGCA	ATCCCAGCAC	TGTGGGAGGC
							CCCTGCCTCT	
10							CAGAAGAATC	
10								
							AGCGAGACTC	
							TAGATCTGGG	
	ACAGAATTTG	GGTCTCCCTT	TCTCTGGATT	TCTCCTTTTC	TGGATTTCTT	TTCTCATTTT	CCAGCAGCTG	TGGTTGCCCT
	AAACTCGGTC	CTCTGTTTCT	TTACGGCAGT	AAGATTTGGG	AACTTTTAGG	TTTTACCTGC	CTCTCAGACA	AAATAAAAAA
15	TAATTTTCAT	CTTGATGCTA	CTCCTTTCTT	CCAGATGTAG	ACACCTCTCT	AATTTCCAGT	TGCTTTTTAT	TGCTCTCCAG
							AAACTGGAAG	
							ATGTACTTCT	
							GAAGATTCAG	
	CAAATGACCC	CCATATTACT	AAATACAATA	TCCCCAACTG	CATTTATAAA	AAGAAAATTT	ACTGTTTATT	AGTAAACAAT
20	GTTGTAGAAT	AGTAAAATAT	TGCTGGGCTT	TGGAGCCAGA	TAATCAAGGT	TAGAATCCCA	GATTCTAACT	TACTAGCTGG
	TGTATTAGTC	CTTTCTCATG	CTGCTAATAA	AGACATACCC	CAGACTGGGA	GACTGGGTAA	TTTATGAAGA	AAAGAGGTTT
	AATTGACTCA	CAGTTCAGCA	TOCCTOGGGA	GGCCTTAGGA	AACTTACAGT	CATGGTGGCA	GCAAGGAGAA	GTTCCA AGCA
							GAACAGCATG	
							TATAATTCAA	
25	GGGTGGAGAA	ATAGCCAAAC	CATATAATTC	CACCCCTGGC	CCCTCTCAAA	TCTCATGTCC	TCACATITCA	AAACTCAATC
	ATGCCCTCCC	AACTGTCCCC	CAAGGTCTTA	ACTCATTCCA	GCATTAAGTC	AAAAATCCAA	GTTCAAAGTC	TCATCTGAGA
	CAAGGCAAGT	CCCTTCTGCC	TATGAGCCTA	TAAAATCAAA	AGCATGTTAG	TTACTTCCTA	GATACAGTGG	GGGTACAGGC
							CCATGCAAGT	
							CCAGGTCACA	
20								
30							CTTCCTGTTT	
							ACCATTCTGG	
	AGGTGCAGTG	GCTCATGCCT	GTAATCCCAG	CACTTTGGGA	GGCTGAGGTG	GGGGATCACA	AGGTCAGGAG	ATCGAGACCA
	TCCTGGCTAA	CACGGTAAAA	CCCAGTCTCT	GCTTAAAAAA	TACAAAAAAT	TAGCCAGGCG	TGGTGGTGGG	TGCCTGTAGT
	CCCAGATACT	TGGGAGGCTG	AGGCAGGAGA	ATGGCGTGAA	CCCAGGAGGT	GGAGCTTGCA	GCGAGCTGAG	ATTGTGCCAC
35							CTGGGGTCTG	
-							ACATTTCCCT	
							GGCATTTCCA	
							CAATACCACA	
							TTTAGCCTAG	
40	CACAGGGCAC	CATGACCCGA	AGCTTCATAA	AGTGGGAGGG	CCTTGGGACT	AGCTGAGGAA	ACCATTTTC	CATCCTAGGC
	CTCCAGGCCT	GTGATGGGAA	GGGCAGCCAT	GAAGGTGCCT	GACATGCCCT	GGAGACGTTT	TCCCCATTGT	CTTGGTAACT
							TTTCTCCCCA	
							GTTGAAGACT	
							CTAGGGGACA	
45								
43							TATGAGACCA	
							AAGTTTCAAA	
							AAGTCACTTC	
	GGTATCTTTA	CAGCAGTGGC	ACTCCCCATG	GTACTAATTT	ACTGTATTAG	TCTGTTCTCA	TGCTGCTAAT	AAAGACTTAC
	TCGAGACTGG	GTAATTTATA	AAGAACAGAG	GTTCAACTGG	CTCACAGTTC	AGCATGGCTG	GGAGGCCTCA	GGAAACTTAC
50							TCAGATCTTG	
							CCTCCCATGA	
							AGAGAGCCTT	
							ATGGGATTTC	
							AGAAACAACA	
55							TTTCCGTATA	
	CCCCCAAGCA	CAGATAGCCT	CCCCCAGTAT	CAGCATCCCG	CACCAGAGTG	GTACATTTAT	TATAACTGAT	GAATCTATAT
	TGACGTGTCA	TTTTCATCCA	AAATCCATAG	TTTATATTAG	GGATGCCTCT	TGGTGTTGTA	CCTTCTATGG	GTTTTGACAA
							AATCTTTGAT	
							TITGTCTTTT	
60							GCATTTGATG	
UU								
							GTACTACAGT	
							CTATAAACAT	
							TGGATTGTAT	
	TGTTTAGTGT	TGTAAGAAAC	TGCCACGCTC	TTCCTAACTG	GATGTACTGT	TTTGCATTCT	CACCAGCAAT	GAAAGAGTTC
65							GATCTAACTT	
							TCCTTTATTT	
							ACTCTGACAA	
							C TITITITIT	
							CTCACTGCAA	
70	CCGGGTTCAC	GCCATTCTCC	TGCCTCAGCC	TCCCGAGTAG	CTGGGACTAC	AGGCGCCCGC	CACCACGCCT	GGCTAATTTT
	TTGTATTTTT .	AGTAGAGGCG	GGGTTTCACT	GTGTTAGCCA	GGATGGTCTC	GATCTCCTGA	CCTTGTGATC	CGCCCGCCTC
	TGCCTCCCAA	AGTGCTGGGA	TTACAGGCGT	GAGCCACCGC	GCCCGGCCT	TTTTTTTTT 1	TTTTTTTTT	TTTGAGATGG
	AGTCTGTCAC	TCTGTCACCC	AGGCTGGTGC	AGTGATGCAA	TCTTGGCTCA	CTACAACCTC	CATCTTTCAG	GTTCAAGTGA
	TTCTGCCACC	TCAGCCTCCC	AAGTACCTCC	GATTACACCT	GCCCGCCACC	ACACCCAGCT	ATTTTTTGT	ATTTTACTA
75	CACACOTACT	TTCACCATCC	TOOCOLOG	COTOTO	GCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	OTCATCOACCI	TCCCTTCCCC	WINDLY TOOLW
75	TOATOJADAD	TICACCATGT	TOOCCAGOCT	GUICICATIC	CIUACCIIGA	GIGNICCACC	TGCCTTGGCC	ICCCAAAGIG

80

CTGGGATTAC AGGCATGGGT CATCACATGT GGCCTGAAGC ATGACTGTTG CTTTAATCAT ATGAAATACT GCTCTGTATT GTTATCTATT TGAAATGCCA CACCTCCTGA GCTAAATTGC AAGCTTTTAT GGAGCACAAA CCATATTTAT ATATATTAGC ATGATACCAT GACACATATC AAAAGCTGTT ATATATTGTT ACGTGAATTG ATTCTTTCTC AGTTAAGAGG ACCTCTGTAG
TAGCACTTTC ATACCGTTAA TTTTTCATTT TGTGCCCAGC CCCTACTCTG TGAAAAATGA AATGAATCCT GTTATCATTT
CCCTCCCAGG CCTTTTCTCC TTGTGGACAA TGTGTGGCTC AAGAGAAAAT TCAGTCAGTA AATTTGTTCA GTGCACAAAAC TCTTTATCAC CTCTCACTGT TCTCAAGTGA GATAGAACAG AACATCCATC CAGTGTCTTA CAAATTGTCT GGTATATAGT AGGCACTCAA TAAATGTTTT TTGAATAAAT GCATACATGA ATCCTATTCC TATATATATGT ATGGTAGACA GATCATTGAT ACCCAAAGAT GCCCAAATGC TGATCCCCAG AACTTGTGAA TATGTTACAT TTCATGTCAA AAGGGACTTT GCTAATGTGA TTAAGGATTC AGACCCTTGG ATTGTAAGAT TATCCCGGAT TAACCAGGGC CAATCTAATC ACATGAGACC TTAAAAAAGC AGAAAACATT TCCCAGCTGG GTTAGAGAGA GATGAGACAG AGTAAAAAAGG AAAGAGATTC AGGGCATGAA AATGACTCTA CCCACTGTTG CTGGCTTTGA AGATAGAGGA ACTAGGCCAC AAAACAAGGA GTATGAGTGG CCTTAAGAAA TAGGAAAAAG CCCTCATCTG ACAGCCAGCT AGAAAGCAGT CCTCTGACCA CAAGAAATTG GATTCTGCCA ACCACTCAAA TGAGCAAGGA AATGGATTCT CCCCTAGAAC CTCCAGAAAG GAACACAGCT CTGTAATGCC TTGATTTTAG CCAGGTGAGA CCTGTTTCAG ACTITIGACC TATGGAAATA TAAGATAATA AAGTTITATT GTATGCTGCT AAATTTGCGG TAGTTTATTA CTGAAGCAAT GGAAAGCCAA TACAGACAGA ATATACAGAG AGAAAGAGAA TGAGTTCTTT CCTGATAATT TGTAAATATT TGGGTCTTCA CTGGACAAGC TTCACAGAGG ATTCACTGGT TCCCTAGCAA ACCAGCATGT CCAGTCCTGC AGCCTCCCTT TCTTAGGCCC AGCATATGTC AGCTGTGTGC ATAGAAAAAT CAAAGCAGGA CCCTGAGTAG TTGGAAAGAA AAGATGGTTG GAAATGGGTT GCACTTCAAG TGAGGAAACA AGAGGTAGGA GACCGGCATC TCTTTCTCAT ATGTCCCAGG CTGACTCTTG TGAGTTGTTT TCCCTTGGAG GCTATCGATG ACAGTCACAG TAACCTGATG GAACCTGGAT CATGATGAAA GAAGTAAGTG TCAATGGCTC CGACTICCAA GGACTCTGAT GTCCCACAGC ACTAGCTAAA CAAAGCCAGT TGGAAATGAG CTTAAATGGG GAATTTCCTG AATATATTCC CTATTGTTAG GAAGCCAGGT TGGCTTCCTT GCCTACAATT ATGCCAAGCA GTCACACTAT AGAGTCCCTA GGGACATGAT ATTAAGTGAT TCTTTTAACA CAAACAACTT AATAATCATT TATACTAATA GCAAAACGGC CAACGGCTGA TATTCCACTT GAAGTAGAAT TGGCTATCCA ACTGGAAGAG AAGACAGGAA GACGTGATCT CCAGGGAGCC ACTAAAAGGA TTGGCACCTG CCTCTGGATT CCCCTTTTCC TTATATTACC TCTCAGCACT GGCAGGCCTT TATTTCAGGA TACAGTTTCA CAAGTATTAT GTCACGTCTC TGAGAATTAT GTTGGTAGAT ATTTGCTCCT CTGGCCAGAA AGACCTAGTT TGGAGTCTGG AGTCATGAAG GTGACATACA TGTAGCTAGT GACATAAGTG TAGCTAGTAA AAATAGTGAG TAATGGCCCT GAAATTCTAT TGAATGCCCA AAGTGCTGAC CAGGAACAAG CATGCTCTAG CTTATCTCAC AAGGAACTTG ACAATTTTCT TCAAAAATCC
TAGTAGCTAA GATTTCTTAG TAACAAAGCC ACTAAGGCAC AATTATGATT AACTTGACCC TTAGGTGACT TTTAAGGACT
ATTCTATAAA ATATTACAAC TAATAGTGGA TCCAAGCCAG CACACTCTGC TATATAAGAT TAATTGACAG TGTCCACACT GGTAAAATAA GTTGTTTCAT AAATACATTA GAATTCATTT GCACTTTCTA CACAGCCCCA AGTCCAGAAC TTTCCCCAGA
ATAGGTCTAT GTTTTGCAAT CTGCTACTCC ATACAGAGAT TTGAGTTCAC TTGGCAATTT AGTGCTGCTT ATATGTGACC
AGTTAGTCTG TTTTACTTAT CTATGCCTTA AACATTACTA TACTTACTAA CTCCAAGATG CCTGGTCTCA ACTTGACAAA AATACCCCAA GITGGGAAAT CCTTATGTGA ATATGTAGAT AGTCACAATT GCTGGTTGAT GATGATCTGT CTTTTCCTGT ATTTGAGAAA ATGGAGATAA AATGGACCAA TCCAAATAAT GGATTAAACA TGGGAATAGG TGAGAGAGA AGAGGAATAC ATGGTGGCTC TCAGTGTCTG GCTTAGGCAG TAAACACTTT CGTTAATAAA GACGGAAAAT AAAAAAGGAA TAATTGGTGT CTAGGGGAAA ATAATGAGCT CAAGTTTTAA CACTCTGAGT TCCCGGATGT GAGACATCCA GGCGCATTTA TCCAAGAGGC AGTTGGAAGC AACGTTCCGG AGCTTAGGAG AGAGGCATGA CCAAAAGCTG GTGGGACTGT GAAAAAGGTAT GGCCATTCTG
GAAAACTGTT TGGCAGTTTC TTAGAAAAATT AAACATGTAC TAACAACCCA GCAATTGTAC TCTTGAGCAT TTGTCCCAGA
TAAATGAAAA AAAAAAAAAA CATTTTTTT ACACAAAAAC ATATACATGA AAGTTCATAG AAGTGTTATT CATAAAAAAAC TGGAAAAAAC TGAGATGTCT TTATTGAGTG AATGCTTAGG CAAACGGTGG TCTATCCATA CAATGGAATT ATGCTTAGCA ATAAAGAGAA AAGAACTATT GATACATGCA ATAACACAGA TGAATCTCAA AGGAATTAAT GCTGAGTGGG AAAAAAAGCA CATCTCAAAA TGGTATATAC TGTACTATTT TATTTACTTA ACATTTTAAA AATAGCAAAA TCATAGAGAT GGAGAACAGA TTAATGGGTA CTGTGTTTTG GGATGGGGAG TGAGAAAAGG GTAAGGTGTA AATATAAAGG GGTAGCACAA AAGAGCCTTG TGGTTGAAGG ATTCTATGTC TTGGTTGTAG TCGTGATTGC AGGAATCTAC ATGTGATAAA ATTGTATGGG TCTACATACG CATACACACA AGAGCATATA AAACTGGTGA CATGTGAAGA AGCTCCGCAC ATTGTGCCAA CATCAGTATC CTAGTTTCAA TATCAGACTA CAGTTATACA AAACATTGTC ATTGAGGGAA ACTGGGTAAA GGGAACACAG GACATTTGGC ATATATTTTT GCAATTTCCT GTGAATCCGT AATTATTTAA AAATAACAGA TATACTACAT ATCAAAAATT TAATGTCATA AAGTTGATGA GTITACCTAG TGGATAGCTT TGTTAATATC TGCTATAAGA CTACTGAAAA TGACAGTTAT GCAAGTATAA GCTCAGAGAA CTITICCTCC CCTTCGTAAA TGAAATGAGC AAAAGAAATG AAACAGGAAA GGCAAGCAGT ACTGAAAACA GGGAAGGGCT CTTCCCCATA TAACTATATC TGCGACTTCA ACAGCTATTC ATCCAGAAAC ACAGCCTCTT GCGCTAAGAG GAAACTTTCG ATAACAATAT GTTTTCACTC TCCAAGAGAG AAAATGGATA GATTAATTTT TAAGAAAAAA AAAAAAACCT CACCAATTTC ATGCTGTGGC TTGCACCTTT AATCCCAGCT ACCTACAAGG CTGAGGTGAG AGGCTTACTT GAGCCCAGGA GTTCAAGGCT GCAATGAGCT ATGATTGATT GTGCTATCGC ACTCCAACCT GGAGTACTAA GCTAAGAGCT AAGAACACAG CTGAGAGCGG AGAAGAAACA AACAAATCTG ACCAATAACC CCCACTCCCC TCATTTTACT GGAGTGAGCT GAGACTGCTG GCAAACATGG CCTTTGACCT AGCCTGAACT GTAGCAAAAG TCATCAGATA TTTTTCCACC AATCAACAGA CAGAAGTGGG GAGAAAACAA TCGTAGTTCA TAACTACAAC AAGCAGATAA ACGAAGGCCA TGGTGAGGGA TGGAAGACAT TGTGATATAT CAAAGGCAGG CTCATTTAAA ACTCAACCCA AATTCCAAAC AAAATATATA ATTGAATATG TATTAATGCC AAAGGAGCTT GAGTGAGCTT TAGCACAAAC CCCGCCCTCC AGCCCCCACC CAAAAAAAATC ACTCTGTTCT CTCCCCATTC TTTGATAGGC ATACTTGCTG TTTTCTCACA GCCAAGGTAC AGAGGGACT TAGAGGAACT AGAACTCTAA TACACTGCTA GCAGGAATGT AAAATGAAGC ATCTACTTCA GAAAACCATT TTATCAGTTT CTAGAAAGTT AAACATAGAC CCACCATGCA GCCCAGCCAC TCTACTCCTA AGTATITACA CAAGAGAAAT GAAAACGTGT CCCCACACAG ITGTATITAA AGGTGATGGT TAGCCTTGTG TGTCAACTTG GCTAGGCTAT AATACCCAGT TACTGAATCA AATAGTAATC TAGGTGCATC TGTGAAGGTA TTTTGTAGAT GTGGTTAACA GCTACAATCT GTTGACTTCA AGTAAAGGAG ATTGCTCTTG ATAGTATGGG TGGGCTTCAT CCAATCAATT GAAGGCCTTA AGAGCAAAAA GTAAGGTTTC CCGGAGAGAA AGAAATTCTG CCTCAAGACT GCAGCCTCAA CTCCTGCCTG AGTTTCCAGT CAGCCAGCCA GCCTAAAGAT TTGCTAGGCA TTATAATCAC ATCAGCTAAT TTCTTAAAAT AAACCTCTTT ATATATATTG ATACAATGAA TGGTTATAGC AGCCTTATTT GTAATAGCCA CAAACTGGAA ACAACCTAAA TGTCCTTCAA TAAGTGAATA CATAAACAAA TTGTGGTATA TCCACAATTT TTACGCAGCA GTAAAAAGGA ATAAATGGTT GAATAAGGAA TAAACACATA ACAAGGATGA ACCTTAAAAC CGTAAGGCTG AATGGAAAAA GTCAGACAAA ACTAATACAT ACTGAATAAT TCCATTTATA TTGAAGTICT AGAAAATGAG GACTAACCTA TAGTAACAAA AAGCAGAAAA ATTTTGCCCA CTGGTGATGG AGGGGGCGCA GGTATTGTAG AGTATCTGAG AAAGGACAAC TGGATAAAAG GGGGCACAAG AAAACTTTTG AGGGTGATTG ATATGTTCAT
TATCTTGTGG CATGGTTTCA TAGGTGCATA CATATGTCAA AACATCAAGT TATACACTTT TAAAATGTTC AGTTTACTGT
ATATCTATTA TACTTCAGTA GAGAGGAAGG AAGAAAGTGG GCAGGGTGGG GGAGAAGGAAA GGAAACGAGG GAGGAAAGGC CCTAATAGGA AGGATTTTGG AGTTTAGATT TTAAAATGAT AAAGGATGTT TGACACTCTA GGCATATGAC GAATATAGGA
TTATGAGTCC ACAAAAACCA CCAGGAAGTC ATGTATGTTT ATACTTTTAA GTGAAGGATC AGTGGATTAT CAACTCCCTA
ATGCTTTGCC TCTCTATGAC TGGCTGCTGT CCTTCTCATC CCAATACTCC TTCCAAAGCC CCTTGCTTAA ATGTAAGCCT

```
TCTTTCCTCC TTTCAACACA TCCTGCATTC CGTGACAAAA TAAGTTTTCC TTAAACAGAA TGTACAGCAT ATTATTTGTA CAATTAAAAAA TTTTTGGCCA GGTGTGATGA CTCATGCCTG TAATCCCAGC AATTTGGGAG GCCGAGATGT GTGGATTACC TGAGGTCAGG AGTTCGAGAC CAGCCTGGCC AACATGGTGA AACCCTGTCT CTACTAAAAA TACAAAAATT AGCTGAGTGT
        AGTGTGGCAG GTACCTGTAA TCCCAGCTAC TCAGGAAGCT GAGGCAGGAG AATCGCTTGA ACCTGGGAGG TGGAGGTTGC
        TGTGAGCAGA GATCAGACTA TTGCATTCTA GGCTAGGAGA CAGAGTGAGA CTCGGTCCCC AAAAAAAAAC ACATTTTTTT
        TTAATGTTTC CTCCTTGCCT GTAGGAAAAA GGCTCTGACT CCTTAGCCTG GGCATCAGAG CTCTATCTAA ATGGACTTTA
        ACCTGATTTT GTGGCACTAA TTCCATTGCA GTACTTGTCC GCTCACTGGC CTGTGCCTCT CTGCCACTAT TTTTGGAATA
ATGTCCTCTC TCCATCTTGT TTACTCAACT ATATCCAACC TCTAAGGCTG TGCTCCTACA AAGCCTCCCC TGGCTACTTC
        AGCCCACAGA GATATTTAAC TGCTCTGCAG TTCAGGACAT TCTTCTGACT CTTTAAATCA CATTTACTTA TATATGATCT
        AAAAATAATT ATAATGTGGT ATATCTGTGA TAGAAGTATT AGTGCAGAGA CCATGGGGAA CATAATCCAG CCTGGAAGTT
        CAGGAGAGAT ACGTGGAAGA AAGGACGTCA GAGCCTTTTT CCTACAGGCA TGGAAGAAAC ATTAAAAAAA ATTTTTTTTT
        TTGAGATGGA GTCTCACTCT GTCTCCCAGC CTAGACTGTG GTGGTGCGAT CTCTGCTCAC TGCAACCTCT GTCTCCCGGG
        TTCAAGTGAT TCTCCTGCCT CAGCTTCCCA AGTAGCTGGG ATTACAGGTA CCTGCCACAC ATGGATGATA AATATGATCA TATTTTCTTG TTCTTTTCCT CCTCAGTTGT CTTCCCTGAA GAAAGGAATG CCTTTTATAG ATGACAAACT CCCATTCTCA
        AGAACAAGGA TITTTGACCA ATTTAATTTA ATCAGATGTC TGGCTTTGAC CTAGAAACAC AGTCACGAAA CTTGGTGATT
        AGAGACCAAT TCCCAAACAT GAGCATTTCT TAGGAAACAC AGTAAAGATC TGAGAGACCC AAGAGCAGAA GGGCGAGAAA CCAAAAGCCA TCAGTTTGCA TAGGAAACAC CTTGTTTAGC CTAATCTTTT TATTTTTATT ACTCTATTAG TCACTACAAC
       TATTITCTGA TIGCTATGGT GATAGATGGT TTAAAACAAG CCTTCATTAA GAATTGTCAC ACCATGGTCT CAGTCAAAAA
CACCAACATT TITATTGGTA TTGACAATTA TGGGAATATC CAATTCCAAG AAGACAAGGA GACCTCTGAA CTTTCTAAAT
GAAGACTCCA ATCTTCCTGA TCTGATGGGA AGCAGCTTGG CAAGATTACC AACCACCACC ACAGAGAGTG GACTCTAAGC
20
        TAAGACTTAA AAGATAAGTA GAAATTATCC AGGTAAAGAT GTGTACAGAG AAGGAAGTAC ATCCAGGGGA AAAGAACAAT
        ACGTGCAAAA GTACGGAAAT GGTAAAAAGT AATACTACAT AGTCAAAGCC AAGCAGAGTT CAGAAGGGAT CTGGTGGTGA
25
        AAAATACGGC TAGAGAAAGC AGCAAGGATT GGCTTCTAAA ACCTATGTAG TATCTTGGAC CTTACCCTAA ATGTAATGAG
        AAGCTICTAA AGAATCTTTC ATTTATTCAT TCATTGAACA AATATTTTGA GGCTTTCTGT GAAGAACATC ATTCTAAGTA GTAAAGATAC AGCAGTGAAT AGGACACATA AAATCCTAGA TCTCACAGAA TTGACATTCC AGAGAGGGAA AGGTAGACAA
        TAAATACATA AACAAATCAT TTAACAAGAT GATTTCAGAC AATGGTACGT ACTGTGAAAA AAATGAAACA AGGTAATGGA
        CAGCGAAAAG GCACTGGAAG GAAGCCTGCT TACCTTTGCA TGGTTAGAAA AGATCTCTCT AAGAAAGAGA CCACATGTGA
30
        GCTGCGACCT GAAGGATACC GAGAAGCTAG GTGTGCAAAG ATGTGGGGAC AGAACTTTTG GACTGAATAG CAAATACAAA
        TGCCCTTGGG TGCAAGCTTT GCCTGTTCAA GGACCAAAAA GAAGGCCAGT GTGCCTGCAG CATACTAAGC ACAGAGGAAA ACACTGTTAT ATGCTGAGAT TGGAATTATA AGTAGAGCCA GATAATATAG TCTCTTATAG GTCATAATAA GGCAACCAGA
       ATGGATCATA TATGAGAGTA AAAAAAAGAA AATAAATTAA TAATGGTTCC TAGGTTTGTA CCTGAGCAAC TGAATAAATG
GGTGCTGTGA ATTGAGATAA AGGAGATTGA GAATCACAGG CTTTGTTTTG CAAATTAATT TTGAGAGGCT TATTAGACAT
        CCCAGTGGAG ATTCAGGTG AGTGGAGCCC ATTGAAAGGT AAGGGACAGG GTCAGGTGTG GTAGGTCAGG CCTGTGATCC
       CAGGACTTTG GAAGGCCAAG GCAGACAGAT CAGTTGAGCT CAGGAGTTTG AGACCAGCCT GGGCAACATG GGAAAACCCT GTCTCTACAA AATATGCAAA ATATTACCTG GGCATGGTGG CATATGACTG TGGTCCAAGC CACTTGGGGG GCTGAGATGG
        GAGGATCACT TGAGTACAGG AGGCGGAGGT TGCAGTGAGC CAAGATCTCG CCACTGCAAA CCAGCTTAGG TGACAGAGTG
        AGAACCTGTC TCAATAAATA AATAAGAAAC GTAAGGGAAA AGGAAATTAA TCTGATCATT GGCAAATGCA TAGTATTTAA
        AGCCAGGGGA GTAGATGAGA TACTCAAAGT AGGTGAAGAT AAGGAGGCAA TGAAGGCCTA GGACTCTGGT GTACATTTAG
        ATGGTTATAA GAGGAATAGA AACTGGCAAA ATAAGTAACA CTGAGCACCC AATGAGGTGG AGAGGAAAGC CAGGAGATGA
        AGCATCATAG AAGGCAAGAG AAGAAGGGTG TCAAAGAGGC GAGGCAGTCA TCAACTTCTG GGCAGTCAAA TAATATAAGG
        ACAGAAAAGT GACCATTGGA TTTGGAAATA TGATGAGCAC TTTGAGTGGA GTGTTGAGAC AGAAGACCAA TTAGAGTAGA
       TTGAGGAGAT AACGAGAAAT GAGAAAATGT AACCTGCAAG CACAGACAAT TCTTGAGAGA CTTTTCTGTG AAAGGAAACA GACACAGAGT CTTAGCATGT CTTGTCTTTC TATGGGAAAT GTAAATAGTT TGAGATCAGG GATAGTATTT TATTCTGCTT TTTGTACCTC TACATTACCT AGCATAGAGC TAGCTAATGT GCACTTAAGT ATGTTCTCAA TTCTTATCGC CTGAATGACT
        AGAAGAGGAT ACTOGTAGCA GAAATAAAAA CAGCACTGGA GAAAGAAGAG TTTAGATTTT TATTCTTTGG TGTCAGTTAG
        ACAGGAAAGT AAGACATTAG AAGAGTCCTT AGATAATTTA TGTAATTGTT CACTTAGGAT TTTTAAATGT GATCACTGAT ATTGGACATG TTCCTAGTGA AGCATTTTTG GTGTTTCACT GGTTGAAGTT AATAACTGTA AAATTATTTC CCGTTCAGGA
       ATTGGACATG TICCTAGTGA AGCATTTTIG GIGTTICACT GGTTGAAGTT AATAACTGTA AAATTATTIC CCGTTCAGGA
CAGAAAAACA GAAAACTTGA AGCTCCTATT AGAAAGTTCA AGATTCTCTG GGGTTCTTAG GATTTACTGT TCCCAAAACT
CTGTCAAGAA CAAGAAAATG ACCTGTATAC TTAACTGGTC TAGGCAACAG TGGAAAGACA ATTCTCAGAG AAGATTTGTT
TTAAGAAGAC ACTTTCCATA GGAATCAAAC AATAGCTTTC AGTGACTAAC ATGGTAAGAC ACAGGGTGTT AGCTCTTTCC
TTCCAACCTC ATGGCTGTTG TACCTTACCT TTCGACCCCG TGTTCCTGAA ATTGTTAAAT TCATAAACTT ACCAAGGACT
AACCAGCCTC TGGGGAATTG CTGTATACTT AGCAAACTTA CAATGGACAT ATTTATAAGC CATAATGATA ACTGACTAAT
AGGAAATACC CTCAACTGAA AATGAGAGAT CATCATTTGC AAATGAGTTC CCTTGCCCAG GCAACTACTG GGGAAAATGT
CATGCAAGCA AAATTAATCT TTGAAAATCCT CCTTTTCCAT TTTTTTGTGTC TTCCTTTTTCC ATAGGCACCA GAAATATCAT
TCAAAGATAA CCTAAGGGGA GAATGCTGTC TGCCCAACA GCAGGTCTC GACTTCCATTT CAGACACTGT GGCCAATGGC
55
        TCAAAGATAA CCTAAGGGGA GAATGCTGTC TGGCCCAACA GCAGGCTCTC GACTTCATTT CAGACACTGT GGCCAATGGC
       TCAAAGATAA CCTAAGGGGA GAATGCTGTC TGGCCCAACA GCAGGCTCTC GACTICATT CAGACACTGT GGCCAATGGC
TGGGAAACAG GTATGAACAG TAGGTTTCTG AGTCCCTGG AATTATTCCA TTTATGTAGC CACCTCCATG ACAGGAAGCC
TCCCTACTCT TACTTCCCAG TTTGTTCATT CATGGCACCA GGTTGCAGAT TAAAATTTGC TCAGTGACCT TTTATCTAAT
AATGTGTTAC CTTCTTCTCT TAAAAAGTAC AAGGGACAAA TGCTCATGGT ATACTTTTAG GAGATTGTGG CTCTCTATTA
ACAGTATTTA TTCAACAAAC ATTTATTGAG CATTTATATTG TGCATCATGC TAGGGACTGG AACCTAGTAA GTGTAGCACA
TATTATTTCA TTTAATCCTC ACAACAAACC CATGAGGTTG GTTTTATGATC CCCAATTTTT CAGAAGAAGA AACTGATATT
       CAGAACCAGT TAACTAACTG GTTCAAGGTC ATGCAATTTC TAAGATACAG AACCAAGAGT CAAAGACATG ATTTTAAACC
AAAGCTTTTT CTGCTACTCC ACATTGCTTC CCTAGGTGAG ATCTGAGGCA TTCCGCGAAA AGAGAAGGGT CATAAAGCCA
70
        AGGGAAGACA AGCTTAGGAA AAAAAAGGGA AATGTCCTAA ATAAACAGCT TTCCTATTTA CCAGAAACCA CTAGTTTAAA
       AATATAATGG GAAAAATCCT ATTCACTTTA ACAATGTTAA AAAAAAAAA GATAGAAGAA ACATAGGGAT AAACTTAACA CATTTGTAGG ATATGTAAAG AAACTAAAAG ATGTTAATAA TGGCCTAAAG AAAAAAAAAC TTACATGTAT GGGGAGATAG
       ACCATCITAC TGGATTCTAA TATTTAATAG TCTAGGTGTT CCATTTCTCA CCAAATTAAT GTATACATT AATACAATGT CAAACGAAAT ATCTTAGGAA TTGCTTACAA ATTGTCAGAT AATTACAAAG TTTACCTGGG AAATATAAGC ATATATGAAG
        AGTGAATGGG ACCCCACCAC TCCCCCCAAA ACAAAAAAGG TCTGAAAAAGG ACAGAAATCA AGGAGAGTCT TGCCTGCCAG
```

ATACAAAATT CTATTATAAA GGTGTATTGA TGAAAACAAT TTAATACTAG TGTAGCAATA GGCAGCAAAG CAATGAAACA GCATAAAAAG ACCAGAACTA TACCTAATTA TGATGAAGAT TTAAGGTATG ATAAACATGA CATAATTCAA ATCAGCAGAA ATTGGCATAG ATAGGGTTAA GACAAATAGC TAATCATTAG AGGGGAGGAA GGAAAGGAGG GAGGATAAAA TTAGGTTCCT GCCTTCATCT TACATTAAAA TAAATTCCAG ATGTATTACA TTTAAATTTT TTTAAAAAAA GAAACCACAA AATACTTGAA GAAAATATAA GTTGTTATAT AGTCTTTTGA TGGGAATTTT TTTTTTTTTC AGAGACAGGG TCTTGCTCTG TCACCTAGCC TAGAGTGCAA TGGCATGATC ATGGCTCACT GCAGCCTTGA ACTCCTGGGC TCAAGTGATC CTCCCAGCTC AGCCCCCCAG GTAGCAGGAA CTACAGGCAT GCGACACCCC ATCCAACTTA TTTTTTATTT TTTGTAGAGA CAGGGGTCTT GCTTTGTTTC CCAGGCTTAT CTCGAACTTC TGCCTTCAAG CACCTCAGCC TCCCAAAGAG CTGGGCTGAT GGGACATTTT TTAACATAGT GCCACATTAC CATAAATGAA AAGCTTGTAA AATACTAATT TTTAAAACTA ATATATATCA GAAATTTTTA TAAACAAAGT
TAAAAAGCAA ACACAAAAAA TTTGTAGCAC TTATGACAAA TATATGTATA TATATGAATA CAAAAAGGC CTTTACAAAA
CAGTAAGAAA ACAATGAATA CTCCCAATGG AGTATTCAAA ACTAAACTGC TAAAAGCAAT TCAAAACAAA AAACATAAAC TATGCATATA TGTATGTGAA AAAGTTTAAC CTTATCAAAG AAGTAAACTC TCAAAGAAAT AAACATCAAA TAAGGAAATA GCCTTTTCCC ACAAATAACC AAAATCTGTA AGAATACTGA GCTGCGAATG TTTCAGAAAA AAAAAAAAT CATACACCTA GTTCGGCATG TAATTAATAT AGATCAGAAC ACTTTAAAAA TATTTATAGG CCAGGCACGG TGGCTCATGC CTATAATCCC AGCACTTTGG GAGGCCAAGG CGGGTGGATC ACCTGAAGTC AGGAGTTTGA GACCATCCTG ACCAACATGG TGAAACCCTG TCTCTACTAA AAATACAAAA ACTAGCCAGG CATGTTGGCG TATGCTGGTA ATCCTGGCTA CTCGGGAGGC TGAGGCAGGA GAATTGCTTG AACCCAGGAG GTGGAGGTTG CAGTGAGCTG ACATTGTGCC ACTGTACTCC AGCCTGGGCA ACAAGAGCAA TAAAAATATA GATTAAGACT GTACATTGTG GTACAGTCAT ATAATCAATA GTATACAGCT ATTATTTATT TTCAGCCACT 25 GCTCAACAGT CCTCCCACCT CAGCCTAGTG AGTAGCTGTG ACTACAGGCA TGTGCCACCA TACCCCACTA CTTTTCATTT TTTATTTTT GTGAGATGGA ATCTCACTAT GTTACCCAGG CTGGTCTGCT GATCTCAATT GATCCTCCCA CTGTGGCCTC CCAAAATGCT GGGATTACAG GCATGAGCCA CAATATCTGG CCCCAGTAAG CTTTTAAGGC CATTAACATG AGGAACAGTG TTCTTTACAC TATTTTATCA GCTAGGGCTT TGCATGGAGT AGGAGTTTAG TAAATGCGGT TGATGGGTTA ATCAATGTGT GAAAATATTC AGAGCCACCA AAAACAGATA TTATGTCTAT TCTCATCAAC AATCAAAATT GAGTAAACAG CCATTTTCTA ATACAGGAAA CCACAAAACA TTGAATGGTG ACATTAAAAA ATTCCCCCAG CAGGAGCCAA CCAATTTTTT CATCCTGATC CAAGTTAGCA AACTGCAAAA GATAGGAAGC ACTAATGAGT GGAAATTTGA GTAGAAGCAT TTCTTATGAA GGCTGTCTTG
ACTGGATCAC ATTTTTATTG CTGTTGGAGG TGCCAAATGT GTGTGTTTAT GCTAATCCTC CACCTCAGGC AACACACAGT CAAGGATCCT ACCAAGTGTT ACCGTCAAGT GTCTGTTGGC AGCTCAAGGC CCCAGCGTTG TTCCCTTGCA CTAGGGAAAA GACATATICC AGGTACAAGT ACTCCACTT TGATGCTACA GAGGAGTTGC TGAACTTTGT GTCATTAATC TCTCTTCGTT
AGATCCCAAC CCTGTTTAAA TCCCACTATC TGCCTACTCT GGGTCTTCAC CAATITACTA GATCATAGTT GGAGAAAATC
TACAAAGCCT TGCTCCCTTT AGATTTAAAC AGGTCTCCGT TTAAATTTAG AATTGCTAAC TTCAAGCGGG CCCTTATGCG
ACAGTATGCC TGTCAGTCAT ACTACATTTC CTCAATTCCA TTCATGTGAC TGCTCCATAC CCTTCCCTCT CTCTTCATAC TACTATTATC TCTTCCCCC TCCCTCATTT TTAACTGATG ATCTTGTTTC CTATTTCTCT GAGAAAATAG AAGCCATCAA AAGAGAGTTT CCACAAACTC CTACTGCCTT ATCTAGCCCT GTACCATATA CTTTGCATTT CCTCTCATTA CCATGGATGT ACTGCCTATC TGTGCTTCTA TCTAAGGCTA ACCCTTCCAC TTCAGTTTTG AATATTATCA GCTCTTACCA ACTCAAGGCC ATTGCTCTAG CAATTCTCTC ATTCTCTCTC ATTTTCTTCC ATCAAGTTTT CCTTTTCTTC AATTAACAGA GTAGCTCCTA AAGGGAAAAA AAAGTCTTCT TTTTCAATGC TCATCATCAC TGGCCATCAG AGAAATGCAA ATCAAAACCA CAATGAGATA TCATCTCACA CCAGTTAGAA TGGCAATCAT TAAAAAGTCA GGAAACAACA GGTGCTGGAG AGGATGTGGA GAAATAGGAA CACTITIACA CTGTTGGTGG GACTGTAAAC TAGTTCAACC ATTGTGGAAG ACAGTGTGGC GATTCCTCAG GGATCTAGAA
TTAGAAATAC CATTTGACCC AGCCATCCCA TTACTGGGTA TATACCCAAA GGATTATAAA CAATGCTGCT ATAAAGACAC ATGCACACGT ATGTTTATTG TGGCACTACT CACAATAGCA AAGACTTGGA ACCAACCCAA ACGTCCAACA ATGATAGACT GGATTAAGAA AATGTGGCAC ATATACACCA TGGAATACTA TGCAGCCATA AAAAATGATG AGTTCATGTC CTTTGTAGGG ACATGGAGGA AGCTGGAAAC CATCACTCTC AGCAAACTAT CACAAGGACA AAAAACCAAA CACTGCATGT TCTCACTCAT AGGTGGGAAT TGAACAATGA GAACACTTGG ACACAGGAAG GGGAACATCA CCCACTGGGG CCTGTTGTGG GATGAGGGGA GTGGGGAGGG ATAGCATTAG GAGATATACC TAATGTTAAA TGATGAGTTA ATGGGTGCAG CACACCAACA TAGCACATGT ATACATATGT AACAAACCTG CACGTTGTGC ACATGTACCC TAAAACTTAA AGTATAATAA AAAAATATAT ATATATATAT AGGTAGATIT GAATITCAGA TAAACAACAA ATACTITITI AGTATGTCTA CTGAAATATI TGTATCTTAT CTGGCAATIC TACCTGGTAC AGAACTAATC CATTCTCTTG AAAGATCTTG ACTCTGTAAT AAGTTCTTTG GTGATGGAAG GGAGGTATTT CTGTAATTAG AGTCACTGTC TTCCTCCCAG TTTTTTATCC TGGCCCAGAT CTGCAATGAA CACACGACAG AATCCAGGGG

	GGATGAAGAT GGGTGCTTTG CAGGAAAAAA AAATTAAAAA CATCTGAAAA AGCTTTTGTA CTAAAAGAAT GTGATCTAAA
	AAAGAAAGCA GGAGAACTTT CTGTCTGCAC TTTACATCAG AACAACCTTG GCGTCTAGAA GCTGTGCCCT GTGGGAAGTG
	GTGGTGCTTG GTAAGAGATG CCAGGACCAG TGGTACCCAC TGGGAGCACT GCCAATACCC AGCAAGGAGC ATGGGTGCAC
	AGTAAGGCAT TGCACTGTGA TTCAGCATAA AATAACAATA AGGGAACGTC ACGGAGAAAA GGCCAGACTT CCTTTGTTTA
5	GAATGTGGGA AATGTCTTCT GAAAAATGGT AGTAAAAAAG CATGCTTGGA TGGTCCACTC CAGGCAAAAC TGACTAATCG
	GGGGTCAGGO ATACAACCCC TGCATCATAT GITTGTTTCT GTTGGGCTGA CATGAGGTTC ACTGTGACCA CTGTGGTTTA
	ACCCCATAGT CTCCTGGAAA TACAGCCAGG TCAAGAGAGC TCCACATAAA ACATAATCAA AAAAATAAAC TCAAGTTTCC
	ACTGATCAGC TTTTCACAAC TCTTATCCTT TCACTAACTT TGGAGCAAGA TTTGAGAATT GGATGGCTAT TTGAGGGCTA
	TITCIGCGCT TIAGITCAAT GTTTTGTTCT TICTITATIA GAGAACTATG GTTTTTTATT ATATITACAC TITAAGTTCT
10	AGGGTACATG TGCACAACGT GCAGATTTGT TACACAGGTA TAAATGTGCC ATGTTGGTTT GCTGCACCCA TCAACTCGTC
	ATTTACATTA GGTATTTCTC CTAATGCTAT CCCTCCCCA GTCCCCCACC CCCCGACAGG CCCTGGTGTG TGATGTTCCC
	CITCCTGTGT CCAAGTGTTC TGTTTATGTG ATAGATTACG TTTATTGATT TGTGTATGTT GAACCAGCCT TGCATCACAG
	TCACTTGCTT ACAAGAAACA AACACTTCAC AGATGGATCA TTATGTGTGA TAAGTGAAAT CCAAGGATTT ATGCTCAGAG
	GTGGGCTTAA CAGGTAGGAA GAGCAGTATT TTCCTTCAAC CATGAGTGTA TGCAGGTTTT TCTTTTCTTT
15	AGTCTCACTC TTTTACCCAG GCTGGCGCGC AGTGGTGCGA TCTTGGCTCA CTGTAACCTC TGCCACCTGG GTTCAAGCAA
	TITCTCCTGCC TCAGCCTCCC AAGTGGCTGG GATTACAGGC ACCTGCCACT GTCTCCGGCT AATTTTTGTC TTTTTAGTAG
	AGATGGGGTT TCACCATCTT GGCCAGCCTT GTCTTGAACT CCTGACCTCA TGAATCATCC TTCTCAGCCT CCCAAAGTGC
	TGGGATTACA GGCATGAGCC ACTGCGCCCA GCCCACAGGT TTTTCAAAGA CTAAACTTAA AAAAAAAAA AAAATTTCCC
	AATGAAATAT AAAACTAAAG TGCTAAACTG TGATAGACTG TTTTACAAGA ATGCCAGTTT TCACAAGTGT CTATAGAACA
20	TOTAATTTAG ATAGGTAAGA TGAAATTTTG ATAATATTTG ATGGCAAATT TAAACAGGTA TACAACAAAA ATAAAATTCT
	AAGCCCCTCA ACCAACTGAA TGGACTCCTT CTCTCAGCCA AAGGAATACC AAAGTAAACC TGAAAAACTA GTTTTGGCCA
	GGATTGGGGG TAGGTGGGGG AAGCCCAACA TGACTCATTA TTCTCTCCTC CCTTTGGAAT TCAGGCACAA CTGAATGTCA
	GCATTGACAC TAAAACACAG ATCTTAAGAC TGACAAGCCA GACTCTTTGT AGCAGAGAGC CAGGCCCTGG AAGAAATCAA
	GTTATTTTAT CCCAAAAAAT ATTTCTTTGA TATATTTTCA AATGGCCCTG CAAAGCTGTC TCTTGTGGGG AAAATTGACA
25	TGCTGTACAG AATTTCCTTC TCTTTCCAAG TTTTTACTGA TCCAGGAGAG ATTTAACTAA GAGGCTAGCA TGTTTTTTTT
23	TITITITITIT TGAGGCGGAG TCTTGCTCTG TTGCCCAGGC TGGAGTGCAG TGGCGTGATC TCAGCTCACT GCAACCTTCG
	CCTCCCGGGT TCAAGCGATT CTCCTGCCTC AGCTTCCCGA GTAGCTGGGA TTACAGATCC ATGCCACTAT GCCCAGCTAA
	TITITIGIATI TITIGIAGAG ACAGGGTTTC ACCATGTTGG CCAGGCTAGT ATTGAACTCC TGACCTCGTG ATCCGCCCAC
	CTCGGCCTCC CAAAGTGCTG GCATTACAGG CGTGAGCCAC CGTGCCCAGC ACAAGACATT TACCGTCTAT TCTCTCTGAA
30	GCTACTATCT AGAGGCTTCA TCAACATAAT AAGACCCTTG GTCTCCACAA CTCCTTATCT TATCCTATTA GTTTCTACTG
30	ATTCCAGGTC TITAGATAAT AACACCTTT TCAACCAATT GCCAATCAGA AAGTCTTTGA ATCCACCTAT GACTTAAAAG
	CCCCACTCCT TCAAGTTATC CCGCCTTTCT GGACTGAACC AATGTACACC TTATATGTGT TGATGGATAT CTGCCTGTAA
	CTTCCATTCC CCTAAAATGT ATAACATCAA GCTGTAACCC AACCACCTTG GGCACATGTT TTCAGGAACT CATGAGACTG
	TOTTGCAGAC CTTGGTCACT CATATTTGGC TCACAGTAAA CTTCTTTAAA TATTGTATAG AGTTTGGCTT TTTTCATTGA
35	
33	CACAGGAAAA ATAAAGAATT GGAAGGTCTT TCATCAGTCA CTGAGCCAGC TTCATATCTG ACTGAGGTCA TACAGTTCAG
	TGATTTGTAG CTTTGCTACT TAGATTGCTA TCCATTATCT AGAAGCATCA GGATCACGTG GGACCTATTG GAAATGCAGA
	CTITCCTCCT AGAACCCAGG ACCITGGAAT ATTCTTGGCA CATAGTAGGT GCTCAATACA TATTGAACTC CTAGGTGCAA
	TTCATTAATT CATGAATTAA TGAATTAACA CGCTCTCAAA GTTTAGTGCT TTTTCACAGA CTAGTCTTC TGCCTCTTAA
40	GCACTCAGCT CACCACGCTT CCAGTCTCAC TCCCCTATTA GTCTGATTAA AATCTGCTTA CATGTGAGTC TGAGATCAAG
40	TGTTATCTCT TCTGAGAAGT CTTCCCTCAC TGGCCCAAAG GAATTTCTCC TCTATTTTAG CACTGTCCCA GTTGACTTGT
	CATTATTCTA GTCTTTTTCA TATTAGTTGT TTTTCATATA TATGTTATTA AGGAAACTAG TCATTTCCCC TAATAGAACA
	AAATTGCTGG CCTTTGGGGT TGGCAATGGA GGGGAGGCTC TTCTTGAAAA GGGGGAAGAG TGTTCTCCTA ATATTTTTCT
	TACGAGATTT ATGTTGCTCA TCTTTAGCCT TTAGTCCCCC ATTGCCTGCC TACAGTTGGC AGAGACCATC TGTTCTCTCA
4-	CTGTCAGGAA CTGTCTCAAT TCTTGAAGTT CAGAGTCAAA AAAGAAGCAA GTTTTCCTAG CTCTTTGATC AACTTTCAAA
45	GTTTTACTTC CATTTGAAAA TTTACTAAGT CACCAGGAGA TGGTTTATAC TGAGAAATAT CCACTCATAC TCTTCCTCTT
	CAACTITCIT CCATATACAC CCTATTACAG GGATATAGTC TTACTCTATA GCTCAAAAGG ATGACCCTAT CAGAAACCTG
	CACAGTATGT AAAACATTCT CACCAGAGGT TCACTTGTGT ATTTCCACCC TAGAATGGAA GCTCTACAAA AGCACAGAAT
	GTATCATTIT AACTITAGAT TCTATTITCA CACCCAGTGC TTGACACATG ATTTGAAGTT AATATTTATT TATCAAGTGA
	TIGTTTTAAA ATCATGACTC ACTCAACAAA GTTATAAGAA TAAGAATAGT GTTACAGAAT TGGTATACAC AAGCTGACCA
50	TAATCAACAC ACCTATTATC ATTTTTTTGC GACAGGITCT CGCTGTCTCA CCCTGGCTGG AGTGGAGTGG CATGACCACG
	GTTCACTGCA GGTTTGAACT TCCAGGCTCA AGCAATCCTC CCACCTCAGC CTCCCACATA GCTGAGCCCA CAGGTGTGTG
	CCACCATGTC CAGCTAACTT TTTAATTCTT TGTAGAGACA GGGTCACCCT ATGTTGCCCA AGCTGGTCTT GAACTCCTTG
	GCTAGAGAGA TCCTCCCTCC AAGGTCCCCC AAAATGCTGG GATCTCAGGC AAGAGCCACC ATGCCTGGCC ATAATCAATA
	CACTITITAAG AATGCTAGAA TGTTATATCA GATGCATACT TCAGCACTAT CTCAAGCAAA CTGGGGTGTG GGTTATTCTA
55	CATATAAAGT TCAGCAGTGT TGTTCCACAG TCCCAAACTC CAACTGAGGT CAAATGTAGG GTGCAGCAAG GTCACTGGGG
	CTGTCATCAA GGGCCTCTCC TTGCACTCTT GCCAACCCTG TTTCTTGATT GTCTCTACCA CCATGAGTCA CCAGCAATCT
	CCCACAGTCA CTTGTTTAAA AGTTCACAAG TATTGTGTGA ATTGCAGGCA ACCCCTTGAC TCCCTGATTG CCTGGTCTTC
	TTCCTTGGGC TCTACCATTT TTTTTCCCCA GCACTCTTC TGCTGCTCTA AATTTTAATT CATGCAATTC CATATGTGTT
	TCTCTATCAT TCTTCATCTC TTTCCTCTCC CTTCCATCCA
60	TTTCTCTTTT TCTGAGAAGG CTTGAGTCCA AAACTCTCAG TTACCTGTTG TTCTGTTTCC CGTTAGTTAA TCTCCGAACC
	TTCATAAATT AAATCTGACA AAGTCCCCTG ACTAACAAAG GAAATGCACA AGTCACAGTA AAAGGGGCAC ACACAGAACA
	CAAATAGACC CAGGGTCTTT TCTGTTCATC ACTCAGCTTT TTATAGGAGA TCCAGGAGAA ATGAAGTGGA AAGGGAAGTG
	TGTTGAGTTA CTATACAACA CAAGAGTAAA CTTTCTTATA AGTGGTAATT TTTTTTTACA GGAATAATTG AAAATGGAAA
	TTACCTTCTC TACTCATAGT AAGTACTCAG TGCGTTCTTG ATGGGATGAG AATGTGTTTG AGCTTTAGTG TAAGGCAGAA
65	TTCTGTTTAG TCTGCCAGTA TTGGAGAAAA ATAAAACACA AAGGGACTGA CATGTAGGAA GTGGCACCTG GGAGGGTCTC
0.5	AATTCTTCCT ATTACAAAAA TGCCCCAGAG AAATAAAAAAG CTTGTGTACA TGTTGAGATG GGAGAGTTCT CTGGCCCCCC
	TCGCAGGATG TGTGACAGTG GGGTGGCTCT CTGCTGCGCC ACCATGAGCT CAAACCCCTC ATAGGAGGGG GAGCACACAG
	GCAGGAAGGT GCAGGAGCTG GGCGAGCTCT TTGGGCTCTG GCCCCGTGGT ACTGTCTAGA GGTGGGTGCC TGCAACTCCT
	GAAGCCCAA GTGGGCATGT GTTACAGTGC ACTCTTTCAG CTTTGCTGTC TGCAGCTTAA GCGTTAACCA GCTCAGTTTC
70	TICTIGGTAC CCAGGICCIT GITACAGIGC ACICITICAG CITIGGIGIC IGCAGCITAA GCGITAACCA GCICAGITIC
70	ATGGAGTGGT GGAGGTGGCT CTCAGTGGGA TGGATGGGGA GCTGGAAGGG GGATGGAGTG GGAAGATGAT ATTCTCCTGG
	AGTTTGGCTG TCCAGCAGCC GATCTCCTCT CCAGTCGTCC CCAGCCTCTC GACGTTCAGA TGCTCCTCTT CTCTCCTTCT
	CTGCCATGCT GTTCTGCCGT TCATCTGCCT GTCTCTCTCT GGAGCCTGGA ATTTGGGGTT TATATGGTAC ACAATAAGGG
76	GCATGGCAGG CCAAAAGGGA ACTITITAGG TGCAAAAAAC AGGAATGCCT CTTCTCACTT AGGGCTATAG ATTITTCAGGC
75	TTGAAGGTGG GGCCTTTACC AGCGAACCTG TATTTCCCTG TCTCCTGTGC ATATCAATGT AATCAAATAC TGGGCTGATC

CAGGATGTTT CTTTAGACCA ATTATGGGTA AAATAATITA CATTCAGGTT TTTATATTTG CTTTTGTCAT TTCTTTTTAA GCAATCATGT AAAATATCTA TACGACAGTA ATAGATGATA GCGAACCTAA TTAAAATTAC CAGAAACTTA AGAATCTCTA ATGATTICAA CIGTAACTAA GGTTATITCI CITTATGTTG AACAATGTTG GGAGATAAGA CACAAGAGTT TCTGAAGTAT TTCAGAAACA CAAAGAGGGA GGTTATATAA ATAATATTIT TTTCCTACTT TGGGAAAATG AAAGCTAGTC ACAAAGTTAA ACGAGTGGTT ATTTTAATAT TTAAAATACA GGCTTGGATG TATTTCCTTGT TAAAGAAAAT AAAATGCAGA ATATTCAAAA CGTCTGACCA CCCTTCTAAG AAAATGCATC TCTGAGGTAT TTTTCCTTAG AAGTTATTGT AAAAATCCTG GAGAAGCTTG AACACAGCAA AGCAAACAGG ATGCAGAGTT TAATCTGTGG AAAGCTTAGG GAAGAAAAGC AAATCATTAA AAATAGGTCT TCCTCTGAAG ATTTTTAAAA CGCAAAGAGG GTGGAATAGC AATGATAATA AAAAAGCTGG CATAGAGAGT GGCACAATTT GCTGTGCCAC TGAGCTGACT GGATGTGTTC TGAATTTCTA GGCATTAGTG TACCTTTCCA CACGCATTCT CCCTTTAAAA 10 AAAATGCCCA CACACTGAAT ACTITITICA TGCAATTTAA AATAAGCGCA CCATCTAGTT TACAGAAATT CACTAGAAGT TATITATCCT AAAATAGCAG AGATCTAGAA GAATTTTGAG CTCTAGGACA TTTTAGACAC ACAGAAAGAA GAATCTGGAC AAGTCTTGAC CAGACATGAC AGAATAGAAA TTTCTTTTCC TATITATCTC TTTGAATAAA ATTTTCAGGA TCTTACAGTG GACAAGTTTG TTATCTACAC ATTGTGAAGC ACATTGATTT CTCCTCTGTA GCCTTAGGAA GATCTGAGAG GTGACTGAGC TGATTGAATG ATCCGTGACC GCTCTACTGG GACCAGTAGT AGAACTTTAC TGGTGGAGAC CTGCTGGAGG TTTGAGAGCA GACTTTGAAA ATTACTAGAG CTACACAGAT ACTGTGTGGC TAACTGGATT ATGTTTAGAG GCTTTCAGAA CTATGCTGCT GCTGCTGCAG TGTAGCCAGG ACGCACAGAG AACATCTAAG GCTCTTGAAT GGGGCGATAG GGACAGATTT CAGCAGCCAT TTACCCCACC ATTCCCCCTA TCATGGGGCT GAATCTGCCT GGAGGAAGGA GCATCTTTAT CTTTGTACTG TGAACCACAC AGTCTAGCAG CAGCACAGCC AAGGCACTTG GGGTTTCATG AGACTAAGTA CATGCAATTC TATTGTAAAG GCTTAAAATA TATACAACTG ACCCTTGAAC AACATGAATT TGAATTGCAT GGTCAGTTAT ACGCAGATTT TCTTCCACCT CTGCCACCCC TGAGACAGTA AGATCAATCA ATCCTCTTCC TCCTACTCCT CAGTCTACTC AAAGATACTT GAAGTCTACT TGAAGATGAC AAGCACAAAG ACATTTATGA TGATCACTT CCACTTAGTG AATAGTAAAT ATGTTTTCTC TTCCTCCTAA TTTTTTAACA 30 CTTTCTCTC TCTAGCTTAA TTTATTGTTA AGAATACAAT CTATAATACA TATGACATAC AAAATATGTC TTAGTTGACT GTTTATGTTA TCTGTAAGGC TTCAGGTCAA GAGTATGCTA TTAGTGGTTA AGTTTTCGAG GAGTCAAAAG GTGTATGTGG ACTITICAACT GCAGGGGGT GGGCACCCCT GCCCCCATGT TGTTCAAGGG TCAACTTTAC TGCCAAAGGC AAGCCTTTAC ATCCACTTTT TCCATCCAT CAGTAAATGG AAAAAGATAG CTACAGTATC CCTGCGTCAA ATCTTTTTT TTGCAGATCA CAAATTGGCC ACTCACCTTG CTCTGTGAGG GGTAAAATGC CCCACTTTCT TTAGTAATAT TTAAGTTAGA TAATATTTAA 35 GTTATAAAGT TGTTCTTTGT AATCGTTAAT TGTAATTTTT ACATAGTTTC TTTCAAACAG AAATAGCATT TTTGTTAGAT AACCTCCCGT ATAGATGATG AAACTCCTTT TAAGGGCTAT CTGAATTTTA ATTCCTTGAA AAGGCAGAAA TIGGATAGCT AGTAGTCATA AATGTACTGT GGCTTCCCCC AACCATCTGG GCTATATAGA AGCTGCATCC TTGGACTGCA GTAGAGGAGT CTTACAAAGC ACAGAGCAAC TTCTCTCCTG GGTTGCGCTA GTTATGATGG CAATTTTAAA TGTGTACTTT TACCCAAAGA AAATCCTTAT TATCAACAAT CACAATGCCA TCATAACCAT GGTATAAAAA ATTCAAAATG TCCCAGCTGA AGTGGAGGCA AAGACTCAAG TTCATGGAGT CAGAGTTTCC TTGCTATTCC TCTTTTTCAA ATGACCATTT AGTAAGCACC TGAAGAAAAT ACTATGGACG GCATTGAAAA GTGAAGATAG GTTTAATCTT CTCGAAAAATC TAATTCTCCA GATGAAACGC TGACACTTAT CCACCCCACA GACCCTATAG CAGATGTGTC ACTGGCCATC ACATTTGACA CAGAGAAGTC ATAACTCAGT CAGCACAGAG ACATTTCCAT GAGTTTCTGA ACCATGGACA GAACGTCGTC TGTGGGACAT GAAAACTGGA ACTTAGAGGA CAGGCACATC TGAGAAATGG GCAGTTTAAA GGCAGAACAT AGCACATATG TGACTGGGTT TTAGAAGCAA ATTTACAAGA CGCACTCTTC TTCATCCTAA ATAATCTGCA ACCAAAGCTT CCAAAAAAGA CAATTTAGGA ATGCAGAGGT GAGGAGTAGG GAGGGGAATG GGATGAGAGA GAGTGGAGAT TAATGGTGGG CAGAGCGAGG TTTAGAACTT AGTGGTTTCT TCAGGTTCTG AACTGAAATT TGTATACTGT AAAGGCACAA ACACCATTTT TAACAAAAGT GAGCAGGACT TCCTATCTGG TTCAGAAAAT AGGTGAATAA ATAGTACGAA TTATTAAAAA TAATAATTTC CACTTATACA TAGGAAAACTT GATAGGAACC ATGATAAATG CTTAACTCTT AATCTTCAAG GAACTCTGCT AGGGATATAA TATTATAAAAT CTTGTTTTGC AGATGGAGAA ATTGAATTTT AACCCAAGTT
ATCATAACCC TTAAATGATT AAATGATACT GTTACATGAG AAAGCTGCGT ATCTGTTTCC TGGATTTGTA GCCATAATTT
GTGTCTCAAG TCCCTTTTGC TGCCAGCTAT CTTGGGTAGG TGTGTTCCCT TTGGGCTGTT TGATACCCC ACATTTATCT TTTTTTTTC TCTTTTTTG TTGAGAGAGT CTTTCCCTGT TGCCTAGGCT GGAGGGCAAT GGCGCGATCT CGGCTCACTG CAACCTCCGC CTCCTGGGTT CAAGTGCTTC TCACGATTCT CTTGTCCCAG CCTCTCTAAT AGCTCGGATT ACTGGCATGC ACCACCACGC CCACCTAATT TTGTATTTTT AGTAGACAAG GGGTTTCTCC ATGTTGGTCA GGGTGGTCTC AAACTCCTGA
CCTCAGGTGA TCTGCCTGCC TTGGCCTCCC AAAGTGCTGG GATTACAGGT GTGAGCCACC ATGCCTGGCC CCAAATTTAT CTITAATGCC CCAAATTATC TAGTTCCCAT GACTGGGCTT CTGCTTTGAT CCTTTCTGCA CTTGCTGGAC CCTCTCCCTG CTACACCCC IGCIGATOR ACAGGACACA GAGCICAGGC AGIATACTE ATTIGCTAC CGCCACTC CIGCCGIGCA
GCTCAGTTCC TACACAGGCCA CGGACCAGTA CTGGTCCACG GCGCAGCAT CAGGGACCCC TGTTGCTAGG TATAAGCATC
TGGCTGCTGC ATGTCTTCTG TGTAGCTACA TCTGTATGTA TATCTGATGA GATATAAATT ATTTGATTAT AAATTACTTT
CTTCATATTA GAGTTGTGAA TGAGTATCAC ATATAATTAT ACATAAACTA GGAATATGCT TTTTAATAAT GTATATAAGT
AAGTTTCCTT AACTATGACT TTCATCTTAG CGTAGTAAGA GGCTGCTAAG AAATATTTGT GATGAAAATA GGCATTGGTA
GAGTTGAGAC CACTGGGTGA TGAAAGAGTG TAAAGATTTT AAAGCCTTCA GATGCTGGTT CAAGGTGAGA AATGTGATTG
GGAGCAAATC AATTAACTTC TTGAAGTCTT ATAGGGCAGT TATGAATACT TAATGTTAAC ATATGTAAAG CTCTTCTGCC CTGTATACAG TAAATGCTAG TTAGCTATTA TGATCACTAC TAAAATGGGG ATGACATAAA CCTCATAAGG TTTTAAGTAT TATGCAAGAT ACTATACAAA GTCCAGTAAA TATCACATTC AATTGAATCC ATGATGTCCG ATTATTTTAG CTACTTCCAA GAGAGAAAAA AATGCTGTCA GTTTTACTGT TCTTATAGAG AGCAAGGCAG ATCCCAATTC CCAATGTGGT AACGTGAAAA

	TITTTGCATT TO	GAATCAACA	AAACACTTTC	TCCTTTCTTT	CCTACTATTT	AACAACTGGT	AAGTCTATAC	TCCCCCAAAT
	CTGGAATTCT C	CTTTCTTAT	TCTTTTTCCT (CCTACCAAGA	CCGCAGGATC	TTTTACTTGG	CTATAAGGGG	TAAACCTCAA
	GTAGTACAAG T	TCTCTGTAT	TACTTTTATA	CTCTGTCACA	GATTCCCTTT	GTTTCCTCAT	CTCCATGTGA	ATTTAGTTAA
	ATTCTCAGCA T							
5	TAAGGCCCCA A							
,								
	TGAGAGAAGA A							
	GGAGAATACC G	GATTTTCTT	ACAAAATGAT	TTCCCAGGAG	ATCTCATCAA	ATGCACGAGG	ATACCTTCTC	AGTITCACCT
	AGTGAGTAAA A	GACTGGTAA	CATAGCTCAC	TTACAATTTG	GATAAACAAA	ACTAAACAAA	CAACATCAAA	ATTTCAGAAA
	AAATAATAGC A	AAACAGAAA	TCAAACACTO	CAAATTTTTG	TCCTTCTGTT	TATTTCATTT	TGGATACTCA	GTGAATGTTA
10	ATTAACCAGG A	AACTTAAAA	GTTATTTCAA	TTATGAACCT	CTTCAATCCT	TCATCAATTA	TTTTGAGTAT	TCTGGTCTTA
	AAAACATCTC T							
	AAGTACACGT C							
	CTGAGGTGAG A							
1.5	GAAAAAAATC C							
15	TTCATCTTCC AA							
	GAATTICTTT GO							
	GCAAATTTCA C	TTTGGCCTT	TGTGAAATAA	GCCAGGAGGT	CAAAGGTACA	TTCCCAGATT	TTTAAGCCTC	CCTCATAAAC
	ACCTGTAATC A	GATCAGAGT	GAGAAGAAAA	GCTTTTTGAA	ACTATGTTTT	CTCCAGGGAA	GTTCTCTTTC	AACAAGATGG
	TTTTCACTAC TO	GATAACTTA	ACATGCTGGA	AACCTGGTAA	TGTTTCTATG	ACTITATITI	CTAACATCTT	CTTTAAATCT
20	TTAGGCATAG C	ATGCTCTTT	GGCAGCTCTC	AAGGAGGCT	GTTTTCCATG	TGGCTCCAAG	TTCCTTGAAC	TGCTGGCTGC
	ACTGAGTGGA C							
	CAAATTGTTC TO							
	AGGGTCAAAG C							
	CCTCTTATTA A							
26								
25	TCAATTATTC A							
	AAATGACTTT TI							
	ATTAAAGCAA A							
	CTTTTTCTTA AA	LAAGTTGTG (GGAAGAGAG	AGAGATAAGA	GATTTGGACA	CTCATACACA	CCTTAAGGGT	TCCAAAGTGG
	GAGAAGAAAA T	CAACTATAA	AAACAAACAG	AAGAACAACA	GCAACCACCA	CCACTACCAC	CTGGACAAAC	ATAAAGTCCA
30	AGATATTCAG A	CAGGACAGC	CTAGCTACTT	GCTGTCTTTC	AGCTGTCTTG	ATTTGTGTCC	AACCATATTC	ACCCCCTAAG
	CTTCCAGAAT A							
	ATGCATAGGT A							
	GTATAGAAGT G							
	TAGTTTGGAG A							
35	CCTCAATTTT CA							
25								
	CCAGTCCCGC G							
	GGAACAAATC C							
	TGGGGATGCT TO							
••	TCGCGCACCA G							
40	AGAAACCAGC C							
	CTGGGCTTTG G	CGGGTCTGG	TTTGAAGCTC	TCCTGTTTGA	CGAAAGTATG	TCTCAGGAAG	GTGCGGTCCC	AGCTAGCGCG
	GTTCCCCTGG AA	AGAATTAAG	TAGCTGGCCA	GAGGAGCTAT	GCCGCCGGGA	ACTGCCGTCC	GTCCTGCCCC	GACTCCTCAT
	ATCCTTCCTT GO	STTGTCACT T	CTACCTAGA	GAAGGGTGTG	GGCGGGTCGC	GAACCITTCT	CITCTGTCCC	TTCAGACCCA
	CCGCCAGGCT G							
45	AGGGGAAGCG A							
	TAGCAGTGGA T							
	TTGCTAGTGG AT							
	GCGAGATACT C							
50	AGGGCATAGT T							
50	CTTTTTCTTC TI							
	CGCTTGTTGT TO							
	CTCATGCCTT TO	GTGGTTGTA .	AATGTGCCTG	GAATCCTAGC	CTTTCATGGT	AAACCATATG	TATATGTATC	TTTTTCACAA
	CATTTGAGCC CA							
	TATTGTGCAG CT							
55	CCCCTTTTTT AG	STTTTTGTG T	AGGTACAGA .	ACTGCCGTCT	TCAAGGAGTT	TCAACITGAA	AACAAATAGC	CACCCTCAAA
	ACATTCAAAA AG	CACTTAAAC	TGCGTGCATA	ATGTGTGTGA	GACATGGTGT	TAGGCTTTGG (GAGAACAGAG	ACACGGAACG
	TGATTCCTCT TO							
	AAACGACATA T	TCAAAAAAG	CCCAAACTTC	CTCTAGTTTT	CTTCATCTGA	GTAAATGGTT	TCACAAACTG	AAACCTTGAA
	TCCTCTCTGT CI							
60	CCATCCTCAT TO							
00								
	ATAATTCATT AT							
	GGTTCCAGGT G							
	CCTACCTCAA G							
	GTCACTTCCT TA							
6 5	TGGCCTGTTC AC	GTTTTCTAA .	AAAGCACATT	ACCATTAAAA	GAAATGCTCT	TGTTTGCTTT	GTATATTTTC	CACTTCTACA
	CATTATGTTG CA	AAAGTTCAT	AAAGGCAGGA	TGTTGATTTT	CTTCACAGCG	TTACCCTCAG	CACCTAGAAC	AGTGCCTGAC
	ACATAGTAAG C							
	TTCAGCTTAA TO							
	CAAAATCTTT T							
70	TTTTGGAACA G							
. •	AGTTAATGAT G							
	AGGACTATGG G							
	GCGATCTCAG CT	COLLAGORAG	CCAUGIICAA	GIGATICICC	CTTTCACCC	CTTCCCGAGIAG	CIGAGATIAC	AUGUACUTUC
75	CACCATGCCC G							
75	TCGTGATCCG CC	CIGCCICAG	CCICCCAAAG	IGCIGGGACI	ACAUGCGTGA	GCCACCGTGC	CCGGCCGGGT	TATICATIT

TCTTATTAAC ATTCTTTGAT GATICTTATG GTGTTGTTAC AGTAAAACAT TTCTAACAAT TATTCTAACA ATTATTCTTG ATGGTGTATA TGAAGAATTT ATTGTCGTGT ATTTGTAAGC TGCTATGTGC AGAAGAATTT CAGTCAAATA AAGTTGGTAA GATAGGTATG TAAGTAATAT GAAAAAAGAT AGAAGGTGAT GAGTGACTTA GGTATAAATT AAGTACAATA GAAATGTTGA GGAAAGAAAA ATTTCTTGTA ATAGAAATCG GAAGTACAAA CTGGGCATGG TGGTGTGCAT CTCTAATCCC AGCTCCTTGA GAGGCTGGTA TGGGAGGATC ACTITAGCCC AGGAGCTTGA GGCTGCAGTG AGGTGTGATC ATGTCACCGC ACTCCATCCT CTGACCTCTT GTTCGCCCAT CTAGGTCTCC CAAAGTGCTG GGATTACAGG TGTGAGCCAC CCCACTTGGC CCCGAGCGAG ACCCTCTCT TAAAAAAAA TAAATAAATA AATCATAAAC CTGTGGATTA TTGTAGCATT GTTCTCATC TGTCAAAAAT ATTTCATGAC TATGCATAGT TTGAAAAAGC AAGTTTGTCC CTGGGCAATT TTCAAAATAT TTCTTTAATG TGTTTTCACA GIGTCATITA GAAAATGCTT TCTAAATTGC CAAAAGCTGA TTGTCTAGGT GATAACAAAT TTACCATTTG GAGGAAGTTG
ACTITCTCAT TTTCATGTCT TCATCAGTCT TACTIGATGA GATTCATTCT TCTAGTCAGA AGAGGTTTA GACTGCTCAG
TTTTACTCATA TTTTGAGTTA GCTTTTCTAT TTAGAGTTCA CTTGGTTGTG GAATATTCAT TTATAATTTG AATCTACGTT
GTGTAATGGG ACCTAATTTT TTTTTCCTTT GTTTTTGTTG GAGTCTCGTT TTGTCACCCA GGTTGGAGTG CAGTGGCGTG
ATCTTTGCTC ACTGCAACCT CCACCTTCCA GGTTCAGGTG ATTCTCCTGC CTCAGTCTCC CAAGTAGCTG GGATTACAGG
CATGCTTCAC CACGCCTGGC TAATTTTTTGT ATTTTTAGTA GAGATGGGGT TTCACCATGT TGGCCAGGCT GGTCTCAAAA
CTCCTGAGCT CAAGTGATCC TCCTGCCTTG GCCTCCATAA GTGCTGGGAT TACAGGCGTG AGCCGCTGAG CCTGGCCCCA 20 25 GAGTTTGTTT TGTTTTGTTT TCAAGACAAG ATCTCACTCT ATTGCCCAGG CTGGAGAGCA GTAGTGCGAT CATAGCTCAC TGCAGCCTGA ACTCCTGGGT TCAAGCTATT CTCCTGCCTC CATCTTCTAA AGTGCTGTGA TTACAGGTCT GAGCCATGAT GCTTGGCCTG TGTTTTTGTT TGTTTGTTTT GGGGGACAGG GTCTTGCTTT GTCACCAAAA CTGGAGTGTA GTGGTGCGAA CATAGCTAGC TCACTGCAGC CTCCATCTCC CACGCTCAAG CAATCCTCTC ACCTCAGCCT TCCAAGTAGC TGAGACCGCA GGTGCGTGCT ACCATGCGTG GCTAATTTTC TATTTATATA TTTATTTTTT GGTAGACCATG AGGTCTTGTC ATGTTTCCCA GGTGGTCTTT AACTCCTGGG CTCAGACAGT CCTCCCGCCT CAGCCACCCA AAGTGTTGGG ATTACAGGCG TGAGCCACCA
TGCGTGGCAT AATTTTTTTT AAGTAAATTA TTTTTTTATC TTGAGTATAG AAGTGATTCA TGTTCATTGT GGAAAATATG CTACTTAATA GTTTCTCTGT ATAGAATGTG GTATTTTGAA AGTGTATCAA GCTTTAGATT GGTAGTATTC TTGCATTTAA TAAAAGGGCAG TGGCCTTTGT TGACTGACAT GACAATATTT TTATAAAAATT TGTTATTTGC TTTACAGAAA TTTTGAAAAAT TATTGTAGAA ATGTTTTTAC CTCATATGAA CCACCTGACA TTGGAACAGA CTTTCTTTTC ACAAGTGTTA CCAAAGGTAT AATACTATTA CCTGAAAATA CATGTTATAAA GGAATCTAGC CTCAGTCTTA GATGATTAT TATTAATTAT GGCTCTCTTT TTCTAATATA TCAAAATATA TCAAAATAAA AATAAGGAGT AAGTAGATCT CATGTGAGAC TATAATGGTG TTAGTGTGAT CATTAGGCAG TTAAAAACTG TTACAGGCTG GGCACGGTGG CTCATGCCTG TAATCCCAGC TCTCTGAGAG GCTGAGGTGG GCAGATCATC TGAGGTCAGG AGTTCGAGAC CACCCATGGT CAACATGATG AAACCTCGTC TCTACTAAAA GTACAAAAAA TTAGCTGGAC ATGGTGGCAG GTGCCTGTAA TCCCAGCTAC TTGGGAGACT GAGACAGGAG AATTGCTTGA GCCTGGGAGG CGGAGGTTGC ATTGAGTCAA GATCGTGCCA TTGCACTCCA GCCTGGGCAA TAAGAGCGAT GCTCCGTCTC AAAAAAAAA AAAAAAAAA AAGAACTTAT ATTTTCAGAT TGTGTGGTTC CTTTACTAAC TGAATTTAAA TTATTTGTAG TCAATTTTAA ATGCTCTTGT ATTTTAAAGC CACTGTACTC CAGCCTGGGT GACAGAGTGA AACCCTTAAT TCAAAAAAAA AAAAAAAAA AAGAAAAGCT GGAATATTGG CAAAATCAAG TAACTAAGAG AAAACATTAA ATTCACAGAA TACATTATTA CATTTTAGAT ATATATGGTA TATGTTTTCT CTGAAAAGCA CAAGCATACC TTTTTTGTTT TAAATGGAGG GAACTAAAGA TACTTTGGTG CCAAAATGAA ACATTATTTG TAATTAATCT CTTATTGAAA TGGGTTTCTA ACTTTAGCTT TGAATCGTAA TCTTTCAAAT TTCTTGTACT CATAGTCACT TGATGATTCT CTATCTGAAA TATTTCTTAG AATTTGTTCT TGACCACCAG AAAAAGATTC AACTGTTACA TAGATGAAAA TGGATGTTGA GTGTTAACAG GCCTATGGGA AACAGTATTT TCTTTAGCTA CATTGTATTG TTGACTGTGT TGCTATTCTT ATAATGTTTA GGTCATTTAA ATTGTTAGAA AGATCCAAGT ATTAAGATCT AGGGTGGCTA ACTITICACA GACAAAAAGC TIGITIGIAA GGICATITAC TATACCCITA ATTCAGGAAG GITAGCITGA ATTGGGICAA AAGGAAACTG GTTAGAAAAT AAGTGAGTAG TGAATAGGCG ATTCAGTGCA AATTCCTTCC AGAAAATACC CTTGTAAATG ACTGTATGAA TGTGGATTCT TCAAGACAGT CAAATTTATT GTGCGAAAGT AATACTTTTA TTTTTTGCAT CTCTAAAACA TGAACTITGA GTGATTITIT AAAAAAATTG ATGCTATTAA ATAGATTCAA ACCATAGAAA TGGAAAATAA ATTTCTGTTT
GGGGCTTTTG GGGGGATTAT GTTGTAAAAA TACCTTTTCT CTGTATTTTG TGCTTAATTA GGTACAATTG TTAAGCTAGA TGATAGCCIG TGGATGTTAC TAGTGCAAAA TCAAATTATC GTATTGTGTT TTCTCTGTAA AGTTTTGTCT TGTCTTTTCT AGTGATTICT CITATTCCTG TITATTACTT GATTTGTTTT TACAGACTGT GAAATTATTC GATGACATGA TGTATGAATT AACCAGTCAA GCCAGAGGAC TGTCAAGCCA AAATTTGGAA ATCCAGACCA CTCTAAGGAA TATTTTACAA GTAAGTCAAA TGTATTAGAA AGCAGGAGAG AGAGGGAGCT TAAAGAATGT CAAAATTTTT ATACTGATAC TGATTAGCTA TGTATTCTTA TGTAATGGCC TAATGTTGGA ATTAAATTTA TAGAATTAAA GACGTGAATA TAGAAACATG AATTCTGAAT AATAAACTCT TATAAGAAGA GAAGTCATCA AGCTAGCTGA CCCTACCTGT ATTTTCAAGG ATATGTGTGG AACACCTGCC ATGTGTTTTG AAGTTTGTGT TAGTATTCTA AATGGCTAGA CAGTTGTTCC AGTATTTGTA GTTCTGATAG ACTAAAGTTC TGTGAAAAGA AGGAAGACT GTGTTTTGTT CATTGCTGTA TTTGTAGCAC CCAGCATGCT GACTAATACC TTTTCAGTGC ACAAAAAATA
TATTCTAAGT GAAATTTCCT TCCTTATTCA CAGACAATG TGCAGCTCTT AGGAGCTCTC ACAGGATGTG TTCAGCATAT
CTGTGCCACA CAGGAATCCA TCATTTTGGA AAAATATTCAG AGTCTCCCCT CCTCAGTCCT TCATATAATT AAAAGCACAT
TTGTGCATTG TAAGGTGAGT AAAGGTCTAA TTATACTTTG AATGGTATAT AATCAATGTG CATAGGGGCT GAGTAAAATA
ATGTTTGTAA AAAGATTTTAC ATTTAAGTCT ATATTATTGA AATAAACTTT TCCATAGAAT AAAGAACATG TAAGTAAATA ATTGTTGCAA AAAAAGTGGT TTTAAGGAAG TCATTAAAAA TGGCTTTTTG GGGTTTTTTA GTTTTATCTT ATTTCCCTC
TATAAAGAAA GAAGTTTAA GAATTTGTGT TGAGACAGAC ACAGGGATCC TGAAATAGTT ATGTCATGTT GCATTGACCA
ATATTCAATT ACCATTATGA TTAGATGTCA GAACTTCCTT TTATAAAGGA AAGTTAATCC TTATTTAGTC CATCTCTACA TGCCAGAGGT AGCCTTGAGG CACAAAAGCT TGCCTAGAAT TTATGGGTCA CAGACAGTTT TAATATTGCT ATTTGTTGGG CGAATGAAAA TCACTAGTTA ATTAATACCT CTCTTTGCTG ATAGGATGCT AAAAATGTCA CGCACCTGGC CTAATGTTAC

۲.

							TGCATCTCTT	
							CTAATAGTAT	
							ATAGTGAATC	
_							CAAAAGCAGT	
5							AATAGGTGAG	
	TITCTGCTTA	GTATATGGTG	ACTATAAATC	ATGTATCAAT	TAAAATTGTC	TCTAATGATT	CATGTTATTT	TCTTACTAAT
							TGTAAAATTT	
							ACTTTATAAT	
							GTTTATATTT	
10							TGAAATAACT	
							CTGTGTAGCC	
							CCTCAGCCTC	
							TTTCACCGTG	
							TACAGGCATG	
15	CCCAGCCAAT	ACTAGTTTAT	TTTTAAAGAA	TTGCTGGTCG	TAACACACTT	CATTGATTTT	ATCACTCATT	AATGGATTAT
	GAACAAGAGT	TTGAAAAACA	ATATAAAGGC	: AAAGTTTGCA	TTCAAAACTT	TGGTATAAAG	AGAGTAAGTT	GGTTTTGTGC
	AGTGTATCAG	GCACCTGTTG	CTCTGCAACA	CACCACCTCA	AAATCTATTI	: ATTCACTATT	TATTTATTCA	TGATTCTGTG
	AGTCTGCAGT	TTAGGGTGGG	ATGTCCTGAG	ACAACTTTCT	CTGATCCACC	TGGGGCACTA	GCTCACCCAT	GTGACTTCAG
	TGACTTCATT	CACATCTGGC	TGTTGGCAGA	GGCAGAAGTA	CTTGAGAAAG	CCATGTGCAT	CATCCAGCAG	GTTCACCCTA
20	TCTCAGATAC	CTGATGCCAG	TGGTTTCAGG	GTTTCTAAGA	GTAGCAAAAG	TGTGAGCAGG	TCGCTGTGTG	CTAGCACTTT
	TCAAGTTTCT	GCTTGCCTTA	TATTATTTA	TGTCCCCCGG	GCCACAGCAG	GTCATAGCGT	TTAGCCCAGA	GTCATTGTAG
	ÄAAAGTGTGG	ATTCACAAAG	GGCAGTCATT	GTGGCCATTT	TTATAAATAA	TCTACCACAG	ACTGAGTAAA	AGCCTTGCAT
	GAATACCATG	GATATTAATT	TGAATTCTTC	CTTTTTAGAT	TTTCTTTCCT	TAGCAATTTG	TTTTGTCATT	TTGGATTAGA
	ATTATATCTG	TAGAATATTT	CAGTTATAAT	AGGGTACAAC	TTTTATTCCA	CTGAACATCT	TTAGTTTTAT	TTAGGTCATC
25	TGGTAGGTAT	AAACTTCAGA	AGTTAATATT	CAATATTTAT	AAAAACCATT	AACAAGTGTG	ACACTTAAAT	AGTTTAAATA
							AATTGTTCAG	
							CTTTGCAGTT	
							AGTTTATAAT	
							TGATTCTTTA	
30							ACATGTAGCT	
							GTACTTCAGA	
							AGTATCCTAT	
							TGTTCACACT	
	TGTACAGTAA	TTTTAACTTT	CTGAAACTGA	AGCATTTTAA	AGGGTCACCA	GGGATAGTGC	CTGTAGCATT	CATCAGATTC
35							ACATACATAA	
							TCAGTGGTTA	
							CTTGGGCTAT	
							GTTATAGTGA	
							ACATCACTAT	
40							AAAAGTAAAT	
							TGCTGCCTCC	
							AGTCTTTTCG	
							TTTCAGTTCT	
							TCCTTACCCT	
45							ATTAATTATT	
							CATTTGTTTG	
							GAAAAAATTA	
							ATGATGCTTT	
							GTGGTGATTG	
50							CAAAGATATA	
• •							AGTCAGATGC	
	TTTGGGCTAA	TAGCATTTTA	AACAGCAACT	CTTATTTCT	TTGGCAGTTA	GTAAATCTCA	TTTGAATGTC	TGGGTCAGTC
							TATATCCCAT	
								TTGGTAACTG
55							TTTTGTTCAT	
-							GGGATACAAG	
							GAAAAGTTAG	
							TAACTCATTT	
							TCCTAAATTA	
60	AGTACTCAGG	ACCTAACAGT	TATATGTCAT	TTGTTTTTT	TTTTTTTGAG	ATGGCGTCTC	ACTCTGTCAC	CCAAGCTGGA
•	GTGCAGTGGT	ATGACCTTGG	CTCACTGCAG	CCTCTGCCTC	ACGGGTTCAA	GGGATCGTTC	TGCCTTAGCC	TCCTGAGTAG
	CTGGGATTAT	AGGCGCCTGC	CACCACGCCT	GGCTAATTTT	TTTAGTAGAG	ACGGGGTTTC	GCCATGTTGG	CCAGGCTGGT
							GGTGTGAGCC	
							GACATAGCCC	
65							ATGGGGGTGA	
33							ACCCTAGGGG	
							I AACTITITIC	
							TTGTCCTCAC	
							AATGGCAGGA	
70							TCCTTCTTGC	
10							AGTAAGATGA	
							GTACATAAAG	
							AAAATTCTCA	
							AGGTGGACTG	
75	TOAATOTAA	AUDIANAIAI A	TGATCACCCA	TIVOTOTOCA	TOTTOLOGAAA	TATATATATAT	TTACCAATCA	AACTAAACTA
13	ICANICITAA	CICCAAAIIC	TOATCAGCOA	COCCUCION	GIICACIAI	IMITALIAL	LINCOANICA	AIUAAAIUA

TTGAAGTTTT CCTGGCAGTT TTCACTTGT GTTTTAGTCC ATTTAGGCTG CTATAACAAA ATCCCTTAAA CTGGGTAAGG GATTATAAAT ATTAGAAATT TATCTCTCAC AGTTCTGGAA GCTGGGAAGC CCAATATCAA GGCACCAGTA GATTTGGTGT
CTAACGAGGG TGTGCCGTCT GCTTCAAAAA TGGCCCCTTG TTGCTGCATC CTCACTTAGT GCAAGGGGCA AGACAGCTCC
CTTCAACCTC TTTTATAAGG GCACTTATGT CATTCATGAG GGCAGAGCCC TCATGACTTA ATCACTTCCC CAAAGGCCCC
ACCTCTTAAT AGTATCACAT TGGGTGTTAG GTGTCTGGGA GGACACCAAT CTTCAAGCCA TATCATCTCA CTTGGAAAAA AGTCAAAATA AAACCAGTAG ATTTAATTAA TATTACACTA TTTATAGAAG CATGTGATGT ATCATTCCTT GTATTAATTT CCTGGGGTTG CCGTAACAAG TTACCACAAA CTAGGTGGCT TAAAACAATA GAATTTTATT CTCTCACATT TCTAGAGGCA
GAAGTTCACA GTGTGTCAAT AGGGCCATGT TCTCTGGAAG GCTTTAGGGG AGAATATATT TCATATCTTT CTCTTAGCTT CTCGGTGTCA CTGGCAATCC TTAGCTTACT TTGGCTTTCT GTGTCTTCAC ATCATCTTTT TATAAGAACA CCAGTGATAG
TGATTAAGGG CATACCTTAC TTTAATATGA CCTCATCTTA ACTAATTATG TCTTCAATAA CCCTATTTCC AAATAAGGCC
ACATTCTGAA GTATTGGGAG TTAGAACTTA AAGCTTTTTG GGAGGGACAC AGTTCAACCC ATAACAACCC CTAAAATCGA CCAGACTGAG CAACACAGGG AGACCCCCAT CTCTACAAAA AATAAAAAAA TTCTCCAGGC CTCATGGCAC ATACCTGTAG TTCTAGTTAC TTGGGAGACT GGGGTGGGAG GATGCATTGA GCCCAGGAGA TTGAGGCTGC AGTGAGCCAT GATCAGGCCA CTGTACTCCA GCTTGGACAA CAGAGTGAGA GCTTGTCTAG ATAGATAGAT AGATAGATAA TCTAAATAGA TAATAGACAG ATTATCTAAA TAGATAATAG ACAGATTATC TAAATAGATA ATAGACAGAT TATCTAAATA GATAATAGAC AGATTATCTA AATAGATAAT AGACAGATTA TCTAAATAGA TAATAGACAG ATTATCTATC TAAATAGATA ATAGATTATC TAAATAGATA TTGTTGGCAT TAAGATGCAA ACTTTGTTTT AAACAGTTGA GTAAATCAAA GATGGGACTG TTAAGTTATT TGTGTTATTT ACCTGCTTTT TGAAAATGTA AAAATAAAAC TCTAGGTTTA ATTAGTAGTA TGCTATTTAG TAATGAAGTA AAGCTAGAGG CTTCGAACAA ATCTTGTGTA ATTTCCTCTT GAATGAGAGA GAAAATTTAA AGTAAGCAAA CAAATAAGTT GTGTGTCACC ACTICATTICAG TICATTITAACA AGTATITICCA GAGTACTITAT TICTGTGCCAG GAAATGTTGT AGGTGCCCTIC AACAACTTAG AGTCTAGCCT GAGACACAAG TAAGTAGGTA ATTATTATAG AATGGTATGA TICTTTGGAGG ACTGGGTATT GGCTGGCTCA TGGGAGTACA AGATAGGTAC CCAGTGATGA AGTCAGGAAA GGTTTCTTAT GGTGATATGA TGACGTCTAT GCTGATTATA AGGTCAGTGT AGAATAAACT TTGTGCTTTT AAATTTGCAT AGCACTGTAT TAGAGAGTTC ATCTTCAAAA TAATCGAAAAA
GGCTGAGTGT GGTGACCCAT GGCTGTAATC CCAGCACTTT GGGAGGCCGA GGTGGGCAGA TTGCTTGAGC TAGAGAGTTCG
AGACCAGGCT GGCCAACATG GTGAAACCCC GTCTCTACTA AAAATACAAA AATTAGCCAG GAGTGATGGT GCGCACCTGT
AATGCCAGCT ACTTGGGAGG CTGAGGCAGG AGGATCACTT GAACCCAGGA GGTGGAGGTT GAAGTAAGCC GAGGTCATGC CACTGCACTC CAGCCTGGGC AACAGAGTGA GACTCCATCT CAAAAAAAAA AAAAATGATC AAAGAAAGGT GAATTTTCAT CTACCCTATT TCTGCTGAGG AAAATGGACT ATTTTCAAAT ATTTTTAATA AGGGTCAAAA TGAGGGATC GCATTTTTTC AAGTTTTATG ATTTATTTAA CTTGTGGAAC AAAAATAAAC CAGAAACCAC CACCTCTCAC GCCAAAGCTC ACACCTTCAG CCTCCAACAT GAAGGTCTCC GCAGCACTTC TGTGGCTGCT GCTCATAGCA GCTGCCTTCA GCCCCCAGGG GCTCGCTGGG CCAGCTTCTG TCCCAACCAC CTGCTGCTTT AACCTGGCCA ATAGGAAGAT ACCCCTTCAG CGACTAGAGA GCTACAGGAG AATCACCAGT GGCAAATGTC CCCAGAAAGC TGTGATCTTC AAGACCAAAC TGGCCAAGGA TATCTGTGCC GACCCCAAGA CAGTATGAAA ATGTCATTGT TCTTGTGAAC CCAAAGTGTG ACTCATTAAA TGGAAGTAAA TGTTGTTTTA GGAATAC ATGAAGGTCT CCGCAGCACT TCTGTGGCTG CTGCTCATAG CAGCTGCCTT CAGCCCCCAG GGGCTCGCTG GGCCAGCTTC TGTCCCAACC ACCTGCTGCT TTAACCTGGC CAATAGGAAG ATACCCCTTC AGCGACTAGA GAGCTACAGG AGAATCACCA GTGGCAAATG TCCCCAGAAA GCTGTGATCT TCAAGACCAA ACTGGCCAAG GATATCTGTG CCGACCCCAA GAAGAAGTGG GTGCAGGATT CCATGAAGTA TCTGGACCAA AAATCTCCAA CTCCAAAGCC ATAA CCACATATTC CCCTCCTTTT CCAAGGCAAG ATCCAGATGG ATTAAAAAAAT GTACCAAGTC CCTCCTACTA GCTTGCCTCT CTTCTGTTCT GCTTGACTTC CTAGGATCTG GAATCTGGTC AGCAATCAGG AATCCCTTCA TCGTGACCCC CGCATGGGCA AAGGCTTCCC TGGAATCTCC CACACTGTCT GCTCCCTATA AAAGGCAGGC AGATGGGCCA GAGGAGCAGA GAGGCTGAGA CCAACCCAGA AACCACCACC TCTCACGCCA AAGCTCACAC CTTCAGCCTC CAACATGAAG GTCTCCGCAG CACTTCTGTG GCTGCTGCTC ATAGCAGCTG CCTTCAGCCC CCAGGGGCTC GCTGGGCCAG GTAAGCCCC CAACTCCTTA CAGGAAAGGT AAGGTAACCA CCTCCAGGCT ACTAGGTCAG CAAGAATCTT TACAGACTCA CTGCAAATTC TCCATTTGAA AAATAGGGAA ACAGGTTTTG TGGGTGGACA AGAAATGCCT CAACCGTCAC ATCCAGTCAC TGGAAGAGCC AGAACTAGAA AGCTCCCGAG TCTTTTCCCC ACATTCAAGA GGGCCGCTGG GTGCATCCTT ACCCAGCTAT CCTTACAGTG TTTGGGAATG GGGAATGGCT CTGTCTTACT GTGGGCATGG TGGGCATTTT TGGCAGTGGG AGAGAAGGAA AATCTGTTGA TTAGAAGCTC AGTATGTTAA TTCGACTCCA GGACAGCTTT TGGGCATTIT TGGCAGTGGG AGAGAAGGAA AATCIGITGA TLAGAAGCTC AGTATGITAA TLCGACTCCA GGACAGCTTT
CAGAGACAGT GGCTAAGAGA AGAACGAGGT CCCAGGGGAT CTCTTGAGGT GACTTATTIT GACACTCTTT GGGAAAGTTA
TCTAGGAGAT TTGTTCCATA ACTCATTTTC CCATACTCTG GTGACAAATT TACTGAGTGT ATCGGTCCCA CTGAGCCAGT
GCATAGCATG GTAACAAACA GTTCTAAATT ATCAATGACT TAACAGAATT AACTAAATTA ACAAAAGTTA CTTTCTCACT
TGTACTAAAT ATCTATAATG TATGGGCTCA GCCTTCTGCA TTTTATACTC AGGATTCTAG ACTGATGGAG AAGTTACCAC
GTGGGGGAAC ATTGATGGAT ACTGTGATAA AGCAGAAGAA AACTAATTA ATGCCTCCAA CCAACAAAA GTGGCCAAGA AAAATGACAC CCATCACTTT GTCTCCTTCT TTATTGATCA AAACTAATTA ATGCCTCCAA CCAAACAAAA GTGGCCAAGA AATGCAAGTC TACCTTGTGT CTCAAAACAG AGGATGGAGA ATATTTGGTG AAAATTACCA TGACCATCAC ATGGCCACGT AGGTCTTTAT AATGACAGAG CTAGCATTTG TCACATTGAC CAAGCTTTGT CCATACACTC TACAGTAATG ATGAGTCCTC AGTGCACAGG GGAGGATGCT GAAGACACAG GACAGCATCC TCCAGACACA TAAGACTTCA GAGCAGAGGG ATTCTCCCTC CACCTCTCGC AATTCCTTGC TTTCTCCTAA CTTCCTTTAC AAAGTCATGC TTGGAAATGT CTATGTATCA TCATGTGGCT CATTTTTTTC TCTGTTCATT TTTTTTCCCC AAAATTCAGC TTCTGTCCCA ACCACCTGCT GCTTTAACCT GGCCAATAGG AAGATACCCC TTCAGCGACT AGAGAGCTAC AGGAGAATCA CCAGTGGCAA ATGTCCCCAG AAAGCTGTGA TGTAAGTAAA TAAAGTTCAC CCTCCCCTAG ACAAAAAAAT AATGTCTAGG GCACAGAGTC AAGAACTGTG GGAGTCATAG ACTCTGATAG

TTTGACCTCT ATGGTCCAAT TCATTAATTT TCACAAGTGA GTGTTCACTC CCAGCTCCCT GCCTGGGAGA TTGCTGTAGT CATATCAATT TCTTCAAGTC AAGAGCAAAG ATGGTTTTAC TGGGCCTTTA AGAGCAGCAA CTAACCCAAG AGTCTCATCC TTCCTCCTCT CCGTAGCAAC CCTTTGTCCA GGGGCAGATG GTCCTTAAAT ATTTAGGGTC AAATGGGCAG AATTTTCAAA AACAATCCTT CCAATTGCAT CCTGATTCTC CCCACAGCTT CAAGACCAAA CTGGCCAAGG ATATCTGTGC CGACCCCAAG TGATCAGTAT GAAAATGTCA TTGTTCTTGT GAACCCAAAG TGTGACTCAT TAAATGGAAG TAATGTTGTT TTAGGAATAC ATAAAGTATG TGCATATTT ATTATAGTCA CTAGTTGTAA TTTTTTTGTG GGAAATCCAC ACTGAGCTGA GGGGG GCCAGGTCGC TGTTGGTCCA CGCCGCCCGT CGCCGCCCC GCCCGCTCAG CGTCCGCCGC CGCCATGGGA GGCCGAGCC GAGCCGGGGT CGGGCAGCAG CAGGGACCCC CCAGAGGCGG GGCCTGTGGG ACCGCTATGG GCGTGGAGAT CGAGACCATC TCCCCCGGAG ACGGAAGGAC ATTCCCCAAG AAGGGCCAAA CGTGTGTGGT GCACTACACA GGAATGCTCC AAAATGGGAA GAAGTTTGAT TCATCCAGAG ACAGAAACAA ACCTTTCAAG TTCAGAATTG GCAAACAGGA AGTCATCAAA GGTTTTGAAG AGGGTGCAGC CCAGATGAGC TTGGGGCAGA GGGCGAAGCT GACCTGCACC CCTGATGTGG CATATGGAGC CACGGGCCAC CCCGGTGTCA TCCCTCCCAA TGCCACCTC ATCTTTGACG TGGAGCTGCT CAACTTAGAG TGAAGGCAGG AAGGAACTCA AGGTGGCTGG AGATGGCTGC TGCTCACCCT CCTAGCCTGC TCTGCCACTG GGACGGCTCC TGCTTTTGGG GCTCTTGATC AGTGTGCTAA CCTCACTGCC TCATGGCATC ATCCATTCTC TCTGCCCAAG TTGCTCTGTA TGTGTTCGTC AGTGTTCATG CGAATTCTTG CTTGAGGAAA CTTCGGTTGC AGATTGAAGC ATTTCAGGTT GTGCATTTTG TGTGATGCAT GTAGTAGCCT TTCCTGATGA CAGAACACAG ATCTCTTGTT CGCACAATCT ACACTGCCTT ACCTTCACTT AAACCACACA CACAAGGTGC TCAGACATGA AATGTACATG GCGTACCGTA CACAGAGGGA CTTGAGCCAG TTACCTTTGC TGTCACTTTC TCTCTTATAA ATTCTGTTAG CTGCTCACTT AAACAATGTC CTCTTTGAGA AAATGTAAAA TAAAGGCTCT GTGCTTGACA GAATTCGGGC CGCCGCCAGG TCGCTGTTGG TCCACGCCGC CCGTCGCGCC GCCCGCCCGC TCAGCGTCCG CCGCCGCCAT GGGAGTGCAG GTGGAAACCA TCTCCCCAGG AGACGGGCGC ACCTTCCCCA AGCGCGGCCA GACCTGCGTG GTGCACTACA CCGGGATGCT TGAAGATGGA AAGAAATTTG ATTCCTCCCG GGACAGAAAC AAGCCCTTTA AGTTTATGCT AGGCAAGCAG GAGGTGATCC GAGGCTGGGA AGAAGGGGTT GCCCAGATGA GTGTGGGTCA GAGAGCCAAA CTGACTATAT CTCCAGATTA TGCCTATGGT GCCACTGGGC ACCCAGGCAT CATCCCACCA CATGCCACTC TCGTCTTCGA TGTGGAGCTT CTAAAACTGG AATGACAGGA ATGGCCTCCT CCCTTAGCTC CCTGTTCTTG GATCTGCCAT GGAGGGATCT GGTGCCTCCA GACATGTGCA CATGAGTCCA
TATGGAGCTT TICCTGATGT TCCACTCCAC TTTGTATAGA CATCTGCCCT GACTGAATGT GTTCTGTCAC TCAGGTTTGC
TTCCGACACC TCTGTTTCCT CTCCCCTTT CTCCTCGTAT GTGTGTTTAC CTAAACTATA TGCCATAAAC CTCAAGTTAT
TCATTTTATT TTGTTTTCAT TTTGGGGTGA AGATTCAGTT TCAGTCTTTT GGATATAGGT TTCCAATTAA GTACATGGTC 30 AAGTATTAAC AGCACAAGTG GTAGGTTAAC ATTAGAATAG GAATTGGTGT TGGGGGGGGG GTTTGCAAGA ATATTTTATT TTCATCCTGT GGTTTTTCTA ATGGACTTTC AGGAATTTTG TAATCTCATA ACTTTCCAAG CTCCACCACT TCCTAAATCT TAAGAACTTT AATTGACAGT TICAATTGAA GGTGCTGTTT GTAGACTTAA CACCCAGTGA AAGCCCAGC ATCATGACAA ATCCTTGAAT GTTCTCTTAA GAAAATGATG CTGGTCATCG CAGCTTCAGC ATCTCCTGTT TTTTGATGCT TGGCTCCCTC TGCTGATCTC AGTTTCCTGG CTTTTCCTCC CTCAGCCCCT TCTCACCCCT TTGCTGTCCT GTGTAGTGAT TTGGTGAGAA ATCGTTGCTG CACCCTTCCC CCAGCACCAT ITATGAGTCT CAAGTTTTAT TATTGCAATA AAAGTGCTTT ATGCCCGAAT TC GCCGCCGCA TGGGAGTGCA GGTGGAAACC ATCTCCCCAG GAGACGGGCG CACCTTCCCC AAGCGCGGCC AGACCTGCGT GGTGCACTAC ACCGGGATGC TTGAAGATGG AAAGAAATTT GATTCCTCCC GGGACAGAAA CAAGCCCTTT AAGTTTATGC TAGGCAAGCA GGAGGTGATC CGAGGCTGGG AAGAAGGGGT TGCCCAGATG AGTGTGGGTC AGAGAGCCAA ACTGACTATA TCTCCAGATT ATGCCTATGG TGCCACTGGG CACCCAGGCA TCATCCCACC ACATGCCACT CTCGTCTTCG ATGTGGAGCT ATGCCATAAA CCTCAAGTTA TTCA AAGCTTCTAC CCTAGTCTGG TGCTACACTT ACATTGCTTA CATCCAAGTG TGGTTATTTC TGTGGCTCCT GTTATAACTA TTATAGCACC AGGTCTATGA CCAGGAGAAT TAGACTGGCA TTAAATCAGA ATAAGAGATT TTGCACCTGC AATAGACCTT ATGACACCTA ACCAACCCA TTATTTACAA TTAAACAGGA ACAGAGGGAA TACTTATCC AACTCACACA AGCTGTTTTC CTCCCAGATC CATGCTTTTT TGCGTTTATT ATTTTTAGA GATGGGGGCT TCACTATGTT GCCCACACTG GACTAAAACT CTGGGCCTCA AGTGATTGTC CTGCCTCAGC CTCCTGAATA GCTGGGACTA CAGGGGCATG CCATCACACC TAGTTCATTT CCTCTATTTA AAATATACAT GGCTTAAACT CCAACTGGGA ACCCAAAACA TTCATTTGCT AAGAGTCTGG TGTTCTACCA CCTGAACTAG GCTGGCCACA GGAATTATAA AAGCTGAGAA ATTCTTTAAT AATAGTAACC AGGCAACATC ATTGAAGGCT CATATGTAAA AATCCATGCC TTCCTTTCTC CCAATCTCCA TTCCCAAACT TAGCCACTGG TTCTGGCTGA GGCCTTACGC ATACCTCCCG GGGCTTGCAC ACACCTTCTT CTACAGAAGA CACACCTTGG GCATATCCTA CAGAAGACCA GGCTTCTCTC TGGTCCTTGG TAGAGGGCTA CTTTACTGTA ACAGGGCCAG GGTGGAGAGT TCTCTCCTGA AGCTCCATCC CCTCTATAGG AAATGTGTTG ACAATATTCA GAAGAGTAAG AGGATCAAGA CTTCTTTGTG CTCAAATACC ACTGTTCTCT TCTCTACCCT GCCCTAACCA GGAGCTTGTC ACCCCAAACT CTGAGGTGAT TTATGCCTTA ATCAAGCAAA CTTCCCTCTT CAGAAAAGAT GGCTCATTTT CCCTCAAAAG TTGCCAGGAG CTGCCAAGTA TTCTGCCAAT TCACCCTGGA GCACAATCAA CAAAATTCAGC CAGAACACAA CTACAGCTAC TATTAGAACT ATTATTATTA ATAAATTCCT CTCCAAATCT AGCCCCTTGA CTTCGGATTT CACGATTTCT CCCTTCCTCC TAGAAACTTG ATAAGTTTCC CGCGCTTCCC TTTTTCTAAG ACTACATGTT TGTCATCTTA TAAAGCAAAG GGGTGAATAA ATGAACCAAA TCAATAACTT CTGGAATATC TGCAAACAAC AATAATATCA GCTATGCCAT CTTTCACTAT TTTAGCCAGT ATCGAGTTGA ATGAACATAG AAAAATACAA AACTGAATTC
TTCCCTGTAA ATTCCCCGTT TTGACGACGC ACTTGTAGCC ACGTAGCCAC GCCTACTTAA GACAATTACA AAAGGCGAAG AGACTGACT CAGGCTAAG CTGCCAGCCA GAGAGGGAGT CATTTCATTG GCGTTTGAGT CAGCAAAGGT ATTGTCCTCA
CATCTCTGGC TATTAAAGTA TTTTCTGTTG TTGTTTTTCT CTTTGGCTGT TTTCTCTCAC ATTGCCTTCT CTAAAGCTAC
AGTCTCTCCT TCTTTTCTT GTCCCTCCCT GGTTTGGTAT GTGACCTAGA ATTACAGTCA GATTTCAGAA AATGATTCTC
TCATTTTGCT GATAAGACT GATTCGTTTT ACTGAGGGAC GGCAGAACTA GTTTCCTATG AGGGCATGGG TGAATACAAC
TGAGGCTTCT CATGGGAGGG AATCTCTACT ATCCAAAATT ATTAGAGAAA AATTGAAAAT TTCCAACTCT GTCTCTCTCT
TACCTCTGTG TAAGGCAAAT ACCTTATTCT TGTGGTGTTT TTGTAAACCTC TTCAAACTTT CATTGATTGA ATGCCTGTTC
TCCCCTTTCCC GACATTAGGA ATTACAACAT CTCAAAAAAGA ATTTCAAACTT CTCAATTAGAACAT CTCAAAAAAGA ATTACAAACA TTCCAAACTT CTCAAACAACAT CTCAAAAAAGA ATTACAAACA TTCCAAACTT CTCAAACAACAT CTCAAAAAAACA TTCCAAACAT CTCAAAAAAACA TTCCAAACAT CTCAAAAAACA TTCCAACTT CTCAAAAACA TTCCAAACAT CTCAAAAAACA TTCCAACTT CTCAAAAAACA TTCCAACTT CTCAAAAAACA TTCCAACTT CTCAAAAACA TTCCAACAT CTCAAAAACA TTCCAACTT CTCAAAAACA TTCCAACAT CTCAAAAACA TTCCAACAT CTCAAAAAACA TTCCAACTT CTCAAAAACA TTCCAACTT CTCAAAAACA TTCCAACTT CTCAATAAAACA TTCCAACTT CTCAATAAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAATAAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAATAAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAATAAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAACTT CTCAATAAACA TTCCAACTT CTCAATAAAACA TTCCAACTT CTCAATAAACA TTCCAACTT CTCAATAAAACA TTCCAAC 70 TGGCAATACA TTAGGTTGGG CACATAAGGA ATACCAACAT AAATAAAACA TTCTAAAAGA AGTTTACGAT CTAATAAAGG AGACAGGTAC ATAGCAAACT AATTCAAAGG AGCTAGAAGA TGGAGAAAAT GCTGAATGTG GACTAAGTCA TTCAACAAAG

TTTTCAGGAA GCACAAAGAG GAGGGGCTCC CCTCACAGAT ATCTGGATTA GAGGCTGGCT GAGCTGATGG TGGCTGGTGT TCTCTGTTGC AGAAGTCAAG ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGGTA AGGAATAAGA TTTATCTCTT GTGATTTAAT GAGGGTTTCA AGGCTCACCA GAATCCAGCT AGGCATAACA GTGGCCAGCA TGGGGGCAGG CCGGCAGAGG TTGTAGAGAT GTGTACTAGT CCTGAAGTCA GAGCAGGTTC AGAGAAGACC CAGAAAAACT AAGCATTCAG CATGTTAAAC TGAGATTACA TTGGCAGGGA GACCGCCATT TTAGAAAAAT TATTTTTGAG GTCTGCTGAG CCCTACATGA ATATCAGCAT CAACTTAGAC ACAGCCTCTG TTGAGATCAC ATGCCCTGAT ATAAGAATGG GTTTTACTGG TCCATTCTCA GGAAAACTTG ATCTCATTCA GGAACAGGAA ATGGCTCCAC AGCAAGCTGG GCATGTGAAC TCACATATGC AGGCAAATCT CACTCAGATG TAGAAGAAAG GTAAATGAAC ACAAAGATAA AATTACGGAA CATATTAAAC TAACATGATG TTTCCATTAT
CTGTAGTAAA TACTAACACA AACTAGGCTG TCAAAATTTT GCCTGGATAT TTTACTAAGT ATAAATTATG AAATCTGTT
TAGTGAATAC ATGAAAGTAA TGTGTAACAT ATAATCTATT TGGTTAAAAT AAAAAGGAAG TGCTTCAAAA CCTTTCTTTT
CTCTAAAGGA GCTTAACATT CTTCCCTGAA CTTCAATTAA AGCTCTTCAA TTTTGTTAGCC AAGTCCAATT TTTACAGATA AAGCACAGGT AAAGCTCAAA GCCTGTCTTG ATGACTACTA ATTCCAGATT AGTAAGATAT GAATTACTCT ACCTATGTGT ATGTGTAGAA GTCCTTAAAT TTCAAAGATG ACAGTAATGG CCATGTGTAT GTGTGTGACC CACAACTATC ATGGTCATTA AAGTACATTG GCCAGAGACC ACATGAAATA ACAACAATTA CATTCTCATC ATCTTATTTT GACAGTGAAA ATGAAGAAGA CAGTTCCTCC ATTGATCATC TGTCTCTGAA TCAGGTAAGC AAATGACTGT AATTCTCATG GGACTGCTAT TCTTACACAG TGGTTTCTTC ATCCAAAGAG AACAGCAATG ACTTGAATCT TAAATACTTT TGTTTTACCC TCACTAGAGA TCCAGAGACC TGTCTTCAT TATAAGTGAG ACCAGCTGCC TCTCTAAACT AATAGTTGAT GTGCATTGGC TCTCCCAGA ACAGAGCAGA ACTATCCCAA ATCCCTGAGA ACTGGAGTCT CCTGGGGCAG GCTTCATCAG GATGTTAGTT ATGCCATCCT GAGAAAGCCC CGCAGGCCGC TTCACCAGGT GTCTGTCTCC TAACGTGATG TGTTGTGGTT GTCTTCTCTG ACACCAGCAT CAGAGGTTAG 20 AGAAAGTCTC CAAACATGAA GCTGAGAGAG AGGAAGCAAG CCAGCTGAAA GTGAGAAGTC TACAGCCACT CATCAÁTCTG TGTTATTGTG TTTGGAGACC ACAAATAGAC ACTATAAGTA CTGCCTAGTA TGTCTTCAGT ACTGGCTTTA AAAGCTGTCC CCAAAGGAGT ATTTCTAAAA TATTTTGAGC ATTGTTAAGC AGATTTTTAA CCTCCTGAGA GGGAACTAAT TGGAAAGCTA CCACTCACTA CAATCATTGT TAACCTATTT AGTTACAACA TCTCATTTTT GAGCATGCAA ATAAATGAAA AAGTCTTCCT AAAAAAAATCA TCTTTTTTATC CTGGAAGGAG GAAGGAAGGT GAGACAAAAG GGAGAGAGGG AGGGAAGCCT AATGAAACAC CAGITACCTA AGACCAGAAT GGAGATCCTC CTCACTACCT CTGTTGAATA CAGCACCTAC TGAAAGAACT TTCATTCCCT GACCATGAAC AGCCTCTCAG CTTCTGTTTT CCTTCCTCAC AGAAATCCTT CTATCATGTA AGCTATGGCC CACTCCATGA AGGCTGCATG GATCAATCTG TGTCTCTGAG TATCTCTGAA ACCTCTAAAA CATCCAAGCT TACCTTCAAG GAGAGCATGG TGGTAGTAGC AACCAACGGG AAGGTTCTGA AGAAGAGACG GTTGAGTTTA AGCCAATCCA TCACTGATGA TGACCTGGAG GCCATCGCCA ATGACTCAGA GGAAGGTAAG GGGTCAAGCA CAATAATATC TTTCTTTTAC AGTTTTAAGC AAGTAGGGAC AGTAGAATTT AGGGGAAAAT TAAACGTGGA GTCAGAATAA CAAGAAGACA ACCAAGCATT AGTCTGGTAA CTATACAGAG AGHAGATHA GOGORARA HARACHON CHARACHA CARDARDA A ACCARDAN ACTUATION CHARACHA GARACHA ACCARDAN ACTUATION CHARACHA GARACHA ACCARDAN ACTUATION CHARACHA GARACHA ACCARDAN ACTUATION AGCATTATT TCTTAGCCAT ATTOTAAAGG TCGTGTGACT TTTAGCCTTT CAGGAGAAAG CAGTAATAAG ACCACTTACG AGCCATTGTTC CTCTCATACT AACTATGCCT CCTTGGTCAT GTTACATAAT CTTTTCGTGA TTCAGTTTCC TCTACTGTAA AATGGAGATA ATCAGAATCC CCCACTCATT GGATTGTTGT AAAGATTAAG AGTCTCAGGC TTTACAGACT GAGCTAGCTG GGCCCTCCTG AAGCTGGGAA TACAGGCACC CGCCACTGTT CCCGGCTAAT TTTTTGTATT TTTAGTAGAG ACGGAGTTTC ACCGTGGTCT CCATCTCCTC GTGATCCACC CACCTTGGCC TCCCAAAGTG CCGGGGATTAC AGGCGTGAGC CACCGGGGCC GGCCTATTAT
TATTATTATT ACTACTACTA CTACCTATAT GAATACTACC AGCAATACTA ATTTATTAAT GACTGGATTA TGTCTAAACC
TCACAAGAAT CCTACCTTCT CATTTTACAT AAAAGGAAAC TAAGCTCATT GAGATAGGTA AACTGCCCAA TGGCATACAT
CTGTAAGTGG GAGAGCCTCA AATCTAATTC AGTTCTACCT GAGTAAAAAA ATCATGGTTT CTCCTCCATC CCTTTACTGT ACAAGCCTCC ACATGAACTA TAAACCCAAT ATTCCTGTTT TTAAGATAAT ACCTAAGCAA TAACGCATGT TCACCTAGAA GGTTTTAAAA TGTAACAAAA TATAAGAAAA TAAAAATCAC TCATATCGTC AGTGAGAGTT TACTACTGCC AGCACTATGG
TATGTTTCCT TAAAATCTTT GCTATACACA TACCTACATG TGAACAAATA TGTCTAACAT CAAGACCACA CTATTTACAA CTITATATCC AGCTITICTI ACITAGCAAT GTATIGAGGA CATTITAGAG TGCCCGTITI TCACCATTAT AAGCAATGCA
ACAATGAACA TCTGTATAAA TAAATATCA TTICTCTCAC CCTTTATTC CTTAGAATAT ATTCCTAGAA GTAGAATTC
CCAGAGCCAT GAGGATTTGT GACGCTATTG ATATGTGCCA CTTTGCACTC TCTGTGACAT ATATAATTAT TTITAATGCA
TTCATTTTTT TCTCAGAGTG CATTCGTTTG AAAACATAGA CGGGAAATAC TGGTAGTCTT CCTTGTCAGT TAGAAACACC
CAAACAATGA AAAATGAAAA AGTTGCACAA ATAGTCTCTA AAACAATGA AACTATTGCC TGAGGAATTG AAGTTTAAAC AGAAGCACAT AAGCAACAAC AAGGATAATC CTAGAAAACC AGTTCTGCTG ACTGGGTGAT TTCACTTCTC TTTGCTTCCT CATCTGGATT GGAATATTCC TAATACCCCC TCCAGAACTA TTTTCCCTGT TTGTACTAGA CTGTGTATAT CATCTGTGTT
TGTACATAGA CATTAATCTG CACTTGTGAT CATGGTTTTA GAAATCATCA AGCCTAGGTC ATCACCTTTT AGCTTCCTGA GCAATGTGAA ATACAACTTT ATGAGGATCA TCAAATACGA ATTCATCCTG AATGACGCCC TCAATCAAAG TATAATTCGA TTTGGTTCTT TCAGACATTC TTACCCTCAA TTTTAAAACT GAGGAAACTG TCAGACATAT TAAATGATTT ACTCAGATTT ACCCAGAAGC CAATGAAGAA CAATCACTCT CCTTTAAAAA GTCTGTTGAT CAAACTCACA AGTAACACCA AACCAGGAAG ATCTTTATTA TCTCTGATAA CATATTTGTG AGGCAAAAACC TCCAATAAGC TACAAATATG GCTTAAAGGA TGAAGTTTAG AACATATGAG TGTATCAGCT TCCTAAACCC CTCCATGTTA GGTCATTATG AACTTATGAT CTAACAAATT ACAGGGTCTT ATCCCACTAA TGAAATTATA AGAGATTCAA CACTTATTCA GCCCCGAAGG ATTCATTCAA CGTAGAAAAT TCTAAGAACA TTAACCAAGT ATTTACCTGC CTAGTGAGT TGGAAGACAT TGTGAAGGAC ACAAAGATGT ATAGAATTCC ATTCCTGACT 70 TTGACATGGG TGCTTATAAG TCATCAAAGG ATGATGCTAA AATTACCGTG ATTCTAAGAA TCTCAAAAAC TCAATTGTAT GTGACTGCCC AAGATGAAGA CCAACCAGTG CTGCTGAAGG TCAGTTGTCC TTTGTCTCCA ACTTACCTTC ATTTACATCT CATATGTTTG TAAATAAGCC CAATAGGCAG ACACCTCTAA CAAGGTGACA CTGTCCTCTT TCCTTCCTAC CACAGCCCCC

ACCTACCCAC CCCACTCCCA TTGATTCCAG AGGCGTGCCT AGGCAGGATC TATGAGAAAA TATAACAGAG AGTAAGAGGA AAATTACCTT CTTTCTTTTT CCTTTCCCTG CCTGACCTTA TTCACCTCCC ATCCCAGAGC ATCCATTTAT TCCATTGATC TITACTGACA TCTATTATCT GACCTACACA ATACTAGACA TTAGGACAAT GTGGCCTGCC TCCAAGAAAC TCAAATAAGC AAGACCTICT ATTCCCAAGT AGAATTTATG TGCCTGCCTG TGCTTTTCTA CCTGGATCAA GTGATGTCTA CAGAGTAGGG CAGTAGCTTC ATTCATGAAC TCATTCAACA AGCATATTC ACTGAGAGCC TTGTATTTTT CAGGCATAGT GCCAACAGCA GTGTGGACAG TGGTGCATCA AAGCCTCTAG TCTCATAGAA CTTAGTCTTC TGGAGGATAT GGAAAACAGA CAACCCAAAC AACCAACAAA AGAGCAAGAT GCTGCAAAAA AAAAAAAAT GAATAGGGTG CTAAGATAGA GAAAAGTGGG AGAGTGCTAT TTAGACAAAG TGGTAAAAAC AAAGCCCCTT GTGAGATGAG AGCTGCCGAC AGAGGGGGCG GGTCATGGTT GTGGGTTTTT GGGTAGGACA TTCAGAGGAG GGGGCGGGTC GTGGTTGTGG GTTTTTGGGT AGGACATTCA GAGGAGGGG CGGGTCGTGG TTGTGGGTTT TTGGGTAGGA CATTCAGAGG AGGGGGCGGG TCGTGGTTGT GGGTTTTTGG GTAGGACATT CAGAGGAGGG GGCGGGTCGT GGTTGTGGGT TTTTGGGACA TTCAGAGGAG TCTGAATGCA CCCAGGCCTA CAACTTCAAG ATGGTAAAGG ACAGCTCCAA GGATCAGAAG AAGCATTCTT GGAACTGGGG CATTTTGAGA AGGAGGAAAA ATATGCAGAG ACTAGTGCTT GCAGAGCTTG CATTTGGATT TCATTTGAGG TACAATGAAA ACCCATTAAT GGGTTTCACA CAGTGCAATG GCCTGACCTC ACTTATATTT CCTAAAATAG AAAACAGATC AGAAGGAAGG CAATAGAGAA GCAGAAAGTC CAATGAGGAG GTTTCACAGC AGTCATGGGG GTGGGGTAAG GAAAAGAAGT GGAAAGAAAC AGACAGAATT GGGTTATATT TTGGAGATAG AACCAACAGA AAGAGTITIA CIGATATACT TAGGAATITI GIGIGIATGI GIGIGIGIGI GIGIGITIAA CCITCAATIG
TIGACTTAAA TACTGAGATA AATGTCATCI AAATGCTAAA TIGATTTCCC AAAGGTATGA TITGTTCACT TGGAGATCAA
AATGTTTAGG GGGCTTAGAA TCACTGTAGT GCTCAGATTI GATGCAAAAT GTCTTAGGCC TATGTTGAAG GCAGGACAGA
AACAATGTTT CCCTCCTACC TGCCTGGATA CAGTAAGATA CTAGTGTCAC TGACAATCTT CATAACTAAT TTAGATCTC
CTCCAATCAA CTAAGGAAAT CAACTCTTAT TAATAGACTG GGCCACACAT CTACTAGGCA TGTAATAAAT GCTTGCTGAA
TGAACAAATG AATGAAGAGC CTATAGCATC ATGTTACAGC CATAGTCCTA AAGTGGTGTT TCTCATGAAG GCCAAATGCT
AAGGGATTGA GCTTCAGTCC TTTTTCTAAC ATCTTGTTCT CTAACAGAAT TCTCTTCTTT TCTTCATAGAA AGATGCCTGA
GATACCCAAA ACCATCACAG GTAGTGAGAC CAACCTCCTC TTCTTCTGGG AAACTCACGG GGGGGCCACC CTCTATCACT CAGTTGCCCA TCCAAACTTG TTTATTGCCA CAAAGCAAGA CTACTGGGTG TGCTTGGCAG GGGGGCCACC CTCTATCACT GACTTTCAGA TACTGGAAAA CCAGGCGTAG GTCTGGAGTC TCACTTGTCT CACTTGTGCA GTGTTGACAG TTCATATGTA CCATGTACAT GAAGAAGCTA AATCCTTTAC TGTTAGTCAT TTGCTGAGCA TGTACTGAGC CTTGTAATTC TAAATGAATG TTTACACTCT TTGTAAGAGT GGAACCAACA CTAACATATA ATGTTGTTAT TTAAAGAACA CCCTATATTT TGCATAGTAC CAATCATTTT AATTATTATT CTTCATAACA ATTTTAGGAG GACCAGAGCT ACTGACTATG GCTACCAAAA AGACTCTACC 30 CATATTACAG ATGGGCAAAT TAAGGCATAA GAAAACTAAG AAATATGCAC AATAGCAGTT GAAACAAGAA GCCACAGACC
TAGGATTTCA TGATTTCATT TCAACTGTTT GCCTTCTGCT TTTAAGTTGC TGATGAACTC TTAATCAAAT AGCATAAGTT
TCTGGGACCT CAGTTTTATC ATTTTCAAAA TGGAGGGAAT AATACCTAAG CCTTCCTGCC GCAACAGTTT TTTATGCTAA 35 TCAGGAGGT CATTTTGGTA AAATACTICT CGAAGCCGAG CCTCAAGATG AAGGCAAAGC ACGAAATGTT ATTTTTATATTATTTAT ATATGTATTT ATAAATATAT TTAAGATAAT TATAATATAC TATATTTATG GGAACCCCTT CATCCTCTGAGTGGACCAG GCATCCTCCA CAATAGCAGA CAGTGTTTC TGGGATAAGT AAGTTTGATT TCATTAATAC AGGGCATTTT GGTCCAAGTT GTGCTTATCC CATAGCCAGG AAACTCTGCA TTCTAGTACT TGGGAGACCT GTAATCATAT AATAAATGTA CATTAATTAC CTTGAGCCAG TAATTGGTCC GATCTTTGAC TCTTTTGCCA TTAAACTTAC CTGGGCATTC TTGTTTCATT CAATTCCACC TGCAATCAAG TCCTACAAGC TAAAATTAGA TGAACTCAAC TTTGACAACC ATGAGACCAC TGTTATCAAA CAATTCCACC TGCAATCAAG TCCTACAAGC TAAAATTAGA TGAACTCAAC TTTGACAACC ATGAGACCAC TGTTATCAAA
ACTITCITIT CTGGAATGTA ATCAATGTTT CTTCTAGGTT CTAAAAAATTG TGATCAGACC ATAATGTTAC ATTATTATCA
ACAATAGTGA TTGATAGAGT GTTATCAGTC ATAACTAAAT AAAGCTTGCA ACAAAATTCT CTGACACATA GTTATTCATT
GCCTTAATCA TTATTTTACT GCATGGTAAT TAGGGACAAA TGGTAAAATGT TTACATAAAT AATTGTATTT AGTGTTACTT
TATAAAATCA AACCAAGATT TTATATTTTT TTCTCCTCTT TGTTAGCTGC CAGTATGCAT AAATGGCATT AAGAATGATA
ATATTTCCGG GTTCACTTAA AGCTCATATT ACACATACAC AAAACATGTG TTCCCATCTT TATACAAACT CACACATACAC
GAGCTACATT AAAAACAACT AATAGGCCAG GCACGGTGGC TCAGACCTGT AATCCCAGCA CTTTGGGAGG ACCAACCTCT
TCGAGGCACA AGGCACAACA GGCTGCTCT GGATTCTCTT CAGCCAATCT TCATTGCTCA AGTGTCTGAA GCAGCCATGG
CAGAAGTACC TGAAGTGCTC CTTCCAAGGAC CTGGAACTCT CACCTCTCGAA TGCCCTCTCGAACACAC TGAACTACCAACACA
TGAAGTGCTC CTTCCAAGGAC CTGGAACTCT CACCTCTCGAA TGCCCTCCTACACACA
TCTCCAACACA CCTAAACAGA TGAAGTGCTC CTTCCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA TCTCCGACCA CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CCAGGAGAAT GACCTGAGCA CCTTCTTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCTT CGACACATGG GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAACTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GATGTCTGGT CCATATGAAC TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC TCCATGTCCT GATGICTGGT CCATATGAC TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCACA AGTGGTGTC TCCATGTCCT
TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTTGGGCCTC AAGGAAAAAA ATCTGTACCT GTCCTGCGTG
TTGAAAGATG ATAAGCCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAG AAGAAGATGG AAAAGCGATT
TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCCAA CTGGTACATC AGCACCTCTC
AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAGG CGGCCAGGAT ATAACTGACT TCACCATGCA ATTTGTGTCT
TCCTAAAGAG AGCTGTACCC AGAGAGTCCT GTGCTGAATG TGGACTCAAT CCCTAGGGCT GGCAGAAAGG GAACAGAAAG GTTTTTGAGT ACGGCTATAG CCTGGACTT CCTGTTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA
GGATCTCCTG TCCATCAGCC AGGACAGTCA GCTCTCTCCT TTCAGGGCCA ATCCCCAGCC CTTTTGTTGA GCCAGGCCTC TTTAGATTTC CTGTGGAAAA TATAACTTAC TAAAGATGGA GTTCTTGTGA CTGACTCCTG ATATCAAGAT ACTGGGAGCC AAATTAAAAA TCAGAAGGCT GCTTGGAGAG CAAGTCCATG AAATGCTCTT TTTCCCACAG TAGAACCTAT TTCCCTCGTG
TCTCAAATAC TTGCACAGAG GCTCACTCCC TTGGATAATG CAGAGCGAGC ACGATACCTG GCACATACTA ATTTGAATAA AATGCTGTCA AATTCCCATT CACCCATTCA AGCAGCAAAC TCTATCTCAC CTGAATGTAC ATGCCAGGCA CTGTGCTAGA

```
CTTGGCTCAA AAAGATTTCA GTTTCCTGGA GGAACCAGGA GGGCAAGGTT TCAACTCAGT GCTATAAGAA GTGTTACAGG
 CTGGACACGG TGGCTCACGC CTGTAATCCC AACATTTGGG AGGCCGAGGC GGGCAGATCA CAAGGTCAGG AGATCGAGAC
 CATCCTGGCT AACATGGTGA AACCCTGTCT CTACTAAAAA TACAAAAAAT TAGCCGGGCG TTGGCGGCAG GTGCCTGTAG
 TCCCAGCTGC TGGGGAGGCT GAGGCAGGAG AATGGTGTGA ACCCGGGAGG CGGAACTTGC AGGGGGCCGA GATCGTGCCA
CTGCACTCCA GCCTGGGCGA CAGAGTGAGA CTCTGTCTCA AAAAAAAAA AAAAGTGTTA TGATGCAGAC CTGTCAAAGA
GGCAAAGGAG GGTGTTCCTA CACTCCAGGC ACTGTTCATA ACCTGGACTC TCATTCATTC TACAAATGGA GGGCTCCCCT
GGGCAGATCC CTGGAGCAGG CACTTTGCTG GTGTCTCGGT TAAAGAGAAA CTGATAACTC TTGGTATTAC CAAGAGATAG
AGTCTCAGAT GGATATTCTT ACAGAAACAA TATTCCCACT TTTCAGAGTT CACCAAAAAA TCATTTTAGG CAGAGCTCAT
 CTGGCATTGA TCTGGTTCAT CCATGAGATT GGCTAGGGTA ACAGCACCTG GTCTTGCAGG GTTGTGTGAG CTTATCTCCA
GGGTTGCCCC AACTCCGTCA GGAGCCTGAA CCCTGCATAC CGTATGTTCT CTGCCCCAGC CAAGAAAGGT CAATTTTCTC CTCAGAGGCT CCTGCAATTG ACAGAGAGCT CCCGAGGCAG AGAACAGCAC CCAAGGTAGA GACCCACACC CTCAATACAG
ACAGGAGGG CTATIGGCCC TICATIGTAC CCATITATICA ATCTIGTAGT GGGAAGATTC CTAAACTTAA GTACAAAGAA
GTGAATGAAG AAAAGTATGT GCATGTATAA ATCTIGTGTGT CTTCCACTTT GTCCCACATA TACTAAATTT AAACATTCTT
CTAACGTGGG AAAATCAGT ATTTTAATGT GGACATCAAC TGCACAACGA TTGTCAGGAA AACAATGCAT ATTTGCATGG
TGATACATTT GCAAAATGTG TCATAGTTTG CTACTCCTTG CCCTTCCATG AACCAGAGAA TTATCTCAGT TTATTAGTCC
CCTCCCCTAA GAAGCTTCCA CCAATACTCT TTTCCCCTTT CCTTTAACTT GATTGTGAAA TCAGGTATTC AACAGGAAAA
 TTTCTCAGCC TCCTACTTCT GCTTTTGAAA GCTATAAAAA CAGCGAGGGA GAAACTGGCA GATACCAAAC CTCTTCGAGG
CACAAGGCAC AACAGGCTGC TCTGGGATTC TCTTCAGCCA ATCTTCATTG CTCAAGTATG ACTTTAATCT TCCTTACCAAC
TAGGTGCTAA GGGAGTCTCT CTGTCTCTCT GCCTCTTTGT GTGTATGCAT ATTCTCTCTC TCTCTCTCTT TCTTTCTCTG
TCTCTCCTCT CCTTCCTCT TGCCTCCTCT CTCAGCTTTT TGCAAAAATG CCAGGTGTAA TATAATGCTT ATGACTCGGG
AAATATTCTG GGAATGGATA CTGCTTATCT AACAGCTGAC ACCCTAAAGG TTAGTGCAA AGCCTCTGCT CCAGCTCTCC
TAGCCAATAC ATTGCTAGTT GGGGTTTGGT TTAGCAAATG CTTTTCTCTA GACCCAAAGG ACTCTCTTT CACACATTCA
TTCATTTACT CAGAGATCAT TTCTTTGCAT GACTGCCATG CACTGGATGC TGAGAGAAAT CACACATGAA CGTAGCCGTC
ATGGGGAAGT CACTCATTTT CTCCTTTTTA CACAGGTGTC TGAAGCAGCC ATGGCAGAAG TACCTGAGCT CGCCAGTGAA
ATGATGGCTT ATTACAGGTC AGTGGAGACG CTGAGACCAG TAACATGAGC AGGTCTCCTC TTTCAAGAGT AGAGTGTTAT
CTGTGCTTGG AGACCAGATT TTTCCCCTAA ATTGCCTCTT TCAGTGGCAA ACAGGGTGCC AAGTAAATCT GATTTAAAGA
CTACTTTCCC ATTACAAGTC CCTCCAGCCT TGGGACCTGG AGGCTATCCA GATGTGTTGT TGCAAGGGCT TCCTGCAGAG
 GCAAATGGGG AGAAAAGATT CCAAGCCCAC AATACAAGGA ATCCCTTTGC AAAGTGTGGC TTGGAGGGAG AGGGAGAGCT
CAGATTTTAG CTGACTCTGC TGGGCTAGAG GTTAGGCCTC AAGATCCAAC AGGGAGCACC AGGGTGCCCA CCTGCCAGGC CTAGAATCTG CCTTCTGGAC TGTTCTGCGC ATATCACTGT GAAACTTGCC AGGTGTTTCA GGCAGCTTTG AGAGGCAGGC TGTTTGCAGT TTCTTATGAA CAGTCAAGTC TTGTACACAG GGAAGGAAAA ATAAACCTGT TTAGAAGACA TAATTGAGAC ATGTCCCTGT TTTTATTACA GTGGCCATGA GGATGACTTG TTCTTTGAAG CTGATGGCCC TAAACAGATG AAGGTAAGAC
 TATGGGTTTA ACTCCCAACC CAAGGAAGGG CTCTAACACA GGGAAAGCTC AAAGAAGGGA GTTCTGGGCC ACTTTGATGC
CATGGTATIT TGTTTTAGAA AGACTTTAAC CTCTTCCAGT GAGACACAGG CTGCACCACT TGCTGACCTG GCCACITGGT CATCATATCA CCACAGTCAC TCACTAACGT TGGTGGTGGT GGCCACACTT GGTGGTGACA GGGGAGGAGT AGTGATAATG
TTCCCATTTC ATAGTAGGAA GACAACCAAG TCTTCAACAT AAATTTGATT ATCCTTTTAA GAGATGGATT CAGCCTATGC CAATCACTTG AGTTAAACTC TGAAACCAAG AGATGATCTT GAGAACTAAC ATATGTCTAC CCCTTTTGAG TAGAATAGTT
TITTGCTACC TGGGGTGAAG CITATAACAA CAAGACATAG ATGATATAAA CAAAAAGATG AATTGAGACT TGAAAGAAAA CCATTCACTT GCTGTTTGAC CTTGACAAGT CATTTTACCC GCTTTGGACC TCATCTGAAA AATAAAGGGC TGAGCTGGAT GATCTCTGAG ATTCCAGCAT CCTGCAACCT CCAGTTCTGA AATATTTTCA GTTGTAGCTA AGGGCATTTG GGCAGCAAAT
TCTTTCAAGC CTTTGAACCA TTATCAGCCT TAAGGCAACC TCAGTGAAGC CTTAATACGG AGCTTCTCTG AATAAGAGGA
AAGTGGTAAC ATTTCACAAA AAGTACTCTC ACAGGATTTG CAGAATGCCT ATGAGACAGT GTTATGAAAA AGGAAAAAAA AGAACAGTGT AGAAAAATTG AATACTTGCT GAGTGAGCAT AGGTGAATGG AAAATGTTAT GGTCATCTGC ATGAAAAAGC
ATTITATITI GITTIGITIT GITTIGITIT GITTATGAG ACAGAGICTC ACTCIGITGC CCAGGCIGGA GIGCAGIGGT ACAATCITGG CITACIGCAT CCTCCACCTC CIGAGTICAA GCGATTCTCC TICCTCAGTC TCCTGAATAG CTAGGAITAC
AGGTGCACCC CACCACACCC AGCTAATTTT TGTATTTTTA GTAGAGAAGG GGTTTCGCCA TGTTGGCCAG GCTGGTTTTG
AAGTCCTGAC CTAAATGATT CATCCACCTC GGCTTCCCAA AGTGCTGGGA TTACAGGCAT GAGCCACCAC GCCTGGCCCA
GAGAGGGATG ATCTTTAGAA GCTCGGGATT CTTTCAAGCC CTTTCCTCCT CTCTGAGCTT TCTACTCTCT GATGTCAAAG
CATGGTTCCT GGCAGGACCA CCTCACCAGG CTCCCTCCCT CGCTCTCTCC GCAGTGCTCC TTCCAGGACC TGGACCTCTG
CCCTCTGGAT GGCGGCATCC AGCTACGAAT CTCCGACCAC CACTACAGCA AGGGCTTCAG GCAGGCCGCG TCAGTTGTTG
TGGCCATGGA CAAGCTGAGG AAGATGCTGG TTCCCTGCCC ACAGACCTTC CAGGAGAATG ACCTGAGCAC CTTCTTTCCC
TTCATCTTTG AAGAAGGTAG TTAGCCAAGA GCAGGCAGTA GATCTCCACT TGTGTCCTCT TGGAAGTCAT CAAGCCCCAG CCAACTCAAT TCCCCCAGAG CCAAAGCCCT TTAAAGGTAG AAGGCCCAGC GGGGAGACAA AACAAAGAAG GCTGGAAACC
AAAGCAATCA TCTCTTTAGT GGAAACTATT CTTAAAGAAG ATCTTGATGG CTACTGACAT TTGCAACTCC CTCACTCTTT CTCAGGGGCC TTTCACTTAC ATTGTCACCA GAGGTTCGTA ACCTCCCTGT GGGCTAGTGT TATGACCATC ACCATTTTAC CTAAGTAGCT CTGTTGCTCG GCCACAGTGA GCAGTAATAG ACCTGAAGCT GGAACCCATG TCTAATAGTG TCAGGTCCAG
TGTTCTTAGC CACCCCACTC CCAGCTTCAT CCCTACTGGT GTTGTCATCA GACTTTGACC GTATATGCTC AGGTGTCCTC
CAAGAAATCA AATTITIGCCA CCTCGCCTCA CGAGGCCTGC CCTTCTGATT TTATACCTAA ACAACATGTG CTCCACATTT CAGAACCTAT CTTCTTCGAC ACATGGGATA ACGAGGCTTA TGTGCACGAT GCACCTGTAC GATCACTGAA CTGCACGCTC
CGGGACTCAC AGCAAAAAAG CTTGGTGATG TCTGGTCCAT ATGAACTGAA AGCTCTCCAC CTCCAGGGAC AGGATATGGA
GCAACAAGGT AAATGGAAAC ATCCTGGTTT CCCTGCCTGG CCTCCTGGCA GCTTGCTAAT TCTCCATGTT TTAAACAAAG
TAGAAAGTTA ATTTAAGGCÁ AATGATCAAC ACAAGTGAAA AAAAATATTA AAAAGGAATA TACAAACTTT GGTCCTAGAA
ATGGCACATT TGATTGCACT GGCCAGTGCA TTTGTTAACA GGAGTGTGAC CCTGAGAAAT TAGACGGCTC AAGCACTCCC AGGACCATGT CCACCCAAGT CTCTTGGGCA TAGTGCAGTG TCAATTCTTC CACAATATGG GGTCATTTGA TGGACATGGC
CTAACTGCCT GTGGGTTCTC TCTTCCTGTT GTTGAGGCTG AAACAAGAGT GCTGGAGCGA TAATGTGTCC ATCCCCTCC CCAGTCTTCC CCCCTTGCCC CAACATCCGT CCCACCCAAT GCCAGGTGGT TCCTTGTAGG GAAATTTTAC CGCCCAGCAG GAACTTATAT CTCTCCGCTG TAACGGGCAA AAGTTTCAAG TGCGGTGAAC CCATCATTAG CTGTGGTGAT CTGCCTGGCA
```

TCGTGCCACA GTAGCCAAAG CCTCTGCACA GGAGTGTGGG CAACTAAGGC TGCTGACTTT GAAGGACAGC CTCACTCAGG CCAGTITCTT CCCATGGGCT ACTCTCTGTT CCTGAAACAG TTCTGGTGCC TGATTTCTGG CAGAAGTACA GCTTCACCTC
TTCCTTCC TTCCACATTG ATCAAGTTGT TCCGCTCCTG TGGATGGGCA CATTGCCAGC CAGTGACACA ATGGCTTCCT
TCCTTCCTTC CTTCAGCATT TAAAATGTAG ACCCTCTTTC ATTCTCCGTT CCTACTGCTA TGAGGCTCTG AGAAACCCTC
AGGCCTTTGA GGGGAAACCC TAAATCAACA AAATGACCCT GCTATTGTCT GTGAGAAGTC AAGTTATCCT GTGTCTTAGG CCAAGGAACC TCACTGTGGG TTCCCACAGA GGCTACCAAT TACATGTATC CTACTCTGGG GGCTAGGGGT TGGGGTGACC CTGCATGCTG TGTCCCTAAC CACAAGACCC CCTTCTTCT TCAGTGGTGT TCTCCATGTC CTTTGTACAA GGAGAAGAAA GTAATGACAA AATACCTGTG GCCTTGGGCC TCAAGGAAAA GAATCTGTAC CTGTCCTGCG TGTTGAAAGA TGATAAGCCC ACTCTACAGC TGGAGGTAAG TGAATGCTAT GGAATGAAGC CCTTCTCAGC CTCCTGCTAC CACTTATTCC CAGACAATTC ACCITCTCCC CGCCCCCATC CCTAGGAAAA GCTGGGAACA GGTCTATTTG ACAAGTTTTG CATTAATGTA AATAAATTTA ACATAATTTT TAACTGCGTG CAACCTTCAA TCCTGCTGCA GAAAATTAAA TCATTTTGCC GATGTTATTA TGTCCTACCA TAGTTACAAC CCCAACAGAT TATATATTGT TAGGGCTGCT CTCATTTGAT AGACACCTTG GGAAATAGAT GACTTAAAGG GTCCCATTAT CACGTCCACT CCACTCCCAA AATCACCACC ACTATCACCT CCAGCTTTCT CAGCAAAAGC TTCATTTCCA AGTTGATGTC ATTCTAGGAC CATAAGGAAA AATACAATAA AAAGCCCCTG GAAACTAGGT ACTTCAAGAA GCTCTAGCTT AATTTTCACC CCCCCAAAAA AAAAAAATTC TCACCTACAT TATGCTCCTC AGCATTTGGC ACTAAGTTTT AGAAAAGAAG AAGGGCTCTT TTAATAATCA CACAGAAAGT TGGGGGCCCA GTTACAACTC AGGAGTCTGG CTCCTGATCA TGTGACCTGC TCGTCAGTTT CCTTTCTGGC CAACCCAAAG AACATCTTC CCATAGGCAT CTTTGTCCCT TGCCCCACAA AAATTCTTCT TTCTCTTTCG CTGCAGAGTG TAGATCCCAA AAATTACCCA AAGAAGAAGA TGGAAAAGCG ATTTGTCTTC AACAAGATAG AAATCAATAA CAAGCTGGAA TITGAGTCTG CCCAGTTCCC CAACTGGTAC ATCAGCACCT CTCAAGCAGA AAACATGCCC GTCTTCCTGG GAGGGACCAA AGGCGGCCAG GATATAACTG ACTTCACCAT GCAATTTGTG TCTTCCTAAA GAGAGCTGTA CCCAGAGAGT CCTGTGCTGA ATGCGGCCAG GATATAACTO ACTICACCAT GCAATTIGTG TCTCCTAAA GAGAGCTGTA
TAGCCTGGAC TTTCCTGTTG TCTACACCAA TGCCCAACTG CCTGCCTTAG GGTAGTGCTA AGAGGATCTC CTGTCCATCA
GCCAGGACAG TCAGCTCTCT CCTTTCAGGG CCAATCCCCA GCCCTTTTGT TGAGCCAGGC CTCTCTCACC TCTCCTACTC
ACTTAAAGCC CGCCTGACAG AAACCACGGC CACATTTGGT TCTAAGAAAC CCTCTGTCAT TCGCTCCCAC ATTCTGATGA
GCAACCGCTT CCCTATTTAT TTATTTATTT GTTTGTTTGT TTTGATTCAT TGGTCTAATT TATTCAAAGG GGGCAAGAAG
TAGCAGTGTC TGTAAAAGAG CCTAGTTTTT AATAGCTATG GAATCAATTC AATTTGGACT GGTGTGCTCT CTTTAAATCA AGTCCTTTAA TTAAGACTGA AAATATATAA GCTCAGATTA TTTAAATGGG AATATTTATA AATGAGCAAA TATCATACTG
TTCAATGGTT CTGAAATAAA CTTCACTGAA GAAAAAAAA AAAGGGTCTC TCCTGATCAT TGACTGTCTG GATTGACACT GACAGTAAGC AAACAGGCTG TGAGAGTTCT TGGGACTAAG CCCACTCCTC ATTGCTGAGT GCTGCAAGTA CCTAGAAATA TCCTTGGCCA CCGAAGACTA TCCTCCTCAC CCATCCCTT TATTTCGTTG TTCAACAGAA GGATATTCAG TGCACATCTG GAACAGGATC AGCTGAAGCA CTGCAGGGAG TCAGGACTGG TAGTAACAGC TACCATGATT TATCTATCAA TGCACCAAAC ATCTGTTGAG CAAGCGCTAT GTACTAGGAG CTGGGAGTAC AGAGATGAGA ACAGTCACAA GTCCCTCCTC AGATAGGAGA GGCAGCTAGT TATAAGCAGA ACAAGGTAAC ATGACAAGTA GAGTAAGATA GAAGAACGAA GAGGAGTAGC CAGGAAGGAG GGAGGAGAC GACATAAGAA TCAAGCCTAA AGGGATAAAC AGAAGATTTC CACACATGGG CTGGGCCAAT TGGGTGTCGG TTACGCCTGT AATCCCAGCA CTTTGGGTGG CAGGGGCAGA AAGATCGCTT GAGCCCAGGA GTTCAAGACC AGCCTGGGCA ACATAGTGAG ACTCCCATCT CTACAAAAA TAAATAAATA AATAAAACAA TCAGCCAGGC ATGCTGGCAT GCACCTGTAG TCCTAGCTAC TTGGGAAGCT GACACTGGAG GATTGCTTGA GCCCAGAAGT TCAAGACTGC AGTGAGCTTA TCCGTTGACC TGCAGGTCGA C ACAAACCTTT TCGAGGCAAA AGGCAAAAAA GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCAATGCTCA AGTGTCTGAA GCAGCCATGG CAGAAGTACC TAAGCTCGCC AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGATGACT TGTTCTTTGA AGCTGATGGC CCTAAACAGA TGAAGTGCTC CTTCCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA TCTCCGACCA CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CCAGGAGAAT GACCTGAGCA CCTTCTTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCTT CGACACATGG GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAACTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GATGTCTGGT CCATATGAAC TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC TCCATGTCCT TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTTGGGCCTC AAGGAAAAGA
ATCTGTACCT GTCCTGCGTG TTGAAAGATG ATAAGCCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCCAA CTGGTACATC AGCACCTCTC AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAGG CGGCCAGGAT ATAACTGACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCCT GTGCTGAATG TGGACTCAAT CCCTAGGGCT GGCAGAAAGG GAACAGAAAG GTTTTTGAGT ACGGCTATAG CCTGGACTTT CCTGTTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA GGATCTCCTG TCCATCAGCC AGGACAGTCA GCTCTCTCT TTCAGGGCCA ATCCCAGCCC
TTTTGTTGAG CCAGGCCTCT CTCACCTCTC CTACTCACTT AAAGCCCGCC TGACAGAAAC CAGGCCACAT TTTGGTTCTA AGAAACCCTC CTCTGTCATT CGCTCCCACA TTCTGATGAG CAACCGCTTC CCTATTTATT TATTTATTTG TTTGTTTGTT TTGATTCATT GGTCTAATTT ATTCAAAGGG GGCAAGAAGT AGCAGTGTCT GTAAAAGAGC CTAGTTTTTA ATAGCTATGG AATCAATTCA ATTTGGACTG GTGTGCTCTC TTTAAATCAA GTCCTTTAAT TAAGACTGAA AATATATAAG CTCAGATTAT TTAAATGGGA ATATTTATAA ATGAGCAAAT ATCATACTGT TCAATGGTTC TCAAATAAAC TTCACT CTGGCAGGAG TAGCAGCTGC CCCTTGGCGC GACTGCTGGA GCCGCGAACT AGAGAAACAC AGACACGCCT CATAGAGCAA CGGCGTCTCT CGGAGCGTGG AGCCCGCCAA GCTCGAGCTG AGCTTTCGCT TGCCGTCCAC CACTGCCCAC ACTGTCGTTT GCTGCCATCG CAGACCTGCT GCTGACTTCC ATCCCTCTGG ATCCGGCAAG GGCCTGCGAT TTTGACAATG TCAAGATTTA CCGTATATCC CTGTTTGTTT GGATACACCA GTGACGTCCA CTTCTAGAAG ACAAAGTTAT ATTACTTAAA CAACCAAAGA TATGAAACTA TCCATGAAGA ACAATATTAT CAATACAGG CAGTCTTTTG TAACCATGCC CAATGTGATT GTACCAGATA TTGAAAAGGA
AATACGAAGG ATGGAAAATG GAGCATGCAG CTCCTTTTCT GAGGATGATG ACAGTGCCTC TACATCTGAA GAATCAGAGA ATGAAAACCC TCATGCAAGG GGTTCCTTTA GTTATAAGTC ACTCAGAAAG GGAGGACCAT CACAGAGGGA GCAGTACCTG CCTGGTGCCA TTGCCATTTT TAATGTGAAC AACAGCGACA ATAAGGACCA GGAACCAGAA GAAAAAAAGA AAAAGAAAAA AGAAAAGAAG AGCAAGTCAG ATGATAAAAA CGAAAATAAA AACGACCCAA AGAAGAAGAT GGAAAAGCGA ATGGCCAAAG AGAAAAGAAG AGCAAAGTCAG ATGATAAAAA CGAAAATAAA AACGACCCAA AGAAGAAGAT GGAAAAGCGA ATGGCCAAAG
TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGTGA AAATGAAGAA GACAGTTCCT CCATTGATCA TCTGTCTCTG
TAAACCATCA TGTAAGCTAT GGCCCACTCC ATGAAGGCTG CATGGATCAA TCTGTGTCTC TGAGTATCTC
TGAAACCTCT AAAACATCCA AGCTTACCTT CAAGGAGGAGC ATGGTGGTGG TAGCAACCAA CCGGAAGGTT CTGAAGAAGA
GACGGTTGAG TTTAAGCCAA TCCATCACTG ATGATGACCT GGAGGCCATC GCCAATGACT CAGAGGAAGA AATCATCAAG
CCTAGGTCAG CACCTTTTAG CTTCCTGAGC AATGTGAAAT ACAACTTTAT GAGGATCATC AAATACCGAAT TCATCCTGAA
TGACGCCCTC AATCAAAGTA TAATTCGAGC CAATGATCAG TACCTCACGG CTGCTGCATT ACATAATCTG GATGAAGCAG
TGAAATTTGA CATGGGTGCT TATAAGTCAT CAAAGGATGA TGCTAAAAATT ACCGTGATTC TAAGAATCTC AAAAACTCAA
TTGTATGTGA CTGCCCAAGA TGAAGACCAA CCAGTGCTGC TGAAGGAGAT CCCAAAACCA TCACAGGTAG

TGAGACCAAC CTCCTCTTCT TCTGGGAAAC TCACGGCACT AAGAACTATT TCACATCAGT TGCCCATCCA AACTTGTTTA TTGCCACAAA GCAAGACTAC TGGGTGTGCT TGGCAGGGGG GCCACCCTCT ATCACTGACT TTCAGATACT GGAAAACCAG GCGTAGGTCT GGAGTCTCAC TTGTCTCACT TGTGCAGTGT TGACAGTTCA TATGTACCAT GTACATGAAG AAGCTAAATC CTITACTGTT AGTCATITGC TGAGCATGTA CTGAGCCTTG TAATTCTAAA TGAATGTTTA CACTCTTTGT AAGAGTGGAA CCAACACTAA CATATAATGT TGTTATTTAA AGAACACCT ATATTTTGCA TAGTACCAAT CATTTTAATT ATTATTCTTC ATAACAATTT TAGGAGGACC AGAGCTACTG ACTATGGCTA CCAAAAAGAC TCTACCCATA TTACAGATGG GCAAATTAAG GCATAAGAAA ACTAAGAAAT ATGCACAATA GCAGTTGAAA CAAGAAGCCA CAGACCTAGG ATTTCATGAT TTCATTTCAA CTGTTTGCCT TCTGCTTTTA AGTTGCTGAT GAACTCTTAA TCAAATAGCA TAAGTTTCTG GGACCTCAGT TTTATCATTT TCAAAATGGA GGGAATAATA CCTAAGCCTT CCTGCCGCAA CAGTTTTTTA TGCTAATCAG GGAGGTCATT TTGGTAAAAT ACTICICGAA GCCGAGCCTC AAGATGAAGG CAAAGCACGA AATGITATIT TITAATTATT ATTITATAT GTATITATAA ATATATTAA GATAATTATA ATATACTATA TITATGGGAA CCCCTICATC CTCTGAGTGT GACCAGGCAT CTCACACAT AGCAGACAGT GITTTCTGGG ATAAGTAAGT TIGATTTCAT TAATACAGGG CATTTTGGTC CAAGTTGTGC TTATCCCATA GCCAGGAAAC TCTGCATTCT AGTACTTGGG AGACCTGTAA TCATATAATA AATGTACATT AATTACCTTG AGCCAGTAAT TGGTCCGATC TTTGACTCTT TTGCCATTAA ACTTACCTGG GCATTCTTGT TTCATTCAAT TCCACCTGCA ATCAAGTCCT ACAAGCTAAA ATTAGATGAA CTCAACTTTG ACAACCATAG ACCACTGTTA TCAAAACTTT CTTTTCTGGA ATGTAATCAA TGTTTCTTCT AGGTTCTAAA AATTGTGATC AGACCATAAT GTTACATTAT TATCAACAAT AGTGATTGAT AGAGTGTTAT 15 CAGTCATAAC TAAATAAAGC TTGCAAGTGA GGGAGTCATT TCATTGGCGT TTGAGTCAGC AAAGAAGTCA AG AGCTGCCAGC CAGAGAGGA GTCATTTCAT TGGCGTTTGA GTCAGCAAAG AAGTCAAGAT GGCCAAAGTT CCAGACATCT TTGAAGACCT GAAGAACTGT TACAGTGAAA ATGAAGAAGA CAGTTCCTCC ATTGATCATC TGTCTCTGAA TCAGAAATCC TTCTATCATG TAAGCTATGG CCCACTCCAT GAAGGCTGCA TGGATCAATC TGTGTCTCTG AGTATCTCTG AAACCTCTAA AACATCCAAGCTTACCTTCA AGGAGAGCAT GGTGGTAGTA GCAACCAACG GGAAGGTTCT GAAGAAGAGA CGGTTGAGTT TAAGCCAATC CATCACTGAT GATGACCTGG AGGCCATCGC CAATGACTCA GAGGAAGAAA TCATCAAGCC TAGGTCATCA CCTTTTAGCT TCCIGAGCAA TGTGAAATAC AACTTTATGA GGATCATCAA ATACGAATTC ATCCTGAATG ACGCCCTCAA TCAAAGTATA ATTCGAGCCA ATGATCAGTA CCTCACGGCT GCTGCATTAC ATAATCTGGA TGAAGCAGTG AAATTTGACA TGGGTGCTTA TAAGTCATCA AAGGATGATG CTAAAATTAC CGTGATTCTA AGAATCTCAA AAACTCAATT GTATGTGACT GCCCAAGATG AAGACCAACC AGTGCTGCTG AAGGAGATGC CTGAGATACC CAAAACCATC ACAGGTAGTG AGACCAACCT CCTCTTCTTC TGGGAAACTC ACGGCACTAA GAACTATTTC ACATCAGTTG CCCATCCAAA CTTGTTTATT GCCACAAAGC AAGACTACTG GGTGTGCTTG GCAGGGGGGC CACCCTCTAT CACTGACTTT CAGATACTGG AAAACCAGGC GTAGGTCTGG AGTCTCACTT GTCTCACTTG TGCAGTGTTG ACAGTTCATA TGTACCATGT ACATGAAGAA GCTAAATCCT TTACTGTTAG TCATTTGCTG AGCATGTACT GAGCCTTGTA ATTCTAAATG AATGTTTACA CTCTTTGTAA GAGTGGAACC AACACTAACA TATAATGTTG
TTATTTAAAG AACACCCTAT ATTTTGCATA GTACCAATCA TTTTAATTAT TATTCTTCAT AACAATTTTA GGAGGACCAG
AGCTACTGAC TATGGCTACC AAAAAGACTC TACCCATATT ACAGATGGGC AAATTAAGGC ATAAGAAAAC TAAGAAATAT GCACAATAGC AGTCGAAACA AGAAGCCACA GACCTAGGAT TTCATGATTT CATTTCAACT GTTTGCCTTC TGCTTTTAAG TTGCTGATGA ACTCTTAATC AAATAGCATA AGTTTCTGGG ACCTCAGTTT TATCATTTTC AAAATGGAGG GAATAATACC
TAAGCCTTCC TGCCGCAACA GTTTTTTATG CTAATCAGGG AGGTCATTTT GGTAAAATAC TTCTCGAAGC CGAGCCTCAA
GATGAAGGCA AAGCACGAAA TGTTATTTTT TAATTATTAT TTATATATGT ATTTATAAAT ATATTTAAGA TAATTATAAAT
ATACTATATT TATGGAACC CCTTCATCCT CTGAGTGTGA CCAGGCATCC TCCACAATAG CAGACAGTGT TTTCTGGGAT AAGTAAGTIT GATTICATTA ATACAGGGCA TITTGGTCCA AGTIGTGCTT ATCCCATAGC CAGGAAACTC TGCATTCTAG
TACTTGGGAG ACCTGTAATC ATATAATAAA TGTACATTAA TTACCTTGAG CCAGTAATTG GTCCGATCTT TGACTCTTTT
GCCATTAAAC TTACCTGGGC ATTCTTGTTT CATTCAATTC CACCTGCAAT CAAGTCCTAC AAGCTAAAAT TAGATGAACT CAACTITGAC AACCATGAGA CCACTGTTAT CAAAACTITC TITTCTGGAA TGTAATCAAT GTTTCTTCTA GGTTCTAAAA ATTGTGATCA GACCATAATG TTACATTATT ATCAACAATA GTGATTGATA GAGTGTTATC AGTCATAACT AAATAAAGCT TGCAACAAAA TTCTCTG GCTCAGGGCA CATGCCTCCC CTCCCCAGGC CGCGGCCCAG CTGACCCTCG GGGCTCCCC GGCAGCGGAC AGGGAAGGGT TAAAGGCCCC CGGCTCCCTG CCCCTGCCC TGGGGAACCC CTGGCCCTGT GGGGACATGA
ACTGTGTTTG CCGCCTGGTC CTGGTCGTGC TGAGCCTGTG GCCAGATACA GCTGTCGCCC CTGGGCCACC ACCTGGCCCC
CCTCGAGTTT CCCCAGACCC TCGGGCCGAG CTGGACAGCA CCGTGCTCCT GACCCGCTCT CTCCTGGCGG ACACGCGGCA
GCTGGCTGCA CAGCTGAGGG ACAAATTCCC AGCTGACGGG GACCACAACC TGGATTCCCT GCCCACCCTG GCCATGAGTG CGGGGGCACT GGGAGCTCTA CAGCTCCCAG GTGTGCTGAC AAGGCTGCGA GCGGACCTAC TGTCCTACCT GCGGCACGTG CAGTGGCTGC GCCGGGCAGG TGGCTCTTCC CTGAAGACCC TGGAGCCCGA GCTGGGCACC CTGCAGGCCC GACTGGACCG GCTGCTGCGC CGGCTGCAGC TCCTGATGTC CCGCCTGGCC CTGCCCCAGC CACCCCCGGA CCCGCCGGCG CCCCCGCTGG CGCCCCCTC CTCAGCCTGG GGGGGCATCA GGGCCGCCCA CGCCATCCTG GGGGGGCTTGC ACCTGACACT TGACTGGGCC GTGAGGGGAC TGCTGCTGCT GAAGACTCGG CTGTGACCCG GGGCCCAAAG CCACCACCGT CCTTCCAAAG CCAGATCTTA TITATITATT TATITCAGTA CTGGGGGCGA AACAGCCAGG TGATCCCCCC GCCATTATCT CCCCCTAGTT AGAGACAGTC CTTCCGTGAG GCCTGGGGGA CATCTGTGCC TTATITATAC TTATITATTT CAGGAGCAGG GGTGGGAGGC AGGTGGACTC CTGGGTCCCC GAGGAGGAGG GGACTGGGGT CCCGGATTCT TGGGTCTCCA AGAAGTCTGT CCACAGACTT CTGCCCTGGC TCTTCCCCAT CTAGGCCTGG GCAGGAACAT ATATTATTTA TTTAAGCAAT TACTTTTCAT GTTGGGGTGG GGACGGAGGG GAAAGGGAAG CCTGGGTTTT TGTACAAAAA TGTGAGAAAC CTTTGTGAGA CAGAGAACAG GGAATTAAAT GTGTCATACA TATCC CAGCTGCGGC ATCCTCTGTC TCAGAGTCTT GGTGTCTCTG TTCCTTTCCC CTCGGGGTCT CCCCAAGTCC GACGCCAATG ACCTCACCAG CCCCTCTCCG ACCACCCCCC CCTTTCCCTT TTCAACTTTT CCAACTTTTC CTTCCGTGCC GGCTCCCCG GCAGCGGACA GGGAAGGGTT AAAGGCCCCC GGCTCCCTGC CCCTGCCCT GGGGAACCCC TGGCCTGTG GGGACATGAA CTGTAAGTTG GTTCATGGGG AGGGTGGAGG GGACAGGGAG GCAGGGAGGA GAGGGACCCA CGGCGGGGGT GGGAGCAGAC CCCGCTGAGT CGCACAGAGA GGGACCCGGA GACAGGCAGC CGGGGAGGAG AGCAGCTTCG GAGACAGGAG GCGGCGGAGG AGATGGGCAG AGAGAGACAC AGACAGGAGC GGATGGAGGC AGCCAATCAG AGGCGCCGCA GGAGGGACGG GCCAGACAGG GCCCGAGAGG AGCGAGACGC GAGACCGAGC AGGGGCAGGG ACGCAGGGAC TGGTGCCGGG AGGGAGGTGA CCCCCATCGA CCCAGGCCCC AGGGAGCCCG CGGGGACCGG GAGACTCCCT GGGATTCCGG CAGAGAGGCT CCGGAGGGAA ACTGAGGCAG GGTCCGCGGA QAGCGGAGCA AGCCAGGGAG TAGCGACCCC AGCCGGGGG AGGAGAGAA CTGGGCGCCG GGGGAAAGCG GGGAGAGCCG GGCAGATGCG GCCGACGGAG GCGCGGACAG ACCGACGGCT GGCGGGCCCG GGGGCCGGC

```
TGGGGGTGTG CGAGGCGCGG GCGCCCGGGG AGCGCTGATT GGCTGGCGGG TGGCCGGGTG GGCGGGCGG CCGGGGTGGG
CTGCGGGGAG CGAGCTCCGG ACCCCGGCGC CCCCGGGGCC CCCCGCGCCC CCCGCGCCA GCTCTCCCGC TCCCGGCGCCC
CGGCCGGGCC ATGGCTCTGC CCCTCTCCGC CCAGGTGCGC TGCGGCCCGG GCTTCTGCCG CCCACCCGGC GGGCTCCTGG
GAGGGCGTCT AAGGGGTCTC CCGTGGGAGA GGTCCGTGTC TCCCGGGACTC CGTCCTGGGC TTTTGGCTCC TTCCCCTGCT CCCAGCCAGC TCGGGCTCCC GCGGCCCGGG GAGGGGGCAG GTTCTGGCCT GTGCCTCCC CACCATCCGC GCCCCGGGGC
CCAGATTCCG GCGTCCGGGG GCGGACGGGA GACGCCCGGG CCGCGTCTGC TCCGACGGGC GGGGCAGCCA GAGCCAGGGA
GGGAGAGGGA AGCCCGCCTG GCCCTGCGAC CTGCCCGCGG GCGTTCCACC CTGGGACTTA AGACCTCCAG CTCCATCCTC
CCTAAGGCCG GGAGTCCAGG CCCCAGACCC TCCTCCCCGA GACCCAGGAG TCCAGACCCC AGGCCTTCCT CCCTCAGACC
TAGGAGTCCA GGCCCCCAGC CTCTCCTCCC TCAGACCCAG GAGGAGTCCA GACCCCAGTT CCTCCTCCCT CAGACCCGGG
AGTCCAGCCC AGGCCCTCCT CTCTCAGACC CGGAGTCCAG CCTGAGCTCT CTGCCTTATC CTGCCCCCAG GTGTTTGCCG
CCTGGTCCTG GTCGTGCTGA GCCTGTGGCC AGATACAGCT GTCGCCCCTG GGCCACCACC TGGCCCCCCT CGAGTTTCCC
CAGACCCTCG GGCCGAGCTG GACAGCACCG TGCTCCTGAC CCGCTCTCTC CTGGCGGACA CGCGGCAGCT GGCTGCACAG
CTGGTAGGAG AGACTGGGCT GGGGCCAGCA CAGGAGTGAG AGGCAGAGAG GAACGGAGAG GAGTCTGCGG GCAGCCACTT
GGAGGGGTTC TGGGCTCTCA GGTGGCAGAG TGAGGGAGGG GAAGAGTTGG GGGCCTGGCG TGGGGGATGG AGGGAGCCCC
GAGGCTGGGC AGGGGCCACC TCACAGCTTT TTTCCCTGCC AGAGGGACAA ATTCCCAGCT GACGGGGACC ACAACCTGGA
TTCCCTGCCC ACCCTGGCCA TGAGTGCAGG GGCACTGGGA GCTCTACAGG TAAGGGCAAG GGAGTGGGCT GGGGACAAGG
TGGGAGGCAG GCAGTGAAGG GGGCGGGGAG GATGAGGGGC ACTGGTCGGG TGTTCTCTGA TGTCCCGGCT CTATCCCCAG
CTCCCAGGTG TGCTGACAAG GCTGCGAGCG GACCTACTGT CCTACCTGCG GCACGTGCAG TGGCTGCGCC GGGCAGGTGG
CTCTTCCCTG AAGACCCTGG AGCCCGAGCT GGGCACCCTG CAGGCCCGAC TGGACCGGCT GCTGCGCCGG CTGCAGCTCC
TGGTATGTCC TGGCCCCAAG ACCTGACACC CCAGACCCCC ACCCCTGGCC CCAAAATCCT GTGGCCTGAG TCCTTGAAGC CTGAGACCCC AGACCCGAGT GCAACAGCCC CGCTCTGAGA CCCTGACACC CTAACAGCCC GCTCTGAGAC CCTGACACCG
TAACAGCCCC GCTCTGAGAC CCTGACCCTA ACAGTCCTGC TCTGAGACCC TGACCCTGCA GTCCCAAGAT CCTGTGGCCC
TGAGACCCTA AGGCCTAGA CCCCCAAATC CTGCCCAGAA ACTTCAAATT CTCACCCAAG ACCCTGAGAC TCCATCATCA
ATGACCTCAA AGTCCCCAGA TCCCAGCCCC TAAGACCCAA GACCCCATCC TGAAGCCCAA AGCCTTGAGA ATTCAAATCC
TCACCTCAAG ACTTGGAGAC CCTGGCCCCA TGACATTGAA AACCATGGAC CTGGCCAGGC GTGGTGGCTC ACGCCTGTAA
TCCCAGCACT TTGGGAGGCC GAGGCAAGTG GATCACCTGA GGTCGGGAGT TCAAGACCAG CCAGACCAAC ATGGTGAAAC
CCTGTCTCTA CTAAAAATAC AAAATTAGCC AGGCGTGGTG GTGCATGCCT GTAATCCCAG CTACTTGGGA GGCTGAGGCA
CCCAGGCCCC AGCCCTGAGA TCCTGACATC TTAAAGATCC CAGGCCCTAA GATACAAGAC CTTGACCCAA AGCCAGCCTT
GGGACCCTGG CTGTACAAAC CCAAGACCTC CAGGACCTAG ACCCCGAGCC CTGAGGCCCT ATGTCTCACT CCCAACATCG
AAAACCCTGA CACCTCAGAT CCTGAGCCTG CGCCTGTACG ACTCCAAGAC CCTCACTTCC AAAGCCAGGC CCAAAGCCCT
GAGACCAGAA GACTTCAAAC CCTGGTTCTT GGGCCTAACT CCAAAGACCC TGGATCTCAA ATTCCAACTT CTAGCTCTGA
GACTCCAGCC CTCACCCATG AGTTCCTGAA CTTGAACCCA GAGACCCCAT CTCTAAGACT TCAGCCTTGA GATCCAGGGC
CTGACCCTAG ACTCGAGCCC ACAGACCTCA GATACTGTCT GTAAAACCCC AGCTCTGGTG GGGAGCAGTG GCTCACTCCT
GTAATCCCAA GGCAGGGGAG GCCAAGGCAG AAGGACCTCT TGAGGCCATG AGTTTGAGAC AGCCTGGGCA GCATAGCAAG ACTCTGTTTC TTAATTATTA TTATTTATTA TATTTTTTGA AGACAGAGTC TCGCGCTCTG TTGCCCAGGC TAGAGTGCAA TGGTGCCATT TCGGCTTGCT GGAACCTCCG CCTCCTGGGC TCAAGCGATT CTCCTGCCTC AGCCTCCTGA GTAGCTGGGA CTTCAGGTGC ACACTGCCAC ACCCGGATAA TTTTTTTTGTA TTTTAGTAGA CACAGGGTTT CACCGTGTTG CCCAGGCTGG
TCACAAACTC CTGAGCTCAG GCCATCCGCC CGCCTCGGCC TCCCAAAGCG CTGGGATAAC AGGCGTGACG CCGCGCCTGG
CTTCTTAATT GTTCTAACAG CAGCGACAAC AACAAAAACC CAGCTCTGAG ATTCCAGCCC CGGCGACTCT AACAGTCCCA
GGCCCGATCC CTCACCTAGA ACCGAGATGC CAGCCCTGAC TCCACAGACT TCACCCCCAA CCCCCACACT CAGCTCTGGA
AGCCCGTCCT GACTCCAGCC TCCATTTTCG GAACCCCACA GCCTGAAGAG CTCCCGGCCT AAACACTTCA CCCCACGCGC
CACAGTCCCC CTGTGAATAT GCAGCCCCGA TTCAGCTGCA GCTCCACAGC ACCCCTGCCC TGCACCCCC CTGCACCCCC
TACCTGTGAC TCACCTCTCT CCTCTCCCCA CAGATGTCCC GCCTGGCCCT GCCCCAGCCA CCCCCGGACC CGCCGGCGCC
CCCGCTGGCG CCCCCCTCCT CAGCCTGGGG GGGCATCAGG GCCGCCCACG CCATCCTGGG GGGGCTGCAC CTGACACTTG ACTGGGCCGT GAGGGGACTG CTGCTGCTGA AGACTCGGCT GTGACCCGGG GCCCAAAGCC ACCACCGTCC TTCCAAAGCC
AGATCTTATT TATTTATTTA TTTCAGTACT GGGGGCGAAA CAGCCAGGTG ATCCCCCCGC CATTATCTCC CCCTAGTTAG AGACAGTCCT TCCGTGAGGC CTGGGGGGCA TCTGTGCCTT ATTTATACTT ATTTATTTCA GGAGCAGGGG TGGGAGGCAG GTGGACTCCT GGGTCCCCGA GGAGGAGGGG ACTGGGGTCC CGGATTCTTG GGTCTCCAAG AAGTCTGTCC ACAGACTTCT
ACGGAGGGGA AAGGGAAGCC TGGGTTTTTG TACAAAAATG TGAGAAACCT TTGTGAGACA GAGAACAGGG AATTAAATGT
GTCATACATA TCCACTTGAG GGCGATTTGT CTGAGAGCTG GGGCTGGATG CTTGGGTAAC TGGGGCAGGG CAGGTGGAGG
GGAGACCTCC ATTCAGGTGG AGGTCCCGAG TGGGCGGGGC AGCGACTGGG AGATGGGTCG GTCACCCAGA CAGCTCTGTG
GAGGCAGGGT CTGAGCCTTG CCTGGGGCCC CGCACTGCAT AGGGCCGTTT GTTTGTTTTT TGAGATGGAG TCTCGCTCTG TTGCCTAGGC TGGAGTGCAG TGAGGCAATC TAAGGTCACT GCAACCTCCA CCTCCCGGGT TCAAGCAATT CTCCTGCCTC
AGCCTCCCGA TTAGCTGGGA TCACAGGTGT GCACCACCAT GCCCAGCTAA TTATTTATTT CTTTTGTATT TTTAGTAGAG ACAGGGTTTC ACCATGTTGG CCAGGCTGGT TTCGAACTCC TGACCTCAGG TGATCCTCCT GCCTCGGCCT CCCAAAGTGC
TGGGATTACA GGTGTGAGCC ACCACACCTG ACCCATAGGT CTTCAATAAA TATTTAATGG AAGGTTCCAC AAGTCACCCT
GTGATCAACA GTACCCGTAT GGGACAAAGC TGCAAGGTCA AGATGGTTCA TTATGGCTGT GTTCACCATA GCAAACTGGA AACAATCTAG ATATCCAACA GTGAGGGTTA AGCAACATGG TGCATCTGTG GATAGAACGC CACCCAGCCG CCCGGAGCAG
GGACTGTCAT TCAGGGAGGC TAAGGAGAGA GGCTTGCTTG GGATATAGAA AGATATCCTG ACATTGGCCA GGCATGGTGG
CTCACGCCTG TAATCCTGGC ACTTTGGGAG GACGAAGCGA GTGGATCACT GAAGTCCAAG AGTTTGAGAC CGGCCTGCGA
GACATGGCAA AACCCTGTCT CAAAAAAGAA AGAATGATGT CCTGACATGA AACAGCAGGC TACAAAACCA CTGCATGCTG
TGATCCCAAT TTTGTGTTTT TCTTTCTATA TATGGATTAA AACAAAAATC CTAAAGGGAA ATACGCCAAA ATGTTGACAA TGACTGTCTC CAGGTCAAAG GAGAGAGGTG GGATTGTGGG TGACTTTAA TGTGTATGAT TGTCTGTATT TTACAGAATT
TCTGCCATGA CTGTGTATTT TGCATGACAC ATTTTAAAAA TAATAAACAC TATTTTTAGA ATAACAGAAT ATCAGCCTCC
TCCTCTCCAA AAATAAGCCC TCAGGAGGGG ACAAAGTTGA CCGCTGATTG AGCCTGTCAG GGCTGTGCAC-3' (SEQ ID NO:12373)
Human Adenosine A1 Receptor Nucleic Acid and Antisense Oligonucleotide Fragments
5-ATGCCGCCCT CCATCTCAGC TITCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA
COTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTCTCG CTGGCGGTGG
CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC
TCTCCTTCGT GGTGGGACTG CCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC
```

AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCCTC TICCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC ACAAGCCCAG
CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTT CGCATCCAGA
AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA G ATGAGTGTCA GAAGTGTGAA GGGTGCCTGT TCTGAATCCC AGAGCCTCCT CTCCCTCTGT GAGGCTGGCA GGTGAGGAAG GGTTTAACCT CACTGGAAGG AATCCCTGGA GCTAGCGGCT GCTGAAGGCG TCGAGGTGTG GGGGCACTTG GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGGG CCGGGCTGGG AGCGCTGCGG GTCTGCTGAT GTGCCCAGCC TGTGCCCGCC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA TGCCTGACCA TCCCATGAGC AGTCCAGCGC TTCAGGGCTG GGCAGGTCCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT GGGCTGGGAG AAGGTGCTTG GGCTTCTGCG GTGAGGCAGG GGAGTCTGCT TGTCTTAGAT GTTGGTGGTG CAGCCCCAGG ACCAAGCTTA AGGAGAGGAG AGCATCTGCT CTGAGACGGA TGGAAGGAGA GAGGTTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG GCCAGAGGCA GCTAAGGGGC AGGAATCAAG GAGCCTCCGT TCCCACCTCT GAGGACTCTG GACCCCAGGC CATACCAGGT GCTAGGGTGC CTGCTCTCCT TGCCCTGGGC CAGCCCCAGGA TTGTACGTGG GAGGGCAGA AAGGGTAGGT TCAGTAATCA TTTCTGATGA TTTGCTGGAG TGCTGGCTCC ACGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA CGAGGTGGTA GCTCTGAGCC CTCCTTCTTG CCCTGAGCTT TCCGGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG CCACCAGCTC CACTGGCCCC CGTTGCCGGG CCTGGACTGT CCTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC TCAGTGTTGA CTGTAGGCGC CCCTGGGGTG GGTTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCCC TGAGAGCATG TGGGGGAAGG CCTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTTT GGAAGCTCTG TTGCAGGTGT CCGGGGGTCT AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC CCCTGTGTTG GGGGGCAAGG TGGGGGAGCC TGGAGCCCT GTGTGGGAGG GCGAGGCGGG GGAGCCTGGA GCCCCTGTGT GGGAGGGCGA GGCGGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTCGGTTG ACCTTCTGAA CATGAGTGTC AACTCCAGGA CTTGCTTCCA AGCCCTTCCC TCTGTTGGAA ATTGGGTGTG CCCTGGCTCC CAAGGGAGGC CCATGTGACT AATAAAAAAC TGTGAACCCT CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG GAATCCCTGG AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTT GTGACCTTG GTGACCTTG GTGACCTTG GTGCCCGTC TGCTGATGTG CCCAGCCTGT GCCGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT GCTGGTGATC TGGGCGGTGA AGGTGAACCA GGCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTCGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCCTG GTCATCCCCC TCGCCATCCT CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCCT GTCCGGTCCT CATCCTCACC CAGAGCTCCA TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG
GGTCAAGATC CCTCTCCGGT ACAAGATGGT GGTGACCCCC CGGAGGGCCG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CCTTCGTGGT GGGACTGACC CCTATGTTTG GCTGGAACAA TCTGAGTGCG GTGGAGCGGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC CCGTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GTACATGGTC TACTTCAACT TCTTTGTGTG GGTGCTGCCC CCGCTTCTCC TCATGGTCCT CATCTACCTG GAGGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG
TGTCGGCCTC CTCCGGCGAC CCGCAGAAGT ACTATGGGAA GGAGCTGAAG ATCGCCAAGT CGCTGGCCCT CATCCTCTTC
CTCTTTGCCC TCAGCTGCT GCCTTTGCAC ATCCTCAACT GCATCACCCT CTTCTGCCCG TCCTGCCACA AGCCCAGCAT
CCTTACCTAC ATTGCCATCT TCCTCACGCA CGGCAACTCG GCCATGAACC CCATTGTCTA TGCCTTCCGC ATCCAGAAGT GCTGTCCCAG GGGTCTCCCT GAGCCTGCCC CAGCTGGGCT GTTGGCTGGG GGCATGGGG AGGCTCTGAA GAGATACCCA
CAGAGTGTGG TCCCTCCACT AGGAGTTAAC TACCCTACAC CTCTGGGCCC TGCAGGAGGC CTGGGAGGGC AAGGGTCCTA
CGGAGGGACC AGGTGTCTAG AGGCAACAGT GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA
GGGCTGGGCA GGTCCTGGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGC TGGGAGAAG TGCTTGGGCT TCTGCGGTGA GGCAGGGGAG TCTGCTTGTC TTAGATGTTG GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAGG TTGAGGATGC ACTGGCCTGT TCTGTAGGAG AGACTGGCCA GA GAT GGA GGG CGG CAT GGC GGG G CGG GTC GCC GG GGC GGG CBC BGG C GGC GGG CBC GC GGC CTG G GGB GGG CGG C GBT GGB GGG GG CTG GGC GC GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGC CAC AGG CTG GGC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTCTCG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGG AGCCCGTGAT

CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCCTC TTCCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC ACAAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA G ATGAGTGTCA GAAGTGTGAA GGGTGCCTGT TCTGAATCCC AGAGCCTCCT CTCCCTCTGT GAGGCTGGCA GGTGAGGAAG GGTTTAACCT CACTGGAAGG AATCCCTGGA GCTAGCGGCT GCTGAAGGCG TCGAGGTGTG GGGGCACTTG GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGGG CCGGGCTGGG AGCGCTGCGG CGGGAGCCGG AGGACTATGA GCTGCCGCGC GTTGTCCAGA GCCCAGCCCA GCCCTACGCG CGCGGCCCGG AGCTCTGTTC CCTGGAACTT TGGGCACTGC CTCTGGGACC CCTGCCGGCC AGCAGGCAGG ATGGTGCTTG CCTCGTGCCC CTTGGTGCCC GTCTGCTGAT GTGCCCAGCC TGTGCCCGCC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG
TGCCCGGGAA CGTGCTGGTG ATCTGGGCCG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTGTCG CTGGCGTGG CTGATGTGGC CGTGGTTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGG AGCCCGTGAT CAAGTGCGAG TCCGAAGAGG TCATCAGAT GAGGTGGAGC GGGCCTGGGC
ACTCATCTTGT GTGGGTGCTG CCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG
CTCAACAAGA AGGTGTCGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC
CCTCATCCTC TTCCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC
ACAAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACCGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC
CGCATCCAGA AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACCA
GGATCTCCCA GAAGAAGAGGC CTGATGACTA GACCCCGCCT TCCGCTCCCA CCAGCCCACA TCCAGTGGGGTCT CCCTGAGCTC
GTCCTCACAT GCCCGCTGTC CCAGGGGGTCT CCCTGAGCCT GCCCCAGCTG GGCTGTTTGGC TGGGGGCATG GGGGGCATG GTCCTCACAT GCCCGCTGTC CCAGGGGTCT CCCTGAGCCT GCCCCAGCTG GGCTGTTGGC TGGGGGGCATG GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GCCCTGCAGG AGGCCTGGGA GGGCAAGGGT CCTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTTCTG AGCCCCCACC TGCCTGACCA TCCCATGAGC AGCATCTGCT CTGAGACGGA TGGAAGGAGA GAGGTTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG GCCAGAGGCA GCTAAGGGGC AGGAATCAAG GAGCCTCCGT TCCCACCTCT GAGGACTCTG GACCCCAGGC CATACCAGGT GCTAGGGTGC CTGCTCTCCT TGCCCTGGGC CAGCCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA TTTCTGATGA TTTGCTGGAG TGCTGGCTCC ACGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA CGAGGTGGTA GCTCTGAGCC CTCCTTCTTG CCCTGAGCTT TCCGGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG CCACCAGCTC CACTGGCCCC CGTTGCCGGG CCTGGACTGT CCTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC TCAGTGTTGA CTGTAGGCGC CCCTGGGGTG GGTTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCCC TGAGAGCATG TGGGGGAAGG CCTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTTT GGAAGCTCTG TTGCAGGTGT CCGGGGGTCT AGGACTITAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC CCCTGTGTTG GGGGGCAAGG TGGGGGAGCC TGGAGCCCCT GTGTGGGAGG GCGAGGCGGG GGAGCCTGGA GCCCCTGTGT GGGAGGGCGA GGCGGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTCGGTTG ACCTTCTGAA CATGAGTGTC AACTCCAGGA CTTGCTTCCA AGCCCTTCCC TCTGTTGGAA ATTGGGTGTG CCCTGGCTCC CAAGGGAGGC CCATGTGACT AATAAAAAAC TGTGAACCCT CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTTGAAGAG AGACAAAGGA GTCGAGTCCC AGCCAGCTAC CATCCCTCTG GAGCTTACCG GCCGGCCTTG GCTTCCCCAG GAATCCCTGG AGCTAGCGGC
TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTTG GTGACCTTGG
GTGCTTGCCT CGTGCCCCTT GGTGCCCGTC TGCTGATGTG CCCAGCCTGT GCCCGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT GCTGGTGATC TGGGCGGTGA AGGTGAACCA GGCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTCGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCCTG GTCATCCCCC TCGCCATCCT CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCCT GTCCGGTCCT CATCCTCACC CAGAGCTCCA TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC CCTCTCCGGT ACAAGATGGT GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CCTTCGTGGT GGGACTGACC CCTATGTTTG GCTGGAACAA TCTGAGTGCG GTGGAGCGGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC CCGTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GTACATGGTC TACTTCAACT TCTTTGTGTG GGTGCTGCCC CCGCTTCTCC TCATGGTCCT CATCTACCTG GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG TGTCGGCCTC CTCCGGCGAC CCGCAGAAGT ACTATGGGAA GGAGCTGAAG ATCGCCAAGT CGCTGGCCCT CATCCTCTTC CTCTTTGCCC TCAGCTGGCT
GCCTTTGCAC ATCCTCAACT GCATCACCCT CTTCTGCCCG TCCTGCCACA AGCCCAGCAT CCTTACCTAC ATTGCCATCT
TCCTCACGCA CGGCAACTCG GCCATGAACC CCATTGTCTA TGCCTTCCGC ATCCAGAAGT TCCGCGTCAC CTTCCTTAAG GAGCCTGCCC CAGCTGGGCT GTTGGCTGGG GGCATGGGGG AGGCTCTGAA GAGATACCCA CAGAGTGTGG TCCCTCCACT AGGAGTTAAC TACCCTACAC CTCTGGGCCC TGCAGGAGGC CTGGGAGGGC AAGGGTCCTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA GGGCTGGGCA GGTCCTGGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGGC TGGGAGAAGG TGCTTGGGCT TCTGCGGTGA GGCAGGGGAG TCTGCTTGTC TTAGATGTTG GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAG TTGAGGATGC ACTGGCCTGT TCTGTAGGAG AGACTGGCCA GA -3'(FRAG.NO:__)(SEQ.NO:3005) 5'-CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTTGAAGAG AGACAAAGGA AGGAAAATTT AAATCCTTAG ATTCAAGCAG AAGAATTCCA TGTGGAAGGT TTGGGTTGTT GTTGTTGTTG TTTGGTTGTT TTTTGTTTTT TGTTTTTTTT TGAGATGGAG TCTCGCTGTG TTACCGGGAG CGACAGAGCC GCACGGCCGA GTCGAGTCCC AGCCAGCTAC CATCCCTCTG GAGCTTACCG GCCGGCCTTG GCTTCCCCAG GAATCCCTGG AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTTG GTGACCTTGG GTGCTTGCCT CGTGCCCCTT GGTGCCCGTC TGCTGATGTG CCCAGCCTGT GCCCGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT GCTGGTGATC TGGGCGGTGA AGGTGAACCA GGCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTCGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCCTG GTCATCCCCC TCGCCATCCT

CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCCT GTCCGGTCCT CATCCTCACC CAGAGCTCCA TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC CCTCTCCGGT ACAAGATGGT GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CCTTCGTGGT GGGACTGACC CCTATGTTTG GCTGGAACAA TCTGAGTGCG GTGGCCAT AGCCGCTGC TGGATCUTCT CCTTCGTGGT GGGACTGACC CCTATGTTTG GCTGGAACAA
TCTGAGTGCG GTGGAGCGGG CCTGGGCAGC CACCGCAGC ATGGGGGAGC CCGTGATCAA GTGCGAGTTC GAGAAGGTCA
TCAGCATGGA GTACATGGTC TACTTCAACT TCTTTGTGTG GGTGCTGCCC CCGCTTCTCC TCATGGTCCT CATCTACCTG
GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG TGTCGGCCTC CTCCCGGCGAC CCGCAGAAGT ACTATGGGAA
GGAGCTGAAG ATCGCCAAGT CGCTGGCCCT CATCCTCTTC CTCTTTGCCC TCAGCTGGCT GCCTTTGCAC ATCCTCAACT
GCATCACCCT CTTCTGCCCG TCCTGCCACA AGCCCAGCAT CCTTACCTAC ATTGCCATCT TCCTCACGCA CGGCAACTCG
GCCATGAACC CCATTGTCTA TGCCTTCCGC ATCCAGAAGT TCCGCGTCAC CTTCCTTAAG ATTTGGAATG ACCATTTCCG GTTGGCTGGG GGCATGGGGG AGGCTCTGAA GAGATACCCA CAGAGTGTGG TCCCTCCACT AGGAGTTAAC TACCCTACAC CTCTGGGCCC TGCAGGAGGC CTGGGAGGGC AAGGGTCCTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA GGGCTGGGCA GGTCCTGGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGGC TGGGAGAAGG TGCTTGGGCT TCTGCGGTGA GGCAGGGGAG TCTGCTTGTC TTAGATGTTG GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGGG TTGAGGATGC ACTGGCCTGT TCTGTAGGAG AGACTGGCCA GA -3' (FRAG. NO:)(SEQ ID NO:11803) 5'- ATGAGTGTCA GAAGTGTGAA GGGTGCCTGT TCTGAATCCC AGAGCCTCCT CTCCCTCTGT GAGGCTGGCA GGTGAGGAAG GGTTTAACCT CACTGGAAGG AATCCCTGGA GCTAGCGGCT GCTGAAGGCG TCGAGGTGTG GGGGCACTTG GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGGG CCGGGCTGGG AGCGCTGCGG CGGGAGCCGG AGGACTATGA GCTGCCGCGC GTTGTCCAGA GCCCAGCCCA GCCCTACGCG CGCGGCCCGG AGCTCTGTTC CCTGGAACTT TGGGCACTGC CTCTGGGACC CCTGCCGGCC AGCAGGCAGG ATGGTGCTTG CCTCGTGCCC CTTGGTGCCC GTCTGCTGAT GTGCCCAGCC TGTGCCCGCC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTGTCG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTICITITGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG
CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC
CCTCATCCTC TTCCTCTTTG CCCTCAGCTG GCTGCCTTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC
ACAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA GACCCGCCT TCCGCTCCCA CCAGCCCACA TCCAGTGGGG TCTCAGTCCA GTCCTCACAT GCCCGCTGTC CCAGGGGTCT CCCTGAGCCT GCCCCAGCTG GGCTGTTGGC TGGGGGGCATG GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GCCCTGCAGG AGGCCTGGGA GGGCAAGGGT CCTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTTCTG AGCCCCCACC TGCCTGACCA TCCCATGAGC AGCATCTGCT CTGAGACGGA TGGAAGGAGA GAGGTTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG GCCAGAGGCA GCTAAGGGGC AGGAATCAAG GAGCCTCCGT TCCCACCTCT GAGGACTCTG GACCCCAGGC CATACCAGGT GCTAGGGTGC CTGCTCTCCT TGCCCTGGGC CAGCCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA TTTCTGATGA
TTTGCTGGAG TGCTGGCTC ACGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA CGAGGTGGTA
GCTCTGAGCC CTCCTTCTTG CCCTGAGCTT TCCGGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG CCACCAGCTC CACTGGCCCC CGTTGCCGGG CCTGGACTGT CCTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC TCAGTGTTGA CTGTAGGCGC CCCTGGGGTG GGTTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCCC TGAGAGCATG TGGGGGAAGG CCTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTTT GGAAGCTCTG TTGCAGGTGT CCGGGGGTCT AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC CCCTGTGTTG GGGGCAAGG TGGGGAGCC TGGAGCCCCT GTGTGGAAGG GCGAGGCGGG GGAGCCTGGA GCCCCTGTGT GGGAGGCCGA GGCGGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTCGGTTG ACCTTCTGAA CATGAGTGTC AACTCCAGGA CTTGCTTCCA AGCCCTTCCC TCTGTTGGAA ATTGGGTGTG CCCTGGCTCC CAAGGGAGGC CCATGTGACT AATAAAAAC TGTGAACCCT -3' (FRAG. NO:)(SEQ ID NO:11802) 5'- ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA COTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTCTCG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCCTC TICCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC ACAAGCCCAG
CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA AGTICCGCGT CACCITCCTT AAGATTIGGA ATGACCATIT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA G-3' (FRAG. NO:__)(SEQ ID NO:11801) 5'CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTTGAAGAG AGACAAAGGA AGGAAAATTT AAATCCTTAG ATTCAAGCAG AAGAATTCCA TGTGGAAGGT TTGGGTTGTT GTTGTTGTT TTTGGTTTTT TTTGTTTTT TGTTTTTTT TGAGATGGAG TCTCGCTGTG TTACCGGGAG CGACAGAGCC GCACGGCCGA GTCGAGTCCC AGCCAGCTAC CATCCTCTG GAGCTTACCG GCCGGCCTTG GCTTCCCCAG GAATCCCTGG AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTTG GTGACCTTGG GTGCTTGCCT CGTGCCCCTT GGTGCCCGTC TGCTGATGTG CCCAGCCTGT GCCCGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT GCTGGTGATC TGGGCGGTGA AGGTGAACCA GGCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTCGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCCTG GTCATCCCCC TCGCCATCCT

```
CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCCT GTCCGGTCCT CATCCTCACC CAGAGCTCCA
TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC CCTCTCCGGT ACAAGATGGT GGTGACCCCC
CGGAGGGCG CGGTGGCATT GCTGGACC CGTACCTCC GGTCAAGATC CCTCCCGGT ACAAGATGGT GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTC CCTTCGTGGT GGGACTGACC CCTATGTTTG GCTGGAACAA TCTGAGTGCG GTGGAGCGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC CCGTTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GTACATGGTC TACTTCAACT TCTTTGTGTG GGTGCTGCCC CCGCTTCTCC TCATGGTCCT CATCTACCTG
CTCTGGGCCC TGCAGGAGGC CTGGGAGGGC AAGGGTCCTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT GTTCTGAGCC
CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA GGGCTGGGCA GGTCCTGGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGC TGGGAGAAGG TGCTTGGGCT TCTGCGGTGA GGCAGGGGAG TCTGCTTGTC TTAGATGTTG GTGGTGCAGC
CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAGG TTGAGGATGC ACTGGCCTGT
 TCTGTAGGAG AGACTGGCCA GA -3'
(FRAG. NO:__)(SEQ ID NO:11791)
5'-ATGAGTOTCA GAAGTGTGAA GGGTGCCTGT TCTGAATCCC AGAGCCTCCT CTCCCTCTGT GAGGCTGGCA GGTGAGGAAG
GGTTTAACCT CACTGGAAGG AATCCCTGGA GCTAGCGGCT GCTGAAGGCG TCGAGGTGTG GGGGCACTTG GACAGAACAG
TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGGG CCGGGCTGGG AGCGCTGCGG CGGGAGCCGG AGGACTATGA
GCTGCGCGC GTTGTCCAGA GCCCAGCCCA GCCCTACGCG CGCGCCCGG AGCTCTGTTC CCTGGAACTT TGGGCACTGC
CTCTGGGACC CCTGCCGGCC AGCAGGCAGG ATGGTGCTTG CCTCGTGCCC CTTGGTGCCC GTCTGCTGAT GTGCCCAGCC
TGTGCCCGCC ATGCCGCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG
TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTGTCG CTGGCGGTGG CTGATGTGG CGTGGGTGCC CTGGTCATCA CCCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC
AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC
CCTCATCCTC TTCCTCTTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTCCC ACAAGCCCAG AGTTCCGCCA TCTCTCTCC CGCATCCAGA AGTTCCGCGT CACATCCTCA ACGCCAGCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA GACCCCGCCT TCCGCTCCCA CCAGCCCACA TCCAGTGGGG TCTCAGTCCA
GTCCTCACAT GCCCGCTGTC CCAGGGGTCT CCCTGAGCCT GCCCCAGCTG GGCTGTTGGC TGGGGGCATG GGGAGGCTC
TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GCCCTGCAGG AGGCCTGGGA
GGGCAAGGGT CCTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTTCTG AGCCCCCACC TGCCTGACCA TCCCATGAGC
AGTCCAGCGC TTCAGGGCTG GGCAGGTCCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT GGGCTGGGAG AAGGTGCTTG
 AGCATCIGCT CTGAGACGGA TGGAAGGAGA GAGGTTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG GCCAGAGGCA
GCTAAGGGGC AGGAATCAAG GAGCCTCCGT TCCCACCTCT GAGGACTCTG GACCCCAGGC CATACCAGGT GCTAGGGTGC CTGCTCTCCT TGCCCTGGGC CAGCCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA TTTCTGATGA
TTTGCTGGAG TGCTGGCTCC ACGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA CGAGGTGGTA
GCTCTGAGCC CTCCTTCTTG CCCTGAGCTT TCCGGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG CCACCAGCTC CACTGGCCCC CGTTGCCGGG CCTGGACTGT CCTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC TCAGTGTTGA
CTGTAGGCGC CCCTGGGGTG GGTTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCCC TGAGAGCATG TGGGGGAAGG
CCTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTTT GGAAGCTCTG TTGCAGGTGT
CCGGGGGTCT AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC CCCTGTGTTG
GGGGGCAAGG TGGGGGAGCC TGGAGCCCCT GTGTGGGAGG GCGAGGCGGG GGAGCCTGGA GCCCCTGTGT GGGAGGGCGA
GGCGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTCGGTTG ACCTTCTGAA CATGAGTGTC
AACTCCAGGA CTTGCTTCCA AGCCCTTCCC TCTGTTGGAA ATTGGGTGTG CCCTGGCTCC CAAGGGAGGC CCATGTGACT AATAAAAAAC TGTGAACCCT -3' (FRAG. NO:_) (SEQ ID NO:11790)
5'-ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTCTCG CTGGCGGTGG
CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC
CTCATGGTTG CCTGTCCGGT CCTCATCCTC ACCCAGAGCT CCATCCTGGC CCTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC
TCTCCTTCGT GGTGGGACTG CCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC
 AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT
GTGGGTGCTG CCCCCGCTTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCCTCCGGC GACCCGCAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCCTC
TTCCTCTTG CCCTCAGCTG GCTGCCTTTG CACATCCTCA ACTGCATCAC CCTCTTCTGC CCGTCCTGCC ACAAGCCCAG CATCCTTACC TACATTGCCA TCTTCCTCAC GCACGGCAAC TCGGCCATGA ACCCCATTGT CTATGCCTTC CGCATCCAGA
AGTTCCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA
GAAGAGAGGC CTGATGACTA G (FRAG NO: __) (SEQ ID NO:12483)
5'-GAT GGA GGG CGG CAT GGC GGG-3' (FRAG. NO: 1657) (SEQ ID NO:11781)
5'-G CGG GTC GCC GG-3' (FRAG. NO: 1658) (SEQ ID NO:11782)
5'-GGC GGG CBC BGG C-3' (FRAG. NO: 1659) (SEQ ID NO:11783)
5'-GGC GGG CBC-3' (FRAG. NO: 1660) (SEQ ID NO:11784)
5'-GC GGC CTG G-3' (FRAG. NO: 1661) (SEQ ID NO:11785)
5'-GGB GGG CGG C-3' (FRAG. NO: 1662) (SEQ ID NO:11786)
5'-GBT GGB GGG-3' (FRAG. NO: 1663) (SEQ ID NO:11787)
```

```
5'-GG CTG GGC-3' (FRAG. NO: 1664) (SEQ ID NO:11788)
        5-GC CTG GGC-3' (FRAG. NO: 1004) (SEQ ID NO:11766)
5-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG.1) (SEQ ID NO:9380)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG.2) (SEQ. .ID NO:12)
5-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG.3) (SEQ ID NO:9382)
        5'-GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 4)(SEQ ID NO:9383)
        5'-C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 5) (SEQ ID NO:9384)
        5'-CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 6) (SEQ ID NO:9385)
        5'-TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 7) (SEQ ID NO:9386)
        5'-G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 8) (SEQ ID NO:9387)
        5'-GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 9) (SEO ID NO:9388)
10
        5'-AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 10) (SEQ ID NO:9389)
       5-AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 10) (SEQ ID NO:9389)
5-A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 11) (SEQ ID NO:9390)
5-AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 12) (SEQ ID NO:9391)
5-GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 13) (SEQ ID NO:9392)
5-C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 14) (SEQ ID NO:9393)
5-TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 15) (SEQ ID NO:9394)
5-GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 15) (SEQ ID NO:9395)
15
        5'-A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 17) (SEQ ID NO:9396)
        5'-GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 18) (SEQ ID NO:9397)
20
        5-AT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 19) (SEQ ID NO:9398)
        5-T GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 20) (SEQ ID NO:9399)
        5'-GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 21) (SEQ ID NO:9400)
        5'-GA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 22) (SEQ ID NO:9401)
        5-A GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 23) (SEQ ID NO:9402)
        5'-GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 24) (SEQ ID NO:9403)
25
        5-GG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 25) (SEQ ID NO:9404)
5-G CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 25) (SEQ ID NO:9405)
5-GG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 26) (SEQ ID NO:9406)
5-GG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 27) (SEQ ID NO:9407)
5-G CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 28) (SEQ ID NO:9407)
5-G CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 29) (SEQ ID NO:9408)
30
        5'-CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 30) (SEQ ID NO:9409)
5'-AT GGC GGG CAC AGG CTG GGC-3' (FRAG 31) (SEQ ID NO:9410)
        5-T GGC GGG CAC AGG CTG GGC-3' (FRAG 32) (SEQ ID NO:9411)
        5'-GGC GGG CAC AGG CTG GGC-3' (FRAG 33) (SEQ ID NO:9412)
35
        5'-GC GGG CAC AGG CTG GGC-3' (FRAG 34) (SEQ ID NO:9413)
        5'-C GGG CAC AGG CTG GGC-3' (FRAG 35) (SEQ ID NO:9414)
        5'-GGG CAC AGG CTG GGC-3' (FRAG 36) (SEQ ID NO:9415)
        5'-GG CAC AGG CTG GGC-3' (FRAG 37) (SEQ ID NO:9416)
        5'-G CAC AGG CTG GGC-3' (FRAG 38) (SEQ ID NO:9417)
        5'-CAC AGG CTG GGC-3' (FRAG 39) (SEQ ID NO:9418)
        5'-AC AGG CTG GGC-3' (FRAG 40) (SEQ ID NO:9419)
        5'-C AGG CTG GGC-3' (FRAG 41) (SEQ ID NO:9420)
        5'-AGG CTG GGC-3' (FRAG 42) (SEQ ID NO:9421)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3'(FRAG 43)(SEQ ID NO:9422)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 44)(SEQ ID NO:9423)
        5-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 45)(SEQ ID NO:9424)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 46)(SEQ ID NO:9425)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 45)(SEQ ID NO:942:
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 47)(SEQ ID NO:9426)
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 48)(SEQ ID NO:9427)
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 49) (SEQ ID NO:9428)
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 59) (SEQ ID NO:9429)
50
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 51) (SEQ ID NO:9430)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 52) (SEQ ID NO:9431)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 53) (SEQ ID NO:9432)
55
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 54) (SEQ ID NO:9433)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 55) (SEQ ID NO:9434)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 56) (SEQ ID NO:9435)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3'(FRAG 57) (SEQ ID NO:9436)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 58) (SEQ ID NO:9437)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 59) (SEQ ID NO:9438)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 60) (SEQ ID NO:9439)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G-3' (FRAG 60) (SEQ ID NO:9440)
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT-3' (FRAG 61) (SEQ ID NO:9441)
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 63) (SEQ ID NO:9442)
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CG-3' (FRAG 63) (SEQ ID NO:9442)
5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CGG CG-3' (FRAG 63) (SEQ ID NO:9443)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 65) (SEQ ID NO:9444)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 66) (SEQ ID NO:9445)
         5'-GGC GGC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 67) (SEQ ID NO:9446)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 68) (SEQ ID NO:9447)
70
        5'-GGC GGC CTG GAA AGC TGA GAT GGA G -3' (FRAG 69) (SEQ ID NO:9448)
        5'-GGC GGC CTG GAA AGC TGA GAT GGA -3' (FRAG 70) (SEQ ID NO:9449)
        5'-GGC GGC CTG GAA AGC TGA GAT GG -3' (FRAG 71) (SEQ ID NO:9450)
        5'-GGC GGC CTG GAA AGC TGA GAT G -3' (FRAG 72) (SEQ ID NO:9451)
         5'-GGC GGC CTG GAA AGC TGA GAT -3' (FRAG 73) (SEQ ID NO:9452)
```

5'-GGC GGC CTG GAA AGC TGA GA-3' (FRAG 74) (SEQ ID NO:9453)

```
5'-GGC GGC CTG GAA AGC TGA G-3' (FRAG 75) (SEQ ID NO:9454)
         5'-GGC GGC CTG GAA AGC TGA-3' (FRAG 76) (SEQ ID NO:9455)
         5'-GGC GGC CTG GAA AGC TG-3' (FRAG 77) (SEQ ID NO:9456)
        5'-GGC GGC CTG GAA AGC T-3' (FRAG 78) (SEQ ID NO:9457)
5'-GGC GGC CTG GAA AGC-3' (FRAG 79) (SEQ ID NO:9458)
         5'-GGC GGC CTG GAA AG-3' (FRAG 80) (SEQ ID NO:9459)
        5'-GGC GGC CTG GAA A-3' (FRAG 81) (SEQ ID NO:9460)
         5'-GGC GGC CTG GAA-3' (FRAG 82) (SEQ ID NO:9461)
        5'-GGC GGC CTG GA-3' (FRAG 83) (SEQ ID NO:9462)
        5'-GGC GGC CTG G-3' (FRAG 84) (SEQ ID NO:9463)
         5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 85) (SEQ ID NO:9464)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 86) (SEQ ID NO:9465)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 87) (SEQ ID NO:9466)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 88) (SEQ ID NO:9467)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 89) (SEO ID NO:9468)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 90) (SEQ ID NO:9469)
         5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 91) (SEQ ID NO:9470)
       5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG-3' (FRAG 91) (SEQ ID NO:947)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 92) (SEQ ID NO:9471)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 93) (SEQ ID NO:9472)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 94) (SEQ ID NO:9473)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 95) (SEQ ID NO:9474)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 96) (SEQ ID NO:9475)
         5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 97) (SEQ ID NO:9476)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 98) (SEQ ID NO:9477)
25
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 99) (SEQ ID NO:9478)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 100) (SEQ ID NO:9479)
         5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 101) (SEQ ID NO:9480)
         5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 102) (SEQ ID NO:9481)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 103) (SEQ ID NO:9482)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 104) (SEQ ID NO:9483)
         5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 105) (SEQ ID NO:9484)
        5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 106) (SEQ ID NO:9485)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 107) (SEQ ID NO:9486)
       5-GC GGC CTG GAA AGC TGA GAT GGA GGG CC-3' (FRAG 108) (SEQ ID NO:9487)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG C-3' (FRAG 108) (SEQ ID NO:9487)
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 109) (SEQ ID NO:9489)
5'-GC GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 111) (SEQ ID NO:9489)
5'-GC GGC CTG GAA AGC TGA GAT GGA G-3' (FRAG 111) (SEQ ID NO:9490)
5'-GC GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 112) (SEQ ID NO:9491)
        5'-GC GGC CTG GAA AGC TGA GAT GG -3' (FRAG 113) (SEQ ID NO:9492)
        5'-GC GGC CTG GAA AGC TGA GAT G -3' (FRAG 114) (SEQ ID NO:9493)
        5'-GC GGC CTG GAA AGC TGA GAT -3' (FRAG 115) (SEQ ID NO:9494)
5'-GC GGC CTG GAA AGC TGA GA-3' (FRAG 116) (SEQ ID NO:9495)
        5'-GC GGC CTG GAA AGC TGA G-3' (FRAG 117) (SEQ ID NO:9496)
        5'-GC GGC CTG GAA AGC TGA-3' (FRAG 118) (SEQ ID NO:9497)
        5'-GC GGC CTG GAA AGC TG-3' (FRAG 119) (SEQ ID NO:9498)
        5'-GC GGC CTG GAA AGC T-3' (FRAG 120) (SEQ ID NO:9499)
        5'-GC GGC CTG GAA AGC-3' (FRAG 121) (SEQ ID NO:9500)
        5'-GC GGC CTG GAA AG-3' (FRAG 122) (SEQ ID NO:9501)
        5'-GC GGC CTG GAA A-3' (FRAG 123) (SEO ID NO:9502)
        5'-GC GGC CTG GAA-3' (FRAG 124) (SEQ ID NO:9503)
5'-GC GGC CTG GA-3' (FRAG 125) (SEQ ID NO:9504)
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 126) (SEQ ID NO:9505)
       5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 126) (SEQ ID NO:9506)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 127) (SEQ ID NO:9506)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 128) (SEQ ID NO:9507)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG-3' (FRAG 129) (SEQ ID NO:9508)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 131) (SEQ ID NO:9509)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 131) (SEQ ID NO:9510)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 132) (SEQ ID NO:9511)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 133) (SEQ ID NO:9512)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 134) (SEQ ID NO:9513)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 135) (SEQ ID NO:9514)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 136) (SEQ ID NO:9515)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 137) (SEQ ID NO:9516)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 138) (SEQ ID NO:9517)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 139) (SEQ ID NO:9518)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 140) (SEO ID NO:9519)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 141) (SEQ ID NO:9520)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 142) (SEQ ID NO:9521)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRA 143) (SEQ ID NO:9522)
       5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 144) (SEQ ID NO:9523)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 144) (SEQ ID NO:9523)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 146) (SEQ ID NO:9524)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 147) (SEQ ID NO:9525)
5-C GGC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 147) (SEQ ID NO:9526)
        5'-C GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 148) (SEQ ID NO:9527)
     5'-C GGC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 148) (SEQ ID NO:9528)
```

```
5'-C GGC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 150) (SEQ ID NO:9529)
        5'-C GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 151) (SEQ ID NO:9530)
       5-C GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 151) (SEQ ID NO:9531)
5-C GGC CTG GAA AGC TGA GAT GGA -3' (FRAG 152) (SEQ ID NO:9532)
5-C GGC CTG GAA AGC TGA GAT GGA-3' (FRAG 153) (SEQ ID NO:9532)
5-C GGC CTG GAA AGC TGA GAT GG -3' (FRAG 154) (SEQ ID NO:9533)
5-C GGC CTG GAA AGC TGA GAT G-3' (FRAG 155) (SEQ ID NO:9534)
5-C GGC CTG GAA AGC TGA GAT-3' (FRAG 157) (SEQ ID NO:9535)
5-C GGC CTG GAA AGC TGA GAT-3' (FRAG 157) (SEQ ID NO:9536)
        5'-C GGC CTG GAA AGC TGA G-3' (FRAG 158) (SEQ ID NO:9537)
        5'-C GGC CTG GAA AGC TGA-3' (FRAG 159) (SEQ ID NO:9538)
        5'-C GGC CTG GAA AGC TG-3' (FRAG 160) (SEQ ID NO:9539)
        5'-C GGC CTG GAA AGC T-3' (FRAG 161) (SEQ ID NO:9540)
        5'-C GGC CTG GAA AGC-3' (FRAG 162) (SEQ ID NO:9541)
        5'-C GGC CTG GAA AG-3' (FRAG 163) (SEQ ID NO:9542)
        5'-C GGC CTG GAA A-3' (FRAG 164) (SEQ ID NO:9543)
        5'-C GGC CTG GAA-3' (FRAG 165) (SEQ ID NO:9544)
        5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 166) (SEQ ID NO:9545)
5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 167) (SEQ ID NO:9546)
       5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 167) (SEQ ID N0:9546)
5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 168) (SEQ ID N0:9547)
5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG-3' (FRAG 169) (SEQ ID N0:9548)
5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT3' (FRAG 170) (SEQ ID N0:9549)
5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 171) (SEQ ID N0:9550)
5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG-3' (FRAG 172) (SEQ ID N0:9551)
5- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG-3' (FRAG 173) (SEQ ID N0:9552)
20
        5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 174) (SEQ ID NO:9553)
25
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 175) (SEQ ID NO:9554)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 176) (SEQ ID NO:9555)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 177) (SEQ ID NO:9556)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 178) (SEQ ID NO:9557)
        5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 179) (SEQ ID NO:9558)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 180) (SEQ ID NO:9559)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 181) (SEQ ID NO:9560)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 182) (SEQ ID NO:9561)
        5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 183) (SEQ ID NO:9562)
        5°- GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 184) (SEQ ID NO:9563)
5°- GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 185) (SEQ ID NO:9564)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 186) (SEQ ID NO:9565)
        5'- GGC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 187) (SEQ ID NO:9566)
5'- GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 188) (SEQ ID NO:9567)
5'- GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 188) (SEQ ID NO:9567)
        5'- GGC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 189) (SEQ ID NO:9568)
         5'- GGC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 190) (SEQ ID NO:9569)
         5'- GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 191) (SEQ ID NO:9570)
         5'- GGC CTG GAA AGC TGA GAT GGA G -3' (FRAG 192) (SEQ ID NO:9571)
         5'- GGC CTG GAA AGC TGA GAT GGA -3' (FRAG 193) (SEQ ID NO:9572)
45
         5'- GGC CTG GAA AGC TGA GAT GG -3' (FRAG 194) (SEQ ID NO:9573)
         5'- GGC CTG GAA AGC TGA GAT G -3' (FRAG 195) (SEQ ID NO:9574)
         5'- GGC CTG GAA AGC TGA GAT -3' (FRAG 196) (SEQ ID NO:9575)
         5'- GGC CTG GAA AGC TGA GA-3' (FRAG 197) (SEQ ID NO:9576)
         5'- GGC CTG GAA AGC TGA G-3' (FRAG 198) (SEQ ID NO:9577)
        5'- GGC CTG GAA AGC TGA-3' (FRAG 199) (SEO ID NO:9578)
         5'- GGC CTG GAA AGC TG-3' (FRAG 200 (SEQ ID NO:9579)
         5'- GGC CTG GAA AGC T-3' (FRAG 201) (SEQ ID NO:9580)
         5'- GGC CTG GAA AGC-3' (FRAG 202) (SEQ ID NO:9581)
        5'- GGC CTG GAA AG-3' (FRAG 203) (SEQ ID NO:9582)
5'- GGC CTG GAA A-3' (FRAG 204) (SEQ ID NO:9583)
55
        5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 205) (SEQ ID NO:9584)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 206) (SEQ ID NO:9585)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 207) (SEQ ID NO:9586)
        5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 208) (SEQ ID NO:9587)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 209) (SEQ ID NO:9588)
60
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 210) (SEQ ID NO:9589)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 211) (SEQ ID NO:9590)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 212) (SEQ ID NO:9591)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 213) (SEQ ID NO:9592)
        5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 214) (SEQ ID NO:9593)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 215) (SEQ ID NO:9594)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 216) (SEQ ID NO:9595)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 217) (SEQ ID NO:9596)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 218) (SEQ ID NO:9597)
        5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 219) (SEQ ID NO:9598)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 219) (SEQ ID NO:9599)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG-3' (FRAG 221) (SEQ ID NO:9600)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT G-3' (FRAG 221) (SEQ ID NO:9601)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT G-3' (FRAG 222) (SEQ ID NO:9601)
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT G-3' (FRAG 223) (SEQ ID NO:9601)
         5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 224) (SEQ ID NO:9603)
75
```

```
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 225) (SEQ ID NO:9604)
        5'- GC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 226) (SEQ ID NO:9605)
       5'- GC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 227) (SEQ ID NO:9606)
        5'- GC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 228) (SEQ ID NO:9607)
       5'- GC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 229) (SEQ ID NO:9608)
        5'- GC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 230) (SEQ ID NO:9609)
        5'- GC CTG GAA AGC TGA GAT GGA G -3' (FRAG 231) (SEQ ID NO:9610)
        5'- GC CTG GAA AGC TGA GAT GGA -3' (FRAG 232) (SEQ ID NO:9611)
        5'- GC CTG GAA AGC TGA GAT GG -3' (FRAG 233) (SEQ ID NO:9612)
       5'- GC CTG GAA AGC TGA GAT G-3' (FRAG 234) (SEQ ID NO:9613)
5'- GC CTG GAA AGC TGA GAT -3' (FRAG 235) (SEQ ID NO:9614)
5'- GC CTG GAA AGC TGA GA-3' (FRAG 236) (SEQ ID NO:9615)
       5'- GC CTG GAA AGC TGA G-3' (FRAG 237) (SEQ ID NO:9616)
       5'- GC CTG GAA AGC TGA-3' (FRAG 238) (SEQ ID NO:9617)
       5'- GC CTG GAA AGC TG-3' (FRAG 239) (SEQ ID NO:9618)
       5'- GC CTG GAA AGC T-3' (FRAG 240) (SEQ ID NO:9619)
       5'- GC CTG GAA AGC-3' (FRAG 241) (SEQ ID NO:9620)
       5'- GC CTG GAA AG-3' (FRAG 242) (SEQ ID NO:9621)
       5'- C CTG GAA AGC TGA GAT GG À GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 243) (SEQ ID NO:9622)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 244) (SEQ ID NO:9623)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 245) (SEQ ID NO:9624)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 246) (SEQ ID NO:9625)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 247) (SEQ ID NO:9626)
       5'-C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 248) (SEQ ID NO:9627)
5'-C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 249) (SEQ ID NO:9628)
5'-C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 249) (SEQ ID NO:9628)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 250) (SEQ ID NO:9629)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 251) (SEQ ID NO:9630)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 252) (SEQ ID NO:9631)
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 253) (SEQ ID NO:9632)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 254) (SEQ ID NO:9633)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 255) (SEQ ID NO:9634)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 256) (SEQ ID NO:9635)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 257) (SEQ ID NO:9636)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 258) (SEQ ID NO:9637)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 259) (SEQ ID NO:9638)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 260) (SEQ ID NO:9639)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 261) (SEQ ID NO:9640)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 262) (SEQ ID NO:9641)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 263) (SEQ ID NO:9642)
       5'- C CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 264) (SEQ ID NO:9643)
       5'- C CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 265) (SEQ ID NO:9644)
       5'- C CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 266) (SEO ID NO:9645)
       5'- C CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 267) (SEQ ID NO:9646)
5'- C CTG GAA AGC TGA GAT GGA GG -3' (FRAG 268) (SEQ ID NO:9647)
       5'- C CTG GAA AGC TGA GAT GGA G -3' (FRAG 269) (SEQ ID NO:9648)
       5'- C CTG GAA AGC TGA GAT GUA G -3' (FRAG 270) (SEQ ID NO:9649)
5'- C CTG GAA AGC TGA GAT GGA -3' (FRAG 271) (SEQ ID NO:9650)
5'- C CTG GAA AGC TGA GAT G -3' (FRAG 272) (SEQ ID NO:9651)
5'- C CTG GAA AGC TGA GAT G -3' (FRAG 272) (SEQ ID NO:9651)
       5'- C CTG GAA AGC TGA GAT -3' (FRAG 273) (SEQ ID NO:9652)
5'- C CTG GAA AGC TGA GA-3' (FRAG 274) (SEQ ID NO:9653)
       5'-C CTG GAA AGC TGA G-3' (FRAG 275) (SEQ ID NO:9654)
5'-C CTG GAA AGC TGA-3' (FRAG 276) (SEQ ID NO:9655)
       5'- C CTG GAA AGC TG-3' (FRAG 277) (SEQ ID NO:9656)
       5'- C CTG GAA AGC T-3' (FRAG 278) (SEQ ID NO:9657)
55
       5'- C CTG GAA AGC-3' (FRAG 279) (SEQ ID NO:9658)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 280) (SEQ ID NO:9659)
       5'- CTG GAA AGC TGA OAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 281) (SEQ ID NO:9660)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 282) (SEQ ID NO:9661)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 283) (SEO ID NO:9662)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 284) (SEQ ID NO:9663)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 285) (SEQ ID NO:9664)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 286) (SEQ ID NO:9665)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG-3' (FRAG 287) (SEQ ID NO:9666)
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 287) (SEQ ID NO:9666)
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 288) (SEQ ID NO:9668)
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 290) (SEQ ID NO:9668)
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 291) (SEQ ID NO:9670)
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C3' (FRAG 291) (SEQ ID NO:9671)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 292) (SEQ ID NO:9671)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 293) (SEQ ID NO:9672)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 294) (SEQ ID NO:9673)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 295) (SEQ ID NO:9674)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 296) (SEQ ID NO:9675)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 297) (SEQ ID NO:9676)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 298) (SEQ ID NO:9677)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 299) (SEQ ID NO:9678)
```

```
5'- CTO GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 300) (SEO ID NO:9679)
       5'- CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 301) (SEQ ID NO:9680)
5'- CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 302) (SEQ ID NO:9681)
       5'- CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 303) (SEQ ID NO:9682)
       5'- CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 304) (SEQ ID NO:9683)
       5'- CTG GAA AGC TGA GAT GGA GG -3' (FRAG 305) (SEQ ID NO:9684)
       5'- CTG GAA AGC TGA GAT GGA G -3' (FRAG 306) (SEQ ID NO:9685)
       5'- CTG GAA AGC TGA GAT GGA -3' (FRAG 307) (SEQ ID NO:9686)
       5'- CTG GAA AGC TGA GAT GG -3' (FRAG 308) (SEQ ID NO:9687)
       5'- CTG GAA AGC TGA GAT G -3' (FRAG 309) (SEQ ID NO:9688)
       5'- CTG GAA AGC TGA GAT -3' (FRAG 310) (SEQ ID NO:9689)
       5'- CTG GAA AGC TGA GA-3' (FRAG 311) (SEQ ID NO:9690)
5'- CTG GAA AGC TGA G-3' (FRAG 312) (SEQ ID NO:9691)
       5'- CTG GAA AGC TGA-3' (FRAG 313) (SEQ ID NO:9692)
       5'- CTG GAA AGC TG-3' (FRAG 314) (SEQ ID NO:9693)
       5'- CTG GAA AGC T-3' (FRAG 315) (SEQ ID NO:9694)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 316) (SEQ ID NO:9695)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 317) (SEQ ID NO:9696)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 318) (SEQ ID NO:9697)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 319) (SEQ ID NO:9698)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 320) (SEQ ID NO:9699)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 321) (SEQ ID NO:9700)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 322) (SEQ ID NO:9701)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 323) (SEQ ID NO:9702)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 324) (SEQ ID NO:9703)
      5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 324) (SEQ ID NO:970:
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 325) (SEQ ID NO:9704)
5'- TG GAA AGC TGA GAT GGA GGC CGG CAT GGC GGC CA-3' (FRAG 325) (SEQ ID NO:9705)
5'- TG GAA AGC TGA GAT GGA GGC CGG CAT GGC GGG C-3' (FRAG 327) (SEQ ID NO:9705)
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 328) (SEQ ID NO:9707)
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 329) (SEQ ID NO:9708)
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 330) (SEQ ID NO:9709)
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 331) (SEQ ID NO:9710)
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 331) (SEQ ID NO:9711)
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GG-3' (FRAG 331) (SEQ ID NO:9711)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 333) (SEQ ID NO:9712)
35
       5'- TG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 334) (SEQ ID NO:9713)
       5'- TG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 335) (SEQ ID NO:9714)
       5'- TG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 336) (SEQ ID NO:9715)
       5'- TG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 337) (SEQ ID NO:9716)
       5'- TG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 338) (SEQ ID NO:9717)
       5'- TG GAA AGC TGA GAT GGA GGG C -3' (FRAG 339) (SEQ ID NO:9718)
       5'- TG GAA AGC TGA GAT GGA GGG -3' (FRAG 340) (SEQ ID NO:9719)
       5'- TG GAA AGC TGA GAT GGA GG -3' (FRAG 341) (SEQ ID NO:9720)
       5'- TG GAA AGC TGA GAT GGA G -3' (FRAG 342) (SEQ ID NO:9721)
       5'- TG GAA AGC TGA GAT GGA -3' (FRAG 343) (SEQ ID NO:9722)
       5- TG GAA AGC TGA GAT GG -3' (FRAG 344) (SEQ ID NO:9723)
5'- TG GAA AGC TGA GAT G -3' (FRAG 345) (SEQ ID NO:9724)
45
       5'- TG GAA AGC TGA GAT -3' (FRAG 346) (SEQ ID NO:9725)
       5'- TG GAA AGC TGA GA-3' (FRAG 347) (SEQ ID NO:9726)
       5'- TG GAA AGC TGA G-3' (FRAG 348) (SEQ ID NO:9727)
       5'- TG GAA AGC TGA-3' (FRAG 349) (SEQ ID NO:9728)
       5'- TG GAA AGC TG-3' (FRAG 350) (SEQ ID NO:9729)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 351) (SEQ ID NO:9730)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 352) (SEQ JD NO:9731)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 353) (SEQ ID NO:9732)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 354) (SEQ ID NO:9733)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 355) (SEQ ID NO:9734)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 356) (SEQ ID NO:9735)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 357) (SEQ ID NO:9736)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 358) (SEQ ID NO:9737)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 359) (SEQ ID NO:9738)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 360) (SEQ ID NO:9739)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 361) (SEQ ID NO:9740)
      5- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 361) (SEQ ID NO:9740)
5- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 362) (SEQ ID NO:9741)
5- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 364) (SEQ ID NO:9742)
5- G GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 364) (SEQ ID NO:9743)
5- G GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 365) (SEQ ID NO:9744)
5- G GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 365) (SEQ ID NO:9745)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 367) (SEQ ID NO:9746)
       5'- G GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 368) (SEQ ID NO:9747)
      5'- G GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 369) (SEQ ID NO:9748)
       5'- G GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 370) (SEQ ID NO:9749)
       5'- G GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 371) (SEQ ID NO:9750)
       5'- G GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 372) (SEQ ID NO:9751)
       5'- G GAA AGC TGA GAT GGA GGG CG -3' (FRAG 373) (SEQ ID NO:9752)
      5'- G GAA AGC TGA GAT GGA GGG C -3' (FRAG 374) (SEQ ID NO:9753)
```

```
5'- G GAA AGC TGA GAT GGA GGG -3' (FRAG 375) (SEQ ID NO:9754)
        5'- G GAA AGC TGA GAT GGA GG -3' (FRAG 376) (SEQ ID NO:9755)
        5'- G GAA AGC TGA GAT GGA G -3' (FRAG 377) (SEQ ID NO:9756)
5'- G GAA AGC TGA GAT GGA G -3' (FRAG 378) (SEQ ID NO:9757)
5'- G GAA AGC TGA GAT GG -3' (FRAG 379) (SEQ ID NO:9758)
5'- G GAA AGC TGA GAT G -3' (FRAG 389) (SEQ ID NO:9759)
        5'- G GAA AGC TGA GAT -3' (FRAG 381) (SEQ ID NO:9760)
        5'- G GAA AGC TGA GA-3' (FRAG 382) (SEQ ID NO:9761)
        5'- G GAA AGC TGA G-3' (FRAG 383) (SEQ ID NO:9762)
        5'- G GAA AGC TGA-3' (FRAG.384) (SEQ ID NO:9763)
            GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 385) (SEQ ID NO:9764)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 386) (SEQ ID NO:9765)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 387) (SEQ ID NO:9766)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 388) (SEQ ID NO:9767)
15
            GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 389) (SEQ ID NO:9768)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 390) (SEQ ID NO:9769)
        5- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -5 (FRAG 391) (SEQ ID NO:9770)
5- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3 (FRAG 391) (SEQ ID NO:9771)
5- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3 (FRAG 392) (SEQ ID NO:9771)
5- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3 (FRAG 394) (SEQ ID NO:9772)
5- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3 (FRAG 394) (SEQ ID NO:9773)
20
            GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 395) (SEQ ID NO:9774)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 396) (SEQ ID NO:9775)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 397) (SEQ ID NO:9776)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 398) (SEQ ID NO:9777)
25
             GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 399) (SEQ ID NO:9778)
             GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 400) (SEQ ID NO:9779)
             GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 401) (SEQ ID NO:9780)
             GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 402) (SEQ ID NO:9781)
             GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 403) (SEQ ID NO:9782)
            GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 404) (SEQ ID NO:9783)
30
            GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 405) (SEQ ID NO:9784)
        5'- GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 406) (SEQ ID NO:9785)
            GAA AGC TGA GAT GGA GGG CG -3' (FRAG 407) (SEQ ID NO:9786)
        5'- GAA AGC TGA GAT GGA GGG C-3' (FRAG 407) (5EQ ID NO:9787)
5'- GAA AGC TGA GAT GGA GGG C-3' (FRAG 409) (SEQ ID NO:9787)
5'- GAA AGC TGA GAT GGA GGG -3' (FRAG 409) (SEQ ID NO:9789)
5'- GAA AGC TGA GAT GGA GG -3' (FRAG 410) (SEQ ID NO:9789)
5'- GAA AGC TGA GAT GGA G-3' (FRAG 411) (SEQ ID NO:9790)
5'- GAA AGC TGA GAT GGA -3' (FRAG 412) (SEQ ID NO:9791)
35
        5'- GAA AGC TGA GAT GG -3' (FRAG 413) (SEQ ID NO:9792)
40
        5'- GAA AGC TGA GAT G -3' (FRAG 414) (SEQ ID NO:9793)
            GAA AGC TGA GAT -3' (FRAG 415) (SEQ ID NO:9794)
             GAA AGC TGA GA-3' (FRAG 416) (SEQ ID NO:9795)
             GAA AGC TGA G-3' (FRAG 417) (SEQ ID NO:9796)
             AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 418) (SEQ ID NO:9797)
45
        5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 419) (SEQ ID NO:9798)
             AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 420) (SEQ ID NO:9799)
             AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 421) (SEQ ID NO:9800)
             AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-31 (FRAG 422) (SEQ ID NO:9801)
             AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 423) (SEQ ID NO:9802)
50
        5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3'(FRAG 424) (SEQ ID NO:9803)
            AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 425) (SEQ ID NO:9804)
             AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 426) (SEQ ID NO:9805)
            AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 427) (SEQ ID NO:9806)
             AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 428) (SEQ ID NO:9807)
        5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 428) (SEQ ID NO:9808)
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 429) (SEQ ID NO:9808)
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 430) (SEQ ID NO:9809)
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 431) (SEQ ID NO:9810)
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 432) (SEQ ID NO:9811)
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 433) (SEQ ID NO:9812)
5'- AA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 434) (SEQ ID NO:9813)
55
60
        5'- AA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 435) (SEQ ID NO:9814)
             AA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 436) (SEQ ID NO:9815)
             AA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 437) (SEQ ID NO:9816)
             AA AGC TGA GAT GGA GGG CGG C-3' (FRAG 438) (SEQ ID NO:9817)
65
            AA AGC TGA GAT GGA GGG CGG -3' (FRAG 439) (SEQ ID NO:9818)
            AA AGC TGA GAT GGA GGG CG -3' (FRAG 440) (SEQ ID NO:9819)
             AA AGC TGA GAT GGA GGG C -3' (FRAG 441) (SEQ ID NO:9820)
       5- AA AGC TGA GAT GGA GGG C-3' (FRAG 441) (SEQ ID NO:9820)
5- AA AGC TGA GAT GGA GGG C-3' (FRAG 442) (SEQ ID NO:9821)
5- AA AGC TGA GAT GGA GG -3' (FRAG 443) (SEQ ID NO:9822)
5- AA AGC TGA GAT GGA G-3' (FRAG 444) (SEQ ID NO:9823)
5- AA AGC TGA GAT GGA -3' (FRAG 445) (SEQ ID NO:9824)
5- AA AGC TGA GAT GG -3' (FRAG 446) (SEQ ID NO:9825)
5- AA AGC TGA GAT G-3' (FRAG 447) (SEQ ID NO:9826)
5- AA AGC TGA GAT 3' (FRAG 447) (SEQ ID NO:9826)
        5'- AA AGC TGA GAT -3' (FRAG 448) (SEQ ID NO:9827)
75
        5'- AA AGC TGA GA-3' (FRAG 449) (SEQ ID NO:9828)
```

```
5'- A AGC TGA GAT GGA GGG CG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 450) (SEQ ID NO:9829)
        5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 451) (SEQ ID NO:9830)
        5- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 451) (SEQ ID NO:9831)
5- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 452) (SEQ ID NO:9832)
5- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 453) (SEQ ID NO:9833)
5- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 455) (SEQ ID NO:9834)
1- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 450) (SEQ ID NO:9834)
         5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 456) (SEQ ID NO:9835)
         5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 457) (SEQ ID NO:9836)
         5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 458) (SEQ ID NO:9837)
        5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 459) (SEQ ID NO:9838)
         5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 460) (SEQ ID NO:9839)
         5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 461) (SEQ ID NO:9840)
        5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 462) (SEQ ID NO:9841)
         5'- A AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 463) (SEQ ID NO:9842)
        5'- A AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 464) (SEQ ID NO:9843)
        5- A AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 464) (SEQ ID NO:9844)
5- A AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 465) (SEQ ID NO:9845)
5- A AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 466) (SEQ ID NO:9846)
5- A AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 467) (SEQ ID NO:9847)
5- A AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 468) (SEQ ID NO:9847)
5- A AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 469) (SEQ ID NO:9848)
20
         5'- A AGC TGA GAT GGA GGG CGG C-3' (FRAG 470) (SEQ ID NO:9849)
             "A AGC TGA GAT GGA GGG CGG -3' (FRAG 471) (SEQ ID NO:9850)
        5'- A AGC TGA GAT GGA GGG CG -3' (FRAG 472) (SEQ ID NO:9851)
             A AGC TGA GAT GGA GGG C -3' (FRAG 473) (SEQ ID NO:9852)
        5'- A AGC TGA GAT GGA GGG -3' (FRAG 474) (SEQ ID NO:9853)
         5'- A AGC TGA GAT GGA GG -3' (FRAG 475) (SEQ ID NO:9854)
             A AGC TGA GAT GGA G -3' (FRAG 476) (SEQ ID NO:9855)
             A AGC TGA GAT GGA -3' (FRAG 477) (SEQ ID NO:9856)
             A AGC TGA GAT GG -3' (FRAG 478) (SEQ ID NO:9857)
30
        5'- A AGC TGA GAT G -3' (FRAG 479) (SEQ ID NO:9858)
             A AGC TGA GAT -3' (FRAG 480) (SEQ ID NO:9859)
             AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 481) (SEQ ID NO:9860)
             AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 481) (SEQ ID NO:9860)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 482) (SEQ ID NO:9861)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 483) (SEQ ID NO:9862)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 484) (SEQ ID NO:9863)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 485) (SEQ ID NO:9864)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 486) (SEQ ID NO:9865)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 487) (SEQ ID NO:9866)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 488) (SEQ ID NO:9867)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 489) (SEQ ID NO:9868)
AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 489) (SEQ ID NO:9868)
35
40
              AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 490) (SEQ ID NO:9869)
              AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 491) (SEQ ID NO:9870)
              AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 492) (SEQ ID NO:9871)
              AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 493) (SEQ ID NO:9872)
45
              AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 494) (SEQ ID NO:9873)
              AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 495) (SEQ ID NO:9874)
              AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 496) (SEQ ID NO:9875)
              AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 497) (SEQ ID NO:9876)
              AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 498) (SEQ ID NO:9877)
50
              AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 499) (SEO ID NO:9878)
              AGC TGA GAT GGA GGG CGG CA-3' (FRAG 500) (SEQ ID NO:9879)
              AGC TGA GAT GGA GGG CGG C-3' (FRAG 501) (SEQ ID NO:9880)
AGC TGA GAT GGA GGG CGG -3' (FRAG 502) (SEQ ID NO:9881)
             AGC TGA GAT GGA GGG CG -3' (FRAG 503) (SEQ ID NO:9882)
AGC TGA GAT GGA GGG C -3' (FRAG 504) (SEQ ID NO:9883)
55
             AGC TGA GAT GGA GGG -3' (FRAG 505) (SEQ ID NO:9884)
AGC TGA GAT GGA GGG -3' (FRAG 505) (SEQ ID NO:9884)
AGC TGA GAT GGA GG -3' (FRAG 506) (SEQ ID NO:9886)
AGC TGA GAT GGA -3' (FRAG 508) (SEQ ID NO:9887)
AGC TGA GAT GGA -3' (FRAG 508) (SEQ ID NO:9887)
60
              AGC TGA GAT GG -3' (FRAG 509) (SEQ ID NO:9888)
              AGC TGA GAT G -3' (FRAG 510) (SEQ ID NO:9889)
              GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 511) (SEQ ID NO:9890)
              GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 512) (SEQ ID NO:9891)
              GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 513) (SEQ ID NO:9892)
65
              GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 514) (SEQ ID NO:9893)
              GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 515) (SEQ ID NO:9894)
              GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 516) (SEQ ID NO:9895)
GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 517) (SEQ ID NO:9896)
             GC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 523) (SEQ ID NO:9902)
75
             GC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 524) (SEQ ID NO:9903)
```

```
GC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 525) (SEO ID NO:9904)
                    GC TGA GAT GGA GGG CGG CAT GGC C-3' (FRAG 526) (SEQ ID NO:9905)
GC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 527) (SEQ ID NO:9905)
GC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 528) (SEQ ID NO:9907)
GC TGA GAT GGA GGG CGG CAT -3' (FRAG 529) (SEQ ID NO:9908)
GC TGA GAT GGA GGG CGG CAT -3' (FRAG 530) (SEQ ID NO:9909)
GC TGA GAT GGA GGG CGG CAT -6 (STA) (SEQ ID NO:9909)
                      GC TGA GAT GGA GGG CGG C-3' (FRAG 531) (SEQ ID NO:9910)
                     GC TGA GAT GGA GGG CGG -3' (FRAG 532) (SEQ ID NO:9911)
                     GC TGA GAT GGA GGG CG -3' (FRAG 533) (SEQ ID NO:9912)
10
                     GC TGA GAT GGA GGG C -3' (FRAG 534) (SEQ ID NO:9913)
                      GC TGA GAT GGA GGG -3' (FRAG 535) (SEQ ID NO:9914)
                     GC TGA GAT GGA GG -3' (FRAG 536) (SEQ ID NO:9915)
GC TGA GAT GGA G -3' (FRAG 537) (SEQ ID NO:9916)
                    GC TGA GAT GGA -3' (FRAG 538) (SEQ ID NO:9917)
GC TGA GAT GG -3' (FRAG 539) (SEQ ID NO:9918)
15
                    C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 540) (SEQ ID NO:9919)
C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 541) (SEQ ID NO:9920)
C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 542) (SEQ ID NO:9921)
C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 543) (SEQ ID NO:9922)
C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 544) (SEQ ID NO:9922)
C TGA GAT GGA CGC CGC CAT GGC GGG CAC AGG CT-3' (FRAG 544) (SEQ ID NO:9923)
20
                     C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 545) (SEQ ID NO:9924)
C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 546) (SEQ ID NO:9925)
                     C TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 547) (SEQ ID NO:9926)
                     C TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 548) (SEQ ID NO:9927)
25
                     C TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 549) (SEQ ID NO:9928)
                     C TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 550) (SEQ ID NO:9929)
                     C TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 551) (SEQ ID NO:9930)
                     C TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 552) (SEQ ID NO:9931)
                     C TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 553) (SEQ ID NO:9932)
                    C TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 553) (SEQ ID NO:9932)
C TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 554) (SEQ ID NO:9933)
C TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 555) (SEQ ID NO:9934)
C TGA GAT GGA GGG CGG CAT GG -3' (FRAG 555) (SEQ ID NO:9935)
C TGA GAT GGA GGG CGG CAT G -3' (FRAG 557) (SEQ ID NO:9936)
C TGA GAT GGA GGG CGG CAT -3' (FRAG 558) (SEQ ID NO:9937)
C TGA GAT GGA GGG CGG CA-3' (FRAG 559) (SEQ ID NO:9938)
C TGA GAT GGA GGG CGG -3' (FRAG 560) (SEQ ID NO:9939)
C TGA GAT GGA GGG CGG -3' (FRAG 561) (SEQ ID NO:9940)
C TGA GAT GGA GGG CGG -3' (FRAG 562) (SEQ ID NO:9941)
35
                    C TGA GAT GGA GGG CG -3' (FRAG 562) (SEQ ID NO:9941)
C TGA GAT GGA GGG C -3' (FRAG 563) (SEQ ID NO:9942)
40
                     C TGA GAT GGA GGG -3' (FRAG 564) (SEQ ID NO:9943)
                     C TGA GAT GGA GG -3' (FRAG 565) (SEQ ID NO:9944)
                     CTGA GAT GGA G -3' (FRAG 566) (SEQ ID NO:9945)
                     C TGA GAT GGA -3' (FRAG 567) (SEQ ID NO:9946)
                      TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 568) (SEQ ID NO:9947) TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 569) (SEQ ID NO:9948)
45
                      TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 570) (SEQ ID NO:9949)
                     TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 571) (SEQ ID NO:9955)
TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 572) (SEQ ID NO:9951)
TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 573) (SEQ ID NO:9951)
TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 573) (SEQ ID NO:9953)
TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 575) (SEQ ID NO:9953)
TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 576) (SEQ ID NO:9955)
TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 577) (SEQ ID NO:9955)
TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 578) (SEQ ID NO:9957)
TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 579) (SEQ ID NO:9958)
TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 579) (SEQ ID NO:9958)
TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 581) (SEQ ID NO:9959)
TGA GAT GGA GGG CGG CAT GGC GGG-3' (FRAG 581) (SEQ ID NO:9960)
TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 581) (SEQ ID NO:9960)
TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 583) (SEQ ID NO:9960)
                      TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 571) (SEQ ID NO:9950)
50
55
                      TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 583) (SEQ ID NO:9962)
60
                      TGA GAT GGA GGG CGG CAT GG -3' (FRAG 584) (SEQ ID NO:9963)
                      TGA GAT GGA GGG CGG CAT G -3' (FRAG 585) (SEQ ID NO:9964)
                      TGA GAT GGA GGG CGG CAT -3' (FRAG 586) (SEQ ID NO:9965)
                      TGA GAT GGA GGG CGG CA-3' (FRAG 587) (SEQ ID NO:9966)
                      TGA GAT GGA GGG CGG C-3' (FRAG 588) (SEQ ID NO:9967)
65
                      TGA GAT GGA GGG CGG -3' (FRAG 589) (SEQ ID NO:9968)
                     TGA GAT GGA GGG CGG -3' (FRAG 589) (SEQ ID NO:9968)

TGA GAT GGA GGG CG -3' (FRAG 590) (SEQ ID NO:9969)

TGA GAT GGA GGG C-3' (FRAG 591) (SEQ ID NO:9970)

TGA GAT GGA GGG -3' (FRAG 592) (SEQ ID NO:9971)

TGA GAT GGA GGG -3' (FRAG 593) (SEQ ID NO:9972)

TGA GAT GGA GG -3' (FRAG 594) (SEQ ID NO:9973)

GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 595) (SEQ ID NO:9974)

GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 596) (SEQ ID NO:9975)

GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG, G-3' (FRAG 597) (SEQ ID NO:9976)
70
                      GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 598) (SEQ ID NO:9977)
75
                     GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 599) (SEQ ID NO:9978)
```

```
GA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 600) (SEQ ID NO:9979)
                   GA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 600) (SEQ ID NO:99979
GA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 601) (SEQ ID NO:9980)
GA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 602) (SEQ ID NO:9981)
GA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 603) (SEQ ID NO:9982)
GA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 604) (SEQ ID NO:9983)
GA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 605) (SEQ ID NO:9984)
GA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 606) (SEQ ID NO:9984)
GA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 605) (SEQ ID NO:9985)
                    GA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 607) (SEQ ID NO:9986)
                    GA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 608) (SEQ ID NO:9987)
10
                    GA GAT GGA GGG CGG CAT GGC G-3' (FRAG 609) (SEQ ID NO:9988)
                    GA GAT GGA GGG CGG CAT GGC -3' (FRAG 610) (SEQ ID NO:9989)
                    GA GAT GGA GGG CGG CAT GG -3' (FRAG 611) (SEQ ID NO:9990)
                    GA GAT GGA GGG CGG CAT G -3' (FRAG 612) (SEQ ID NO:9991)
                   GA GAT GGA GGG CGG CA' (FRAG 612) (SEQ ID NO:9992)
GA GAT GGA GGG CGG CA-3' (FRAG 613) (SEQ ID NO:9992)
GA GAT GGA GGG CGG CA-3' (FRAG 614) (SEQ ID NO:9993)
GA GAT GGA GGG CGG C-3' (FRAG 616) (SEQ ID NO:9994)
GA GAT GGA GGG CGG -3' (FRAG 617) (SEQ ID NO:9995)
GA GAT GGA GGG CGG -3' (FRAG 617) (SEQ ID NO:9996)
GA GAT GGA GGG CGG -3' (FRAG 618) (SEQ ID NO:9996)
15
                    GA GAT GGA GGG C -3' (FRAG 618) (SEQ ID NO:9997)
                    GA GAT GGA GGG -3' (FRAG 619) (SEQ ID NO:9998)
GA GAT GGA GG -3' (FRAG 620) (SEQ ID NO:9999)
A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 621) (SEQ ID NO:10000)
20
                    A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 622) (SEQ ID NO:10001)
                    A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 623) (SEQ ID NO:10002)
25
                    A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 624) (SEQ ID NO:10003)
                    A GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 625) (SEQ ID NO:10004)
                    A GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 626) (SEQ ID NO:10005)
                    A GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 627) (SEQ ID NO:10006)
                   A GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 628) (SEQ ID NO:10007)
A GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 629) (SEQ ID NO:10008)
30
                   A GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 629) (SEQ ID NO:10008)
A GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 630) (SEQ ID NO:10009)
A GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 631) (SEQ ID NO:10010)
A GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 631) (SEQ ID NO:10011)
A GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 633) (SEQ ID NO:10011)
A GAT GGA GGG CGG CAT GGC GG-3' (FRAG 634) (SEQ ID NO:10012)
A GAT GGA GGG CGG CAT GGC GG-3' (FRAG 635) (SEQ ID NO:10013)
A GAT GGA GGG CGG CAT GGC -3' (FRAG 636) (SEQ ID NO:10015)
A GAT GGA GGG CGG CAT GG-3' (FRAG 637) (SEQ ID NO:10015)
A GAT GGA GGG CGG CAT GG-3' (FRAG 639) (SEQ ID NO:10017)
A GAT GGA GGG CGG CAT -3' (FRAG 639) (SEQ ID NO:10018)
A GAT GGA GGG CGG CAT -3' (FRAG 640) (SEQ ID NO:10019)
35
40
                    A GAT GGA GGG CGG CA-3' (FRAG 640) (SEQ ID NO:10019)
                    A GAT GGA GGG CGG C-3' (FRAG 641) (SEQ ID NO:10020)
                    A GAT GGA GGG CGG -3' (FRAG 642) (SEQ ID NO:10021)
                    A GAT GGA GGG CG -3' (FRAG 643) (SEQ ID NO:10022)
45
                    A GAT GGA GGG C -3' (FRAG 644) (SEQ ID NO:10023)
                    A GAT GGA GGG -3' (FRAG 645) (SEQ ID NO:10024)
                     GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 646) (SEQ ID NO:10025)
                     GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 647) (SEQ ID NO:10026)
                     GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 648) (SEQ ID NO:10027)
                     GAT GGA GGO CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 6) (SEQ ID NO:10028)
50
                     GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 650) (SEQ ID NO:10029)
                    GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 650) (SEQ ID NO:10029)
GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 651) (SEQ ID NO:10030)
GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 652) (SEQ ID NO:10031)
GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 653) (SEQ ID NO:10032)
GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 654) (SEQ ID NO:10033)
GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 655) (SEQ ID NO:10034)
GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 656) (SEQ ID NO:10035)
GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 657) (SEQ ID NO:10036)
55
                     GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 658) (SEQ ID NO:10037)
60
                     GAT GGA GGG CGG CAT GGC GG-3' (FRAG 659) (SEQ ID NO:10038)
                     GAT GGA GGG CGG CAT GGC G-3' (FRAG 660) (SEQ ID NO:10039)
                     GAT GGA GGG CGG CAT GGC -3' (FRAG 661) (SEQ ID NO:10040)
                     GAT GGA GGG CGG CAT GG -3' (FRAG 662) (SEQ ID NO:10041)
                     GAT GGA GGG CGG CAT G -3' (FRAG 663) (SEQ ID NO:10042)
65
                     GAT GGA GGG CGG CAT -3' (FRAG 664) (SEQ ID NO:10043)
                   GAT GGA GGG CGG CAT -3' (FRAG 664) (SEQ ID NO:10043)
GAT GGA GGG CGG CA-3' (FRAG 665) (SEQ ID NO:10044)
GAT GGA GGG CGG C-3' (FRAG 666) (SEQ ID NO:10045)
GAT GGA GGG CGG -3' (FRAG 667) (SEQ ID NO:10046)
GAT GGA GGG CG -3' (FRAG 668) (SEQ ID NO:10047)
GAT GGA GGG CG -3' (FRAG 669) (SEQ ID NO:10047)
AT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 670) (SEQ ID NO:10049)
AT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 671) (SEQ ID NO:10050)
AT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 672) (SEQ ID NO:10051)
AT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 673) (SEQ ID NO:10052)
AT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 674) (SEO ID NO:10053)
70
75
                     AT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 674) (SEQ ID NO:10053)
```

```
AT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 675) (SEQ ID NO:10054)
AT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 676) (SEQ ID NO:10055)
AT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 677) (SEQ ID NO:10056)
AT GGA GGG CGG CAT GGC GGG CAC -3' (FRAG 678) (SEQ ID NO:10057)
AT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 679) (SEQ ID NO:10058)
AT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 680) (SEQ ID NO:10059)
    5
                            AT GGA GGG CGG CAT GGC GGG C-3' (FRAG 681) (SEQ ID NO:10060)
                            AT GGA GGG CGG CAT GGC GGG -3' (FRAG 682) (SEQ ID NO:10061)
                            AT GGA GGG CGG CAT GGC GG-3' (FRAG 683) (SEQ ID NO:10062)
 10
                            AT GGA GGG CGG CAT GGC G-3' (FRAG 684) (SEQ ID NO:10063)
                            AT GGA GGG CGG CAT GGC -3' (FRAG 685) (SEQ ID NO:10064)
                          AT GGA GGG CGG CAT GGC -3' (FRAG 685) (SEQ ID NO:10064)
AT GGA GGG CGG CAT GG -3' (FRAG 686) (SEQ ID NO:10065)
AT GGA GGG CGG CAT -3' (FRAG 687) (SEQ ID NO:10066)
AT GGA GGG CGG CAT -3' (FRAG 688) (SEQ ID NO:10067)
AT GGA GGG CGG CA-3' (FRAG 689) (SEQ ID NO:10068)
AT GGA GGG CGG C-3' (FRAG 690) (SEQ ID NO:10070)
AT GGA GGG CGG -3' (FRAG 691) (SEQ ID NO:10071)
T GGA GGG CGG CAT GGC CGG CAC AGG CTG GGC-3' (FRA
 15
                          T GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 693) (SEQ ID NO:10072)
T GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 694) (SEQ ID NO:10073)
T GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 695) (SEQ ID NO:10074)
T GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 695) (SEQ ID NO:10075)
 20
                           T GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 697) (SEQ ID NO:10076)
                           T GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 698) (SEQ ID NO:10077)
 25
                           T GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 699) (SEQ ID NO:10078)
                           T GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 700) (SEQ ID NO:10079)
                           T GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 701) (SEQ ID NO:10080)
                         T GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 701) (SEQ ID NO:10080)
T GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 702) (SEQ ID NO:10081)
T GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 703) (SEQ ID NO:10082)
T GGA GGG CGG CAT GGC GGG C-3' (FRAG 704) (SEQ ID NO:10083)
T GGA GGG CGG CAT GGC GGG C-3' (FRAG 704) (SEQ ID NO:10084)
T GGA GGG CGG CAT GGC GGG-3' (FRAG 705) (SEQ ID NO:10085)
T GGA GGG CGG CAT GGC G-3' (FRAG 707) (SEQ ID NO:10086)
T GGA GGG CGG CAT GGC -3' (FRAG 708) (SEQ ID NO:10087)
T GGA GGG CGG CAT GG -3' (FRAG 709) (SEQ ID NO:10088)
T GGA GGG CGG CAT GG -3' (FRAG 710) (SEQ ID NO:10089)
T GGA GGG CGG CAT -3' (FRAG 711) (SEQ ID NO:10090)
T GGA GGG CGG CA-3' (FRAG 712) (SEQ ID NO:10091)
 30
 35
               5'-
                          T GGA GGG CGG CA-3' (FRAG 712) (SEQ ID NO:10091)
T GGA GGG CGG C-3' (FRAG 713) (SEQ ID NO:10092)
               5'-
 40
                          T GGA GGG CGG -3' (FRAG 714) (SEQ ID NO:10093)
                            GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 715) (SEQ ID NO:10094)
               5'-
                            GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 716) (SEQ ID NO:10095)
GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 717) (SEQ ID NO:10096)
                            GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 718) (SEQ ID NO:10097)
GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 719) (SEQ ID NO:10098)
               5'-
 45
                            GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 720) (SEQ ID NO:10099)
                            GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 721) (SEQ ID NO:10100)
                            GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 722) (SEQ ID NO:10101)
GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 723) (SEQ ID NO:10102)
                         GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 723) (SEQ ID NO:1010:

GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 724) (SEQ ID NO:10103)

GGA GGG CGG CAT GGC GGG CA-3' (FRAG 725) (SEQ ID NO:10104)

GGA GGG CGG CAT GGC GGG C-3' (FRAG 725) (SEQ ID NO:10105)

GGA GGG CGG CAT GGC GGG-3' (FRAG 727) (SEQ ID NO:10106)

GGA GGG CGG CAT GGC GG-3' (FRAG 729) (SEQ ID NO:10108)

GGA GGG CGG CAT GGC G-3' (FRAG 730) (SEQ ID NO:10109)

GGA GGG CGG CAT GGC -3' (FRAG 731) (SEQ ID NO:10110)

GGA GGG CGG CAT GG -3' (FRAG 732) (SEQ ID NO:10111)

GGA GGG CGG CAT G-3' (FRAG 733) (SEQ ID NO:10111)
50
55
                            GGA GGG CGG CAT -3' (FRAG 733) (SEQ ID NO:10112)
60
                            GGA GGG CGG CA-3' (FRAG 734) (SEQ ID NO:10113)
                            GGA GGG CGG C-3' (FRAG 735) (SEQ ID NO:10114)
                           GA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 736) (SEQ ID NO:10115)
                           GA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 737) (SEQ ID NO:10116)
GA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 738) (SEQ ID NO:10117)
                         GA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 738) (SEQ ID NO:10117 GA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 739) (SEQ ID NO:10118) GA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 740) (SEQ ID NO:10119) GA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 741) (SEQ ID NO:10120) GA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 742) (SEQ ID NO:10121) GA GGG CGG CAT GGC GGG CAC AGG-3' (FRAG 743) (SEQ ID NO:10122) GA GGG CGG CAT GGC GGG CAC A-3' (FRAG 744) (SEQ ID NO:10123) GA GGG CGG CAT GGC GGG CAC A-3' (FRAG 745) (SEQ ID NO:10124) GA GGG CGG CAT GGC GGG CAC-3' (FRAG 746) (SEQ ID NO:10125) GA GGG CGG CAT GGC GGG CA3' (FRAG 747) (SEQ ID NO:10126) GA GGG CGG CAT GGC GGG C-3' (FRAG 747) (SEQ ID NO:10126)
65
70
              51.
                          GA GGG CGG CAT GGC GGG -3' (FRAG 748) (SEQ ID NO:10127)
75
                          GA GGG CGG CAT GGC GG-3' (FRAG 749) (SEQ ID NO:10128)
```

```
GA GGG CGG CAT GGC G-3' (FRAG 750) (SEQ ID NO:10129)
                      GA GGG CGG CAT GGC -3' (FRAG 751) (SEQ ID NO:10130)
                      GA GGG CGG CAT GG -3' (FRAG 752) (SEQ ID NO:10131)
                    GA GGG CGG CAT GG -3' (FRAG 752) (SEQ ID NO:10131)
GA GGG CGG CAT G-3' (FRAG 753) (SEQ ID NO:10132)
GA GGG CGG CAT -3' (FRAG 754) (SEQ ID NO:10133)
GA GGG CGG CA-3' (FRAG 755) (SEQ ID NO:10134)
A GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 756) (SEQ ID NO:10135)
A GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 757) (SEQ ID NO:10136)
A GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 758) (SEQ ID NO:10137)
  5
            5'-
10
                     A GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 759) (SEQ ID NO:10138)
                     A GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 760) (SEQ ID NO:10139)
                     A GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 761) (SEQ ID NO:10140)
A GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 762) (SEQ ID NO:10141)
            5'-
                     A GGG CGG CAT GGC GGG CAC AG-3' (FRAG 763) (SEQ ID NO:10142)
15
                     A GGG CGG CAT GGC GGG CAC A-3' (FRAG 764) (SEQ ID NO:10143)
                    A GGG CGG CAT GGC GGG CAC-3' (FRAG 764) (SEQ ID NO:1014:
A GGG CGG CAT GGC GGG CAC-3' (FRAG 765) (SEQ ID NO:10144)
A GGG CGG CAT GGC GGG CA-3' (FRAG 766) (SEQ ID NO:10144)
A GGG CGG CAT GGC GGG C-3' (FRAG 767) (SEQ ID NO:10146)
A GGG CGG CAT GGC GGG -3' (FRAG 768) (SEQ ID NO:10147)
A GGG CGG CAT GGC GGG-3' (FRAG 769) (SEQ ID NO:10148)
A GGG CGG CAT GGC G-3' (FRAG 770) (SEQ ID NO:10149)
A GGG CGG CAT GGC -3' (FRAG 771) (SEQ ID NO:10150)
A GGG CGG CAT GG-3' (FRAG 773) (SEQ ID NO:10151)
A GGG CGG CAT G-3' (FRAG 773) (SEQ ID NO:10152)
A GGG CGG CAT G-3' (FRAG 773) (SEQ ID NO:10153)
20
            5'-
           51_
25
                     A GGG CGG CAT -3' (FRAG 774) (SEQ ID NO:10153)
                      GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 775) (SEQ ID NO:10154)
            5'-
                      GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 776) (SEQ ID NO:10155)
            5'-
                      GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 777) (SEQ ID NO:10156)
                      GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 778) (SEQ ID NO:10157)
30
                      GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 779) (SEQ ID NO:10158)
                      GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 780) (SEQ ID NO:10159)
                      GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 781) (SEQ ID NO:10160)
                      GGG CGG CAT GGC GGG CAC AG-3' (FRAG 782) (SEO ID NO:10161)
                      GGG CGG CAT GGC GGG CAC A-3' (FRAG 783) (SEQ ID NO:10162)
                      GGG CGG CAT GGC GGG CAC-3' (FRAG 784) (SEQ ID NO:10163)
GGG CGG CAT GGC GGG CA-3' (FRAG 785) (SEQ ID NO:10164)
35
                     GGG CGG CAT GGC GGG CA-3' (FRAG 785) (SEQ ID NO:10164)
GGG CGG CAT GGC GGG C-3' (FRAG 786) (SEQ ID NO:10165)
GGG CGG CAT GGC GGG -3' (FRAG 787) (SEQ ID NO:10166)
GGG CGG CAT GGC GG-3' (FRAG 788) (SEQ ID NO:10167)
GGG CGG CAT GGC -3' (FRAG 789) (SEQ ID NO:10168)
GGG CGG CAT GGC -3' (FRAG 790) (SEQ ID NO:10169)
GGG CGG CAT GGC -3' (FRAG 791) (SEQ ID NO:10170)
GGG CGG CAT GGC -3' (FRAG 791) (SEQ ID NO:10171)
40
            5'-
            5'-
                      GGG CGG CAT G -3' (FRAG 792) (SEQ ID NO:10171)
                      GG CGG CAT GGC GGG CAC AG G CTG GGC-3' (FRAG 793) (SEQ ID NO:10172)
GG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 794) (SEQ ID NO:10173)
45
            5'-
                      GG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 795) (SEQ ID NO:10174)
                      GG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 796) (SEQ ID NO:10175)
                      GG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 797) (SEQ ID NO:10176)
                      GG CGG CAT GGC GGG CAC AGG C-3' (FRAG 798) (SEQ ID NO:10177)
50
           5'-
                      GG CGG CAT GGC GGG CAC AGG -3' (FRAG 799) (SEQ ID NO:10178)
                      GG CGG CAT GGC GGG CAC AG-3' (FRAG 800) (SEQ ID NO:10179)
                      GG CGG CAT GGC GGG CAC A-3' (FRAG 801) (SEQ ID NO:10180)
GG CGG CAT GGC GGG CAC-3' (FRAG 802) (SEQ ID NO:10181)
                     GG CGG CAT GGC GGG CAC-3' (FRAG 802) (SEQ ID NO:10181)
GG CGG CAT GGC GGG CA-3' (FRAG 803) (SEQ ID NO:10182)
GG CGG CAT GGC GGG C-3' (FRAG 804) (SEQ ID NO:10183)
GG CGG CAT GGC GGG -3' (FRAG 805) (SEQ ID NO:10184)
GG CGG CAT GGC GG-3' (FRAG 806) (SEQ ID NO:10185)
GG CGG CAT GGC GG-3' (FRAG 807) (SEQ ID NO:10186)
GG CGG CAT GGC -3' (FRAG 808) (SEQ ID NO:10187)
GG CGG CAT GGC -3' (FRAG 809) (SEQ ID NO:10188)
G CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 810) (SEQ ID NO:10189)
G CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 811) (SEQ ID NO:10190)
G CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 811) (SEQ ID NO:10191)
55
60
                     G CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 812) (SEQ ID NO:10191)
G CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 813) (SEQ ID NO:10192)
65
                      G CGG CAT GGC GGG CAC AGG CT-3' (FRAG 814) (SEQ ID NO:10193)
                      G CGG CAT GGC GGG CAC AGG C-3' (FRAG 815) (SEQ ID NO:10194)
           5'-
                      G CGG CAT GGC GGG CAC AGG -3' (FRAG 816) (SEQ ID NO:10195)
                      G CGG CAT GGC GGG CAC AG-3' (FRAG 817) (SEQ ID NO:10196)
                     G CGG CAT GGC GGG CAC A-3' (FRAG 818) (SEQ ID NO:10197)
G CGG CAT GGC GGG CAC-3' (FRAG 819) (SEQ ID NO:10198)
70
                     G CGG CAT GGC GGG CA-3' (FRAG 820) (SEQ ID NO:10199)
G CGG CAT GGC GGG C-3' (FRAG 821) (SEQ ID NO:10200)
G CGG CAT GGC GGG -3' (FRAG 822) (SEQ ID NO:10201)
           5'-
                     G CGG CAT GGC GG-3' (FRAG 823) (SEQ ID NO:10202)
G CGG CAT GGC G-3' (FRAG 824) (SEQ ID NO:10203)
75
```

```
G CGG CAT GGC -3' (FRAG 825) (SEQ ID NO:10204)
                            CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 826) (SEQ ID NO:10205)
                           CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 827) (SEQ ID NO:10205)
CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 827) (SEQ ID NO:10207)
CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 828) (SEQ ID NO:10207)
CGG CAT GGC GGG CAC AGG CTG-3' (FRAG 829) (SEQ ID NO:10208)
CGG CAT GGC GGG CAC AGG CT-3' (FRAG 830) (SEQ ID NO:10210)
CGG CAT GGC CGC CAC AGG CT-3' (FRAG 831) (SEQ ID NO:10210)
              5'-
              5'-
              5'-
              5'-
                            CGG CAT GGC GGG CAC AGG -3' (FRAG 832) (SEQ ID NO:10211)
                            CGG CAT GGC GGG CAC AG-3' (FRAG 833) (SEQ ID NO:10212)
 10
              5'-
                            CGG CAT GGC GGG CAC A-3' (FRAG 834) (SEQ ID NO:10213)
                            CGG CAT GGC GGG CAC-3' (FRAG 835) (SEQ ID NO:10214)
                            CGG CAT GGC GGG CA-3' (FRAG 836) (SEQ ID NO:10215)
                            CGG CAT GGC GGG C-3' (FRAG 837) (SEQ ID NO:10216)
                           CGG CAT GGC GGG -3' (FRAG 838) (SEQ ID NO:10217)
CGG CAT GGC GG-3' (FRAG 839) (SEQ ID NO:10218)
 15
                           CGG CAT GGC GG-3' (FRAG 839) (SEQ ID NO:10218)
CGG CAT GGC G-3' (FRAG 840) (SEQ ID NO:10219)
GG CAT GGC GGG CAC AGG C TG GGC-3' (FRAG 841) (SEQ ID NO:10220)
GG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 842) (SEQ ID NO:10221)
GG CAT GGC GGG CAC AGG CTG G-3' (FRAG 843) (SEQ ID NO:10222)
GG CAT GGC GGG CAC AGG CTG-3' (FRAG 844) (SEQ ID NO:10223)
GG CAT GGC GGG CAC AGG CT-3' (FRAG 845) (SEQ ID NO:10224)
GG CAT GGC GGG CAC AGG C-3' (FRAG 846) (SEQ ID NO:10225)
GG CAT GGC GGG CAC AGG -3' (FRAG 847) (SFO ID NO:10225)
 20
              51-
              5'-
5'-
                            GG CAT GGC GGG CAC AGG -3' (FRAG 847) (SEQ ID NO:10226)
                            GG CAT GGC GGG CAC AG-3' (FRAG 848) (SEQ ID NO:10227)
 25
              5'-
                            GG CAT GGC GGG CAC A-3' (FRAG 849) (SEQ ID NO:10228)
                            GG CAT GGC GGG CAC-3' (FRAG 850) (SEQ ID NO:10229)
              5'-
                            GG CAT GGC GGG CA-3' (FRAG 851) (SEQ ID NO:10230)
              5'-
                            GG CAT GGC GGG C-3' (FRAG 852) (SEQ ID NO:10231)
                            GG CAT GGC GGG -3' (FRAG 853) (SEQ ID NO:10232)
 30
                          GG CAT GGC GG-3' (FRAG 854) (SÈQ ID NO:10233)
G CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 855) (SEQ ID NO:10234)
G CAT GGC GGG CAC AGG CTG GG-3' (FRAG 855) (SEQ ID NO:10234)
G CAT GGC GGG CAC AGG CTG GG-3' (FRAG 857) (SEQ ID NO:10235)
G CAT GGC GGG CAC AGG CTG G-3' (FRAG 857) (SEQ ID NO:10236)
G CAT GGC GGG CAC AGG CTG-3' (FRAG 859) (SEQ ID NO:10237)
G CAT GGC GGG CAC AGG C-3' (FRAG 859) (SEQ ID NO:10238)
G CAT GGC GGG CAC AGG C-3' (FRAG 861) (SEQ ID NO:10249)
G CAT GGC GGG CAC AGG-3' (FRAG 861) (SEQ ID NO:10241)
G CAT GGC GGG CAC AG-3' (FRAG 863) (SEQ ID NO:10242)
G CAT GGC GGG CAC A-3' (FRAG 863) (SEQ ID NO:10244)
G CAT GGC GGG CAC-3' (FRAG 865) (SEQ ID NO:10244)
G CAT GGC GGG CA-3' (FRAG 866) (SEQ ID NO:10245)
G CAT GGC GGG C-3' (FRAG 866) (SEQ ID NO:10245)
G CAT GGC GGG C-3' (FRAG 867) (SEQ ID NO:10245)
                            GG CAT GGC GG-3' (FRAG 854) (SEQ ID NO:10233)
              5'-
              5'-
35
              5'-
              5'-
              5'-
              5'-
40
              5'-
              5'-
              5'-
5'-
5'-
                           G CAT GGC GGG -3' (FRAG 867) (SEQ ID NO:10246)
CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 868) (SEQ ID NO:10247)
45
                             CAT GGC GGG CAC AGG CTG GG-3' (FRAG 869) (SEQ ID NO:10248)
                             CAT GGC GGG CAC AGG CTG G-3' (FRAG 870) (SEQ ID NO:10249)
              5'-
                             CAT GGC GGG CAC AGG CTG -3' (FRAG 871) (SEQ ID NO:10250)
              5'-
                             CAT GGC GGG CAC AGG CT-3' (FRAG 872) (SEQ ID NO:10251)
                             CAT GGC GGG CAC AGG C-3' (FRAG 873) (SEQ ID NO:10252)
50
                             CAT GGC GGG CAC AGG -3' (FRAG 874) (SEQ ID NO:10253)
                             CAT GGC GGG CAC AG-3' (FRAG 875) (SEQ ID NO:10254)
                            CAT GGC GGG CAC A-3' (FRAG 876) (SEQ ID NO:10255)
CAT GGC GGG CAC-3' (FRAG 877) (SEQ ID NO:10256)
                           CAT GGC GGG CAC-3' (FRAG 877) (SEQ ID NO:10256)
CAT GGC GGG CA-3' (FRAG 878) (SEQ ID NO:10257)
CAT GGC GGG C-3' (FRAG 878) (SEQ ID NO:10257)
CAT GGC GGG C-3' (FRAG 879) (SEQ ID NO:10259)
AT GGC GGG CAC AGG CTG GGC-3' (FRAG 880) (SEQ ID NO:10269)
AT GGC GGG CAC AGG CTG GG-3' (FRAG 881) (SEQ ID NO:10261)
AT GGC GGG CAC AGG CTG G-3' (FRAG 883) (SEQ ID NO:10261)
AT GGC GGG CAC AGG CT-3' (FRAG 884) (SEQ ID NO:10263)
AT GGC GGG CAC AGG C-3' (FRAG 885) (SEQ ID NO:10264)
AT GGC GGG CAC AGG -3' (FRAG 886) (SEQ ID NO:10265)
AT GGC GGG CAC AGG -3' (FRAG 886) (SEQ ID NO:10266)
55
              5'-
60
              5'-
              5'-
                             AT GGC GGG CAC AG-3' (FRAG 887) (SEQ ID NO:10266)
                             AT GGC GGG CAC A-3' (FRAG 888) (SEQ ID NO:10267)
65
              5'-
                             AT GGC GGG CAC-3' (FRAG 889) (SEQ ID NO:10268)
                             AT GGC GGG CA-3' (FRAG 890) (SEQ ID NO:10269)
              5'-
                             T GGC GGG CAC AGG CTG GGC-3' (FRAG 891) (SEQ ID NO:10270)
                           T GGC GGG CAC AGG CTG GGC-3' (FRAG 891) (SEQ ID NO:10270)
T GGC GGG CAC AGG CTG GG-3' (FRAG 892) (SEQ ID NO:10271)
T GGC GGG CAC AGG CTG G-3' (FRAG 893) (SEQ ID NO:10272)
T GGC GGG CAC AGG CTG -3' (FRAG 894) (SEQ ID NO:10273)
T GGC GGG CAC AGG CTG-3' (FRAG 895) (SEQ ID NO:10273)
T GGC GGG CAC AGG C-3' (FRAG 896) (SEQ ID NO:10275)
T GGC GGG CAC AGG -3' (FRAG 897) (SEQ ID NO:10276)
T GGC GGG CAC AG-3' (FRAG 898) (SEQ ID NO:10277)
T GGC GGG CAC A-3' (FRAG 899) (SEQ ID NO:10278)
70
              5'-
              5'-
              5'-
75
```

```
T GGC GGG CAC-3' (FRAG 900) (SEQ ID NO:10279)
GGC GGG CAC AGG CTG GGC-3' (FRAG 901) (SEQ ID NO:10280)
GGC GGG CAC AGG CTG GG-3' (FRAG 902) (SEQ ID NO:10281)
GGC GGG CAC AGG CTG G-3' (FRAG 903) (SEQ ID NO:10282)
GGC GGG CAC AGG CTG -3' (FRAG 904) (SEQ ID NO:10283)
GGC GGG CAC AGG CTG-3' (FRAG 905) (SEQ ID NO:10284)
           5'-
  5
          5'-
           5'-
           5'-
                       GGC GGG CAC AGG C-3' (FRAG 906) (SEQ ID NO:10285)
                       GGC GGG CAC AGG -3' (FRAG 907) (SEQ ID NO:10286)
GGC GGG CAC AG-3' (FRAG 908) (SEQ ID NO:10287)
                       GGC GGG CAC A-3' (FRAG 909) (SEQ ID NO:10288)
GC GGG CAC AGG CTG GGC-3' (FRAG 910) (SEQ ID NO:10289)
10
                       GC GGG CAC AGG CTG GG-3' (FRAG 911) (SEQ ID NO:10290)
GC GGG CAC AGG CTG G-3' (FRAG 912) (SEQ ID NO:10291)
          5- GC GGG CAC AGG CTG -3' (FRAG 912) (SEQ ID NO:10291)
5- GC GGG CAC AGG CT-3' (FRAG 913) (SEQ ID NO:10293)
5- GC GGG CAC AGG CT-3' (FRAG 914) (SEQ ID NO:10294)
5- GC GGG CAC AGG C-3' (FRAG 915) (SEQ ID NO:10294)
5- GC GGG CAC AGG -3' (FRAG 916) (SEQ ID NO:10295)
           5'- GC GGG CAC AG-3' (FRAG 917) (SEQ ID NO:10296)
           5'- C GGG CAC AGG CTG GGC-3' (FRAG 918) (SEQ ID NO:10297)
          5'- GGG CAC AGG CTG GG-3' (FRAG 919) (SEQ ID NO:10298)
           5'- C GGG CAC AGG CTG G-3' (FRAG 920) (SEQ ID NO:10299)
           5'- C GGG CAC AGG CTG -3' (FRAG 921) (SEQ ID NO:10300)
           5'- C GGG CAC AGG CT-3' (FRAG 922) (SEQ ID NO:10301)
           5'- C GGG CAC AGG C-3' (FRAG 923) (SEQ ID NO:10302)
           5'- C GGG CAC AGG -3' (FRAG 924) (SEQ ID NO:10303)
           5'- GGG CAC AGG CTG GGC-3' (FRAG 925) (SEQ ID NO:10304)
         5'- GGG CAC AGG CTG GGC-3' (FRAG 925) (SEQ ID NO:10304)
5'- GGG CAC AGG CTG GG-3' (FRAG 926) (SEQ ID NO:10305)
5'- GGG CAC AGG CTG G-3' (FRAG 926) (SEQ ID NO:10306)
5'- GGG CAC AGG CTG -3' (FRAG 928) (SEQ ID NO:10307)
5'- GGG CAC AGG CT-3' (FRAG 929) (SEQ ID NO:10308)
5'- GGG CAC AGG CTG GGC-3' (FRAG 931) (SEQ ID NO:10310)
5'- GG CAC AGG CTG GG-3' (FRAG 932) (SEQ ID NO:10311)
5'- GG CAC AGG CTG G-3' (FRAG 933) (SEQ ID NO:10312)
5'-GG CAC AGG CTG G-3' (FRAG 934) (SEQ ID NO:10313)
5'- GG CAC AGG CTG G-3' (FRAG 935) (SEQ ID NO:10313)
           5'- GG CAC AGG CT-3' (FRAG 935) (SEQ ID NO:10314)
           5'-G CAC AGG CTG GGC-3' (FRAG 936) (SEQ ID NO:10315)
           5'-G CAC AGG CTG GG-3' (FRAG 937) (SEQ ID NO:10316)
           5'-G CAC AGG CTG G-3' (FRAG 938) (SEQ ID NO:10317)
          5'-G CAC AGG CTG -3' (FRAG 939) (SEQ ID NO:10318)
           5'-CAC AGG CTG GGC-3' (FRAG 940) (SEQ ID NO:10319)
           5'-CAC AGG CTG GG-3' (FRAG 941) (SEQ ID NO:10320)
           5'-CAC AGG CTG G-3' (FRAG 942) (SEQ ID NO:10321)
          5'-AC AGG CTG GGC-3' (FRAG 943) (SEQ ID NO:10322)
5'-AC AGG CTG GG-3' (FRAG 944) (SEQ ID NO:10323)
           5'-C AGG CTG GGC-3' (FRAG 945) (SEQ ID NO:10324)
5'-TTT TCC TTC CTT TGT CTC TCT TC (FRAG 946) (SEQ ID NO:10325)
         5-TTT TCC TTC CTT TGT CTC TCT TC (FRAG 946) (SEQ ID NO:10325)
5-GCT CCC GGC TGC CTG (FRAG 947) (SEQ ID NO:10326)
5-CTC GGC CGT GCG GCT CTG TCG CTC CCG GT (FRAG 948) (SEQ ID NO:10327)
5-CCG CCG CCC TCC GGG GGG TC (FRAG 949) (SEQ ID NO:10328)
5-TGC TGC CGT TGG CTG CCC (FRAG 950) (SEQ ID NO:10329)
5-CTT CTG CGG GTC GCC GG (FRAG 951) (SEQ ID NO:10330)
5-TGC TGG GCT TGT GGC (FRAG 953) (SEQ ID NO:10331)
5-GGC CTC TCT TCT GGG (FRAG 953) (SEQ ID NO:10332)
5-CCT GGT CCC TCC GT (FRAG 954) (SEQ ID NO:10333)
          5'-CCT GGT CCC TCC GT (FRAG 954) (SEQ ID NO:10333)
5'-GGT GGC TCC TCT GC (FRAG 955) (SEQ ID NO:10334)
           5'-GCT TGG TCC TGG GGC TGC (FRAG 956) (SEQ ID NO:10335)
          5'-TGC TCT CCT CTC CTT (FRAG 957) (SEQ ID NO:10336)
          TGC TGT GGC CCC C GTA CAC CGA GGA GCC CAT GAT GGG CAT GCC ACA GAC GAC AGG C GTB CBC CGB GGB GCC CBT
          GBT GGG CBT GCC BCB GBC GBC BGG C-3' (FRAG. NO. 1665) (SEQ ID NO:11049)
          5'-CTG GGC CTC-3' (FRAG 1666) (SEQ ID NO:11050)
         5'-CTG GGC CTC-3' (FRAG 1666) (SEQ ID NO:11050)
5'-TGC TTT TCT TTT CTG GGC CTC-3' (FRAG 958) (SEQ ID NO:10337)
5'-TGC TGT TTT TTT TCT G-3' (FRAG 959) (SEQ ID NO:10338)
5'-GCC CTG CTG GGG CGC TCT CC-3' (FRAG 960) (SEQ ID NO:10339)
5'-GCC GCC CGC CTG GCT CCC-3' (FRAG 961) (SEQ ID NO:10340)
5'-GGB GCC CBT GBT GGG CBT GCC-3' (FRAG 962) (SEQ ID NO:10341)
5'-GTG GTT CTT GCC CTC CTT TGG CTG-3' (FRAG 963) (SEQ ID NO:10342)
5'-CCC TGC CCC GCC GCC-3' (FRAG 964) (SEQ ID NO:10344)
5'-CCC CTG CCC GTT TCC CCT GGG-3' (FRAG 965) (SEQ ID NO:10344)
5'-GGC CCG TGT TCC CCT GGG-3' (FRAG 966) (SEQ ID NO:10344)
5'-GCC CTG GGC CCC CTT CTC-3' (FRAG 967) (SEQ ID NO:10345)
          5'-GCC TGG GGC TCC CTT CTC TC-3' (FRAG 967) (SEQ ID NO:10346)
```

5'-GCC CTT CTT GCT GGG CCT C-3' (FRAG 968) (SEQ ID NO:10347)
5'-TGC TGC TGC TGC TGT GGC CCC C-3' (FRAG 969) (SEQ ID NO:10348)
5'-GTACACCGAGGAGCCCATGATGGGCATGCCACAGACGACAGGC-3' (FRAG 970) (SEQ ID NO:10349)
5'-GTBCBCCGBGGBGCCCBTGBTGGGCBTGCCBCBGBCGBCBGCC-3' (FRAG 971) (SEQ ID NO:10350)

Human Adenosine A2b Receptor Nucleic Acid & Antisense Oligonucleotide Fragments F-GGC GCC GTG CCG CGT CTT GGT GGC GGC GG GTT CGC GCC CGC GCG GGG CCC CTC CGG TCC GTT CGC GCC CGC GCG CGC CTG CCG CTT CTG GCT GGG CCC CGG GCG CCC CCT CCC CTC TTG CTC GGG TCC CCG TG ACA GCG CGT CCT GTG TCT CCA GCA GCA TGG CCG GGC CAG CTG GGC CCC BCB GCG CGT CCT GTG TCT CCB GCB GCB TGG CCG GGC CBG CTG GGC CCC CCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT CACGCGGCTG CCCCTCGCCC GGCGCGCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT GCTGGAGACA CAGGACGCGC TGTACGTGGC GCTGGAGGTG GTCATCGCCG CGCTTTCGGT GGCGGCCAAC GTGCTGGTGT GCGCCGCGGT
GGCCACGGCG AACACTCTGC AGACGCCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGGC CGACGTGGCC GTGGGGCTCT
TCGCCATCCC CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCCTCGC CTGCTTCGTG
CTGGTGCTCA CGCAGAGCTC CATCTTCAGC CTTCTGGCCG TGGCAGTCGA CAGATACCTG GCCATCTGTG TCCCGCTCAG
GTATAAAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCCT TGCCTTTGGC ATCGGATTGA CTCCATTCCT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC
TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTC AATTTCTTTG GGTGTGTTCT
GCCCCCACTG CTTATAATGC TGGTGATCTA CATTAAGATC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA
TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCCTG TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCACTCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT
GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT
ACACTTTTCA CAAAATTATC TCCAGGTATC TTCTCTGCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC TGGGGTACAG
CCTGCTCTCG GTGTGGGCCT ATGATCTAGG CTCTCGCCTC TTCCAGGAGA AGATACAAAT CCACAAGAAA CAAAGAGGAC CCTGCTCTCG GTGTGGGCCT ATGATCTAGG CTCTCGCCCTC TTCCAGGAGA AGATACAAAT CCACAAGAAA CAAAGAGGAC ACGCGCTGGTT TTCATTGTGA AAGATAGCTA CACCTCACAA GGAAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC CACGTATCTA GCTAATATGT ATGTGTCAGT AGTAGCACCA AGGATTGACA AATAATATTA TGATCTATTC AGCTGCTTTT ACTGTGTGGA TTATGCCAAC AGCTCTACAA GCTCTTACAA GACTCTTTTGAAAG TCTGCCTTGT TTATGGTGGA AAATTACTGA AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA ATAAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTTAAAT TATTCGGCCG GCCATGGGG CTCACAACACCTG TAAATCCAG ACTTTGGGAG GCCAAGGGAG GCCGAGGATCACG AGGTCAGGAG TTCAAAACCA GCCTGTCCAA TATAGTG GGGCAATTTG TTAGTTATCC GCCGCCACCA AGACGCGGCA CGGCGCCTGG ACCGGAGGGG CCCCGCGGG GCGCGAACTT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCCGAGA CGGGCGGGCG CGCGGGCCAA TGGGTGCCGC CTCTTGGCCG CGGGGGGCCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCCGAGG CTCAGAAGCG GCAGGCGGAG GCGCGGTCCG GGCGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCCC CTCGCCCGGC GCGCCTTCGG 35 TAGGGGGCGC CCGGGGCCCA GCTGGCCCGG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCCACCAA CTACTTCCTG GTGTCCCTGG CTGCGCCCGA CGTGGCCGTG GGGTCTTCG CCATCCCCTT TGCCATCACC ATCAGCCTGG
GCTTCTGCAC TGACTTCTAC GGCTGCCCTC TCCTCGCCTG GTTCTGCACGC AGAGCTCCAT CTTCAGCCTT
CTGGCCGTGG CAGTCGACAG ATACCTGGCC ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG
AGGGGTCATT GCTGTCCTCT GGGTCCTTGC CTTTGGCATC GGATTGACTC CATTCCTGGG GTGGAACAGT AAAGACAGTG TCGCCTCTTC CAGGAGAAGA TACAAATCCA CAAGAAACAA AGGACACG GCTGGTTTTC ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA TTCTAACAGA CTCTTTTGTT TTTAAAAGTC TGCCTTGTTT ATGGTGGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAA TACTTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAAA ATG CCCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT CACGCGGCTG CCCCTCGCCC GGCGCGCCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT GCTGGAGACA CAGGACGCGC TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTTCGGT GCGCGGCAAC GTGCTGGTGT GCGCCGCGGT GGGCACGGCG AACACTCTGC
AGACGCCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGGC CGACGTGGCC GTGGGGCTCT TCGCCATCCC CTTTGCCATC
ACCATCAGCC TGGCCTTCTG CACTGACTTC TACGGCTGCC TCTTCCTCGC CTGCTTCGTG CTGGTGCTCA CGCAGAGCTC
CATCTTCAGC CTTCTGGCCG TGGCAGTCGA CAGATACCTG GCCATCTGTG TCCCGCTCAG GTATAAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCCT TGCCTTTGGC ATCGGATTGA CTCCATTCCT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTIC AATTTCTTTG GGTGTGTTCT GCCCCCACTG CTTATAATGC
TGGTGATCTA CATTAAGATC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGGAT TTTTGCCCTG TGCTGGTTAC CTGTGCATGC
TGTTAACTGT GTCACTCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT GAATATGGCC ATTCTTCTGT
CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT ACACTTTTCA CAAAATTATC
TCCAGGTATC TTCTCTGCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC TGGGGTACAG CCTGCTCTCG GTGTGGGCCT ATGATCTAGG CTCTCGCCTC TTCCAGGAGA AGATACAAAT CACACAGAAA CAAAGAGAC ACGCTGGTT TTCATTGTGA
AAGATAGCTA CACCTCACAA GGAAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC CACGTATCTA GCTAATATGT
ATGTGTCAGT AGTAGCACCA AGGATTGACA AATATATTTA TGATCTATTC AGCTGCTTTT ACTGTGGA TTATGCCAAC
AGCTTGAATG GATTCTAACA GACTCTTTTG TTTTTAAAAG TCTGCCTTGT TTATGGTGGA AAATTACTGA
CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA ATAAAAGTTG ACTGTACTAA
AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAAT TATTCGGCCG GGCATGGTGG CTCACACCTG TAATTCCAGC ACTITIGGAG GCCAAGGCAG GCGGATCACG AGGTCAGGAG TTCAAAACCA GCCIGTCCAA TATAGTG GGGCAATTTG TTAGTTATCC GCCGCCACCA AGACGCGGCA CGGCGCCTGG ACCGGAGGGG CCCCGCGCGG GCGCGAACTT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCCGAGA CGGGCGGGCC CGCGGGCCAA TGGGTGCCGC CTCTTGGCCG

```
CGGGGGGCCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCCGAGG CTCAGAAGCG GCAGGCGGAG GCGCGGTCCG
  GGCGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCCC CTCGCCCGGC GCGCCTTCGG TAGGGGGCGC CCGGGGCCCA
GCTGGCCGG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC GGGCAACATGCTG CCGCGTGGG CCCGCGGTGGG CACGCGGAAC ACTCTGCAGA CGCCCACCAA CTACTTCCTG GTGTCCCTGG CTGCGGCCGA CGTGGCCGTG CCGCGCGTGG CACCACCACCAA CTACTTCCTG GTGTCCCTGG CTGCGCCTG CTCCGCCTG CTCCGCTG GGGCTCTACGC ATCACCCTT TGCCATCACC ATCAGCCTG GCTTCTGCAC TGACTTCTAC ACGCCTGC ATCTGTGCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG AGGGGTCATT CTGCCACAGA CCCTGGGATG CACCACCAA CTGCACAGAA CCCTGGGATG GAACCACGAA TGAAAGCTG CATTCCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA CCCTGGGATG GAACCACGAA TGAAAGCTGC TGCCTTGTGA AGTGTCTCTT TGAGAATGTG GTCCCCATGA GCTACATGAT TCTTTGGGT TCAGCGCACT ATAATGCACTG TCAGCGCACT CTGGGGATGA TCAAGAAATCTC CTGGTGGCCTG GGCAACAA AATAATCCAC CAGCAAGAA TAGCACAGAA AATAATCTCA CAAGAAACAA AAGACAAGA AAGACAACAG GTTCCCCATGA AATTCACCA CAAGAAACAA AAGACAGTG TCCCCATGA TTCCCCAAGAA AATTACCAC CAAGAAACAA AAGACAACAG CGCTCCGGTG TGCCCTTTCACAA AATTACCAC CAAGAAACAA AAGACACG GCTCCTCGGTG TGCCCTATGA ATCTAGCCTC CACCAACAA CCCCTCCAAGAA AATTACCAC CAAGAAACAA AAGAGACAG GCCTCCTGGTTTC ATGTGTAAAG ATCAGCCTACAC CTCACAAGAA AATGGACTGC
  GCTGGCCCGG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC
  TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTC ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC
 CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATCTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA
TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA TTCTAACAGA CTCTTTTGTT
TTTAAAAGTC TGCCTTGTTT ATGGTGGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAA
  TACTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAAA ATG -3' (FRAG. NO: 1670) (SEQ ID NO:12375)
  5'- GGGCAATTIG TIAGITATIC GCCGCCACCA AGACGCGGCA CGGCGCCTGG ACCGGAGGGG CCCCGCGCGG GCGCGAACTT
 GGGCAACGTG CTGGTGTGC CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCCACCAA CTACTTCCTG GTGTCCCTGG
CTGCGGCCGA CGTGGCCGTG GGGCTCTTCG CCATCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC TGACTTCTAC
GGCTGCCTCT TCCTCGCCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT CTTCAGCCTT CTGGCCGTGG CAGTCGACAG
ATACCTGGCC ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG AGGGGTCATT GCTGTCCTCT
  GGGTCCTTGC CTTTGGCATC GGATTGACTC CATTCCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA
  CCCTGGGATG GAACCACGAA TGAAAGCTGC TGCCTTGTGA AGTGTCTCTT TGAGAATGTG GTCCCCATGA GCTACATGGT ATATTTCAAT TTCTTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTTC CTGGTGGCCT GCAGGCAGCT TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC CAAGTCACTG
 GCCATGATTG TGGGGATTTT TGCCCTGTGC TGGTTACCTG TGCATGCTGT TAACTGTGTC ACTCTTTTCC AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTCAC ATGCCAATTC AGTTGTCAAT CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA CTTTTCACAA AATTATCTCC AGGTATCTTC TCTGCCAAGC AGATGTCAAG AGTGGGAATG GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCCTATG ATCTAGGCTC TCGCCTCTTC CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTC ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC
 CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATACGAAGA TGCACTGAG AGGCTCCAAG GATTGACAAA
TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAAA
TTTAAAAAGTC TGCCTTGTTT ATGGTGGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAAA
  TACTTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAAA ATG-3(FRAG.NO:_)(SEQ ID NO:11805)
   5'-CCCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT CACGCGCCTG
 CCCCTCGCCC GGCGCGCCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT GCTGGAGACA CAGGACGCGC
TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTTCGGT GGCGGGCAAC GTGCTGGTGT GCGCCGCGGT GGCACGCGC
AACACTCTGC AGACGCCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGC CGACGTGGCC GTGGGGCTCT TCGCCATCCC
CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TTCTCCTCGC CTGCTTCGTG CTGGTGCTCA
CGCAGAGGCTC CATCTTCAGC CTTCTGGCCG TGGCAGTCGA CAGATAACTTG CCCATCTGTG TCCCCGTCAGG GTATAAAAAGT
TTGGTCACGG GGACCCGAGC AAAGGGGGTC ATTGCTGTGCC TGCCGTTCAGC ATTGCGATTCA CTCCATTCCCT

TGCTTTCGCATCC TCCCGTTCAGC CTCCATCCCT
TCCCCTTCAGC TACGGCATCA CTCCATTCCCT
TCCCTTTCAGC TACGGCATCA CTCCATTCCCT
TCCCTTTCAGC TACGGCATCA CTCCATTCCCT
TCCCTTTCAGC TACGGCATCA CTCCATTCCCT
TCCCTTTCAGC TCCCTTCAGC CTCCATTCCT
TCCCTTTCAGC TCCCTTCAGC TCCCCTTCAGC TCCCTTCAGC TCCTTCAGC TCCCTTCAGC TCCTTCAGC TCCCTTCAGC TCCCTTCAGC TCCCTTCAGC TCCCTTCAGC TCCCTTCAGC TC
  TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCCT TGCCTTTGGC ATCGGATTGA CTCCATTCCT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTTG
  TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTC AATTTCTTTG GGTGTGTTCT GCCCCCACTG
CTTATAATGC TGGTGATCTA CATTAAGATC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA TGGACCACTC
   GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCCTG TGCTGGTTAC
 CAGGACCATOC CICCAGCOGG AGAICCATIOC AGCCAAGTCA CIGGCCATOA ITHIGOGOAI ITHIGGGOAI THIGGGOAI CAGTGGCATOC TGTGCATGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT ACACTTTTCA CAAAATTATC TCCAGGTATC TTCTCTGCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC TGGGGTACAG CCTGCTCTCG GTGTGGGCCT ATGATCTAGG CTCTCGCCTC TTCCAGGAGA AGATACAAAT CCACAAGAAA CAAAGAGGAC ACGGCTGGTT
 TICATTGTGA AAGATAGCTA CACCTCACAA GGAAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC CACGTACTA
GCTAATATGT ATGTGTCAGT AGTAGCACCA AGGATTGACA AATATTATA TGATCTATTC AGCTGCTTT ACTGTGTGA
TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTTG TTTTTAAAAG TCTGCCTTGT TTATGGTGGA
AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA ATAAAAGTTG
ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT TATTCGGCCG GCCATGGTGG
   CTCACACCTG TAATTCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCACG AGGTCAGGAG TTCAAAACCA GCCTGTCCAA
   TATAGTG -3' (FRAG. NO:_) (SEQ ID NO:11804)
   5'- GGGCAATTTG TTAGTTATCC GCCGCCACCA AGACGCGGCA CGGCGCCTGG ACCGGAGGGG CCCCGCGCGG GCGCAACTT
   TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCCGAGA CGGGCGGGC CGCGGGCCAA TGGGTGCCGC CTCTTGGCCG
   CGGGGGGCCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCCGAGG CTCAGAAGCG GCAGGCGGAG GCGCGGTCCG
   GGCGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCCC CTCGCCCGGC GCGCCTTCGG TAGGGGGCCC CCGGGGCCCA
  GGCGCTATGG CCATGCCCGG CGGGTCTCAC GGGGCTGCC CTCGCCCGGC GGGCCTTCGG TAGGGGGCGC CCGGGGCCCA
CCTGGCCCGG CCATGCTGCT GGAGACACAG GACGCGTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGGCC TTTCGGTGGC
CTGCGGCCAC CTGCTGCCTG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCCACCAA CTACTTCCTG GTGTCCCTGG
CTGCGGCCGA CGTGGCCGTG GGGCTCTTCG CCATCCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC TGACTTCTAC
GGCTGCCTCT TCCTCGCCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT CTTCAGCCTT CTGGCCGTGG CAGTCGACAG
ATACCTGGCC ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG AGGGGTCATT GCTGTCCTCT
GGGTCCTTGC CTTTGGCATC GGATTGACTC CATTCCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA
CCCTGGGATG GAACCACGAA TGAAAGCTGC TGCCTTGTGA AGTGTCTCTT TGAGAATGTG GTCCCCATGA GCTACATGGT
```

```
ATATTTCAAT TTCTTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTTC CTGGTGGCCT
ATATTICAAT TICTITGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTTC CTGGTGGCCT GCAGGCAGCT TCAGCGCACT GAGCTGATG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC CAAGTCACTG GCCATGATTG TGGGGATTT TGCCCTGTGC TGGTTACCTG TGCATGCTGT TAACTGTGTC ACTCTTTTCC AGCCAGCTCA GGGTAAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTCAC ATGCCAATTC AGTTGTCAAT CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA CTTTTCACAA AATTATCTCC AGGTATCTTC TCTGCCAAGC AGATGTCAAG AGTGGGGAATG GTCAGGCTG GGTACAGCCT GCTCTCGGTG TGGGCCTATG ATCTAGGCTC TCGCCTACCA CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTC ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC CTCTCTTTAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGAAA ATTACTGAAA CTATTTTAACTG TGCCAACGT GTGAACCAAT ATAATGCAAA TATATTTATG TGCCTTGTTT ATGGTGGAAA ATTACTGAAAA CTATTTTAAC TGTGAAACAGT GTGAACCAAT ATAATGCAAA TATCTTTTAACTTTAACAGGCA ATGGGAAAAAT AAAAGTTGAC TGTACTAAAAA TG-3'FRAG. NO: )(SEO ID NO: )11794)
  TACTTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAAA ATG-3'(FRAG. NO:_)(SEQ ID NO:11794)
  5'-CCCAGCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT CACGCGGCTG
  CCCCTCGCCC GGCGCGCCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT GCTGGAGACA CAGGACGCGC
TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTTCGGT GCCGCAAC GTGCTGGTG GCGCCGCGGT GGGCACGGCG
ACACTCTGC AGACGCCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGC CGACGTGGCC GTGGGGCTT TCGCCATCCC
CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCCTCGC CTGCTTCGTG CTGGTGTCCAC
CGCAGAGCTC CATCTTCAGC CTTCTGGCCG TGGCAGTCGA CAGATACCTG GCCATCTGTG TCCCGCTCAG GTATAAAAGT
TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCCT TGCCTTTGGC ATCGGATTGA CTCCATTCCT
GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCTTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTTG
GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTTG
TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTC AATTTCTTTG GGTGTGTTCT GCCCCCACTG
CTTATAATGC TGGTGATCTA CATTAAGAC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA TGGACCACTC
GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCCTG TGCTGGTTAC
CTGTGCATGC TGTTAACTGT GTCACTCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT GAATATGGCC
ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT ACACTTTTCA
CAAAATTATC TCCAGGTATC TTCTCTGCCA AGCAGATGC AAGAGTGGGA ATGGTCAGGC TGGGGTACAG CCTGCTCTCG
GTGTGGGCCT ATGATCTAGG CTCTCGCCTC TTCCAGGAGA AGATACAAAT CCACAAGAAA CAAAGAGGAC ACGCTGGTT
TTCATTGTGA AAGATAGCTA CACCTCACAA GGAAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC CACGTATCTA
GCTAATATGT ATGTGTCAGT AGTAGCACCA AGGATTGACA AAATATATTA TGACTCATTC ACCTGCTTTT ACTGGTGGGA
AAATTACTGA
TTATGCCAAC AGCCTTGAATG GATTCTAACA GACTCTTTTG TTTTTAAAAAG TCTGCCTTGT TTATGGTGGA
AAATTACTGA
TRATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTG TTTTAAAAG TCTGCCTTGT TATGGTGGA AAATTAATGA AACTATTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA ATAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT TATTCGGCCG GGCATGGTGG CTCACACCCTG TAATTCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCACG AGGTCAGGAG TTCAAAACCA GCCTGTCCAA
 TATAGTG (FRAG. NO: __) ( SEQ ID NO: 2424)
5'-GCGCGTCCTG-3' (FRAG. NO: 1671) (SEQ ID NO:11055)
5'-GCT GGG CCC CGG-3' (FRAG. NO: 1672) (SEQ ID NO:11056)
5'-CGG GTC GGG GCC CCC C-3' (FRAG. NO: 1673) (SEQ ID NO:11057)
5'-CGG GTC GGG GCC CCC C-3' (FRAG. NO: 1673) (SEQ ID NO:1105/)
5'-CGC GCC CGC G-3' (FRAG. NO: 1674) (SEQ ID NO:11058)
5'-GGC GCC GTG CCG CGT CTT GGT GGC GGC GG-3' (FRAG 972) (SEQ ID NO:10351)
5'-GTT CGC GCC CGC GGG GGG CCC CTC CGG TCC-3' (FRAG 973) (SEQ ID NO:10352)
5'-GTT CGC GCC CGC GGG GGC CCC CTC CGG TCC-3' (FRAG 974) (SEQ ID NO:10353)
5'-CGG GTC GGG GCC CCC CGC GGC C-3' (FRAG 975) (SEQ ID NO:10354)
5'-GCC TCG GGG CTG GGG CCC TGG TGG CCG GG-3' (FRAG 976) (SEQ ID NO:10355)
 5'-CCG CGC CTC CGC CTG CCG CTT CTG-3' (FRAG 977) (SEQ ID NO:10356)
 5'-GCT GGG CCC CGG GCG CCC CCT-3' (FRAG 978) (SEQ ID NO:10357)
 5'-CCC CTC TTG CTC GGG TCC CCG TG-3' (FRAG 979) (SEQ ID NO:10358)
 5'-ACAGCGCGTCCTGTGTCTCCAGCAGCATGGCCGGGCCAGCTGGGCCCC-3' (FRAG 980) (SEQ ID NO:10359)
 5'-BCBGCGCGTCCTGTGTCTCCBGCBGCBTGGCCGGGCCBGCTGGGCCCC-3' (FRAG 981) (SEQ ID NO:10360)
 Human Adenosine A3 Receptor Nucleic Acid and Antisense Oligonucleotide Fragments
 5'-ACA GAG CAG TGC TGT TGT TGG GCA TCT TGC CTT CCC AGG G BCB GBG CB TGC TGT TGT TGG GCB TCT TGC CTT CCC
ATGGGCAGAG GTGGCTGGGC TGGTGACCCT AAGTGTGTCT CCTGCCTTTA TTCTCTCTAG TGGGTTATTC TTTCATGTGG
TATCTTGCCT ACAGCATGCT GTGTTTGGAC ACAAACCCCT TCCTGGTT TCTCTGACC AGCTGAGATG GACTGATTCC
AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTTTGCAGT ATTTAACTAA GGTTCAAAGA GTGCTATATA
GTGAGAAAGG CTTCTTTTT TTTTTTTTT TTTTTTTGCA GAGTGCTGCC TCCTAGAAAT TTCTCTTGGT AACTTCCTTC
TCTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT TTATGAGGGA CACATTGGAG GCCGATGAAG CTTTTCAAGT
TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAATT CAGTTGGAGA GGACTGCCCT
TTTTAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTTGGTAA GACTTGGATC
AACTTGGGAT ACAGGGTGGG GGTCGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA GGACCCTGAT GAGCCCCAGG CAGAGGCGTC TCCCTTATGC CCCACTCTGA AGTGTTTGTT AGTAAACACC AGAACGCCAT TGTTGTTACT
GAGCCCCAGG CAGAGGGGTC TCCCTTATGC CCCACTCIGA AGTGTTTGTT AGIAAACACC AGAACGCCAT TGTIGITIACT
GCTGAATTIT ATTTTGGGCT GTACATATTI AGATGCTTAA GGTAAAAATGA ATAAAGCCCT CAAGCCACTG TGTGGGTTTG
GGTCCAAGIG TTCCTTCTTG CTGCCTCTCT ACACGCCTG GTTAAAATAA TCCCTTTGGA TGGTGCTGAG AAGCACCTGA
ACCAAGTGGG TCCCCAAATA ACAATGGCGT GCAAGTGTCT GGTTCCCAGA AGTTGGTGAC TAGGTAAGCA GCTTCAGGGA
GAGGGGGCTG ATTCCCAGAC AGTCGCCTGT TCCTGCGGGG ATGGGGCTGA GGCTTGGGGA ATGTGGGCAG GAGGATATGC
CATTTGATTC TGTTGCACAC GTTCTTTTCC CTTCTTTCTG TATGTCTGGT CATTCTGCTA TTCTGTCGTT CCTCACATAG
GTTGGACCAT GGCCGGCTGC CAGCATAAGT GCCAGTGTGA TTTTTGCTAGG TGTGAGCTGA GAAAGAAGG TGAGGCTAA
GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TITTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTTTGCTGCA AAGGTTGGG ACGGTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA GGCTGCCAC AAAGTCTCTT TTTTGTTCCT CTGCTTCTCC CGTTTGCCTC CTTATCATGA GATCTTTTTGCCT CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCCAGCT CTGCTCCCAC CTGATCCTGC ACTGTCCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCTT TCCATCTTTT
TGCTGAGAGT TCTGAGCTCT GTACTTCCTC TTGGCCCATC TCACTTCCTG AAACACCCCT GAAGAGGGTT GCTTATCTTG
ATGGAACTCA AAAAGCCAAA AAGCTGCAGG CAGAGGCGTT GAGGACATCT GTTTGGGGAA CTAAGAGCAG CAGCACTTTC
AGATTCAGTC CATATAGAGC TOTCCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGTGACC CACCTGTGAT GAGCCCTTTC TAAGGAGAAG GGTTTCCAAG AGATCACCCC ACCAGAAAAG GGTAGGAATG AGCAAGTTGG
```

GAATTTTAGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGCTAGGCCC ACTGGCCCTA CAGACGGATC TIGCTGGCTC ACCTGTCCCT GTGGAGGTTC CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT CATTGGCCAA
TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGG GCAATAGTGG GCAACGTGCT GGTCATCTGC GTGGTCAAGC
TGAACCCCAG CCTGCAGACC ACCACCTTCT ATTTCATTGT CTCTCTAGCC CTGGCTGACA TTGCTGTTGG GGTGCTGGTC
ATGCCTTTTGG CCATTGTTGT CAGCCTGGGG ATCACAATCC ACTTCTCACAG CTGCCTTTTT ATGACTTGCC TACTGCTAGC

TGTTACCTACAG CCTCACTTGTT CAGCCTGGGC ATCACAATCC ACTTCTCACAG CTGCCTTTTT ATGACTTGCC TACTGCTAGC

TGTTACCTACAG CTGCTTCACAG CTGCCTTAGTAGCC CTGAGGTAGC

TGTTACCTACAG CTGCTTCACAG CTGCAGTAGCC

TACTGCTTACAG CTGCTTCACAG CTGCAGTAGCC

TACTGCTTACAG

TGTTACCTACAG CTGCTTCACAG

TGTTACCTACAG

TC AGECTITIGE CCAPTGITGI CAGECTIGGG ATCACAATICE ACTICIACAG CIGCCTITTI ATGACTIGE TACTGETAGE
CTITACCCAC GCCICCATCA TGTCCTTGCT GGCCATCGCT GTGGACCGAT ACTTGCGGGT CAAGCTTACC GTCAGGTAGC
CTGCGGCGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGC CTGCTGAATT TTATTTTTGGA
CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAAGCC CTCAAGCCAC TGTGTGGGTT GGGTCCAAGT GTTCCTTGCT
GCTGCCTCTC TAACACGCCT GGTTAAAATA ATCCCTTTGG ATGGTGCTGA GAACCAAGTGG GTCCCCAAAT AACTATGGCG TGCAAGTGTC TGGTTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGGA GAGGGGCTGA TTCCCAGACA GTCGCCTGTT CCTGCTGGGA TGGGGCTGAG GCTTGGGGAA TGTGGGCAGG AGGATATGCC ATTTGATTCT GTTGCACACG TTCTTTTCCC TTCTTTCTGT ATGTCTGGTC ATTCTGCTAT TCTGTCGTTC CTCACATAGG TTGGACATIG GCCGGCTGCC AGCATAAGTO CCAGTGTGAT TTTGCTAGGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTTTGCTCCA AAGGCTGGGT AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTTTGCTCCA AAGGTGGGT
ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA GGCTGCCACC
AAAGTCTCTT TTTTGTTCCT CTGCTTCTCC CGTTTGCCTC CTTATCATGA GATCTTTTTG CTAAGCTGGC AGAAAGATTG
CATAATCAGT GCTTCCAGCT CCGCTCCCAC CTGATCCTGC ACTGTCCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA
ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCTT TCCATCTTT TGCTGAGAGT TACTGAGCTC
TGTACTTCCT CTTGGCCCAT CTCACTTCCT GAAACACCCC TGAAGAGGGGT TGCTTATCTT GATGGAACTC AAAAAGCCAA
AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTTTGGGGA ACTAAGAGGA GCAGCACTTT CAGATTCAGT CCATATAGAG
CTGTCCTACA GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGGAAGTGAC CCACCTGTGA TGAGCCCTTT
CTAAGGAGAA GGGTTTCCAA GAGATCACCC CACCAGAAAA GGGTAGGAACT GAGCAAGTTG GGAATTTTAG ACTGTCACTG
CACATGGACC TCTGGGGAAGA CGCTTGGCGA GAGCTTGGCCC ACAGAACA CAGCAGGTT CTTGCTGGCT CACCTGTCCCC CACATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTTGCTGGCT CACCTGTCCC TGTGGAGGTT CCCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG CGAATTCGGG GGACATCTGT TTGGGGAACT AAGAGCAGCA GCACTTTCAG ATTCAGTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG AAGTGACCCA CCTGTGATGA GCCCTTTCTA AGGAGAAGGG TTTCCAAGAG ATCACCCCAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTTAGACT GTCACTGCAC ATGGACCTCT GGGAAGACGT CTGGCGAGAG CTAGGCCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT GGAGGTTCCC CTGGGAAGGC AAGATGCCCA ACAACAGCAC TGCTCTGTCA TTGGCCAATG TTACCTACAT CACCATGGAA ATTTTCATTG GACTCTGCGC CATAGTGGGC AACCTGCTGG
TCATCTGCGT GGTCAAGCTG AACCCCAGCC TGCAGACCAC CACCTTCTAT TTCATTGTCT CTCTAGCCCT GGCTGACATT
GCTGTTGGGG TGCTGGTCAT GCCTTTGGCC ATTGTTGTCA GCCTGGGCAT CACAATCCAC TTCTACAGCT GCCTTTTTAT GACTITGCCTA CTGCTTATCT TTACCCACGC CTCCATCATG TCCTTGCTGG CCATCGCTG TGACCGATAC TTGCGGGTCA
AGCTTACCGT CAGATACAAG AGGGTCACCA CTCCACAGAAG AATATGGCTG GCCCTGGGCC TTTGCTGGCT GGTGTCATTC
CTGGTGGGAT TGACCCCCAT GTTTGCTGG AACATGAAC TGACCTCAGA GTACCACAGA AATGTCACCT TCCTTTCATG
CCAATTTGTT TCCGTCATGA GGATGGACTA CATGGTATAC TTCAGCTTCC TCACCTGGAT TTTCATCCCC CTGGTTGTCA AGGAGATGIT GGGAACAGAA GAAATAAACT GAGTTTAAGG GGGACTTAAA CTGCTGAATT C GAATTCCCAG ATGGGCAGAG AGATAAAGAA AACAATTACA GTAGAAACAT TTATGAGGGA CACATTGGAG GCCGATGAAG CTTTTCAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAATT CAGTTGGAGA GGACTGCCCT TTTTAATGTC
TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTTGGTAA GACTTGGATC AACTTGGGAT AAAAGCCAAA AAGCTGCAGG CAGAGGCGTT GAGGACATCT GTTTGGGGAA CTAAGAGCAG CAGCACTTTC AGATTCAGTC CATATAGAGC TGTCCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGTGACC CACCTGTGAT CATATAGAGC TGTCCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGIJACC CACUIGIGAT GAGCCCTTTC TAAGGAGAAG GGTTTCCAAG AGATCACCC ACCAGAAAAG GGTAGGAATA AGCAAGTTGG GAATTITACG CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGCTAGGCCC ACTGGCCCTA CAGACGGATC TTGCTGGCTC ACCTGTCCCT GTGGAGGTTC CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCATCTGC GTGGTCAAGC TGAACCCCAG CCTGCAGACC ACCACCTTCT ATTTCATTGT CTCTCTAGCC CTGGCTGACA TTGCTGTTGG GGTGCTTAT CTTTACCAC CTTTACCAC CTGCCTTTTT ATGACTTGCC TACTGCTTAT CTTTACCAC

```
GCCTCCATCA TGTCCTTGCT GGCCATCGCT GTGGACCGAT ACTTGCGGGT CAAGCTTACC GTCAGGTAGC CTGCGGCGTG
GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AGCCCAGAGC CTGCTGAATT TTATTTTGGA CTGTACATAT
TTAGATGCTT AAGGTAAAAA TGATAAAAGCC CTCAAGCCAC TGTGTGGGTT GGGTCCAAGT GTTCCTTGCT GCTGCCTCTC
TAACACGCCT GGTTAAAATA ATCCCTTTGG ATGGTGCTGA GAAGCACCTG AACCAAGTGG GTCCCCAAAT AACTATGGCG
TGCAAGTGTC TGGTTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGGA GAGGGGCTGA TTCCCAGACA GTCGCCTGTT
CCTGCTGGGA TGGGGCTGAG GCTTGGGGAA TGTGGGCAGG AGGATATGCC ATTTGATTCT GTTGCACACG TTCTTTTCCC
TTCTTTCTGT ATGCTCGTC ATTCTGCTAT TCTGTCCTTC CTCACATAGG TTGGACATTG GCCGGCTGC AGCATAAGTG
 CCAGTGTGAT TTTGCTAGGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG
 TTTTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTTTGCTCCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT
  TITTGTTCCT CTGCTTCTCC CGTTTGCCTC CTTATCATGA GATCTTTTTG CTAAGCTGGC AGAAAGATTG CATAATCAGT
 GCTTCCAGCT CCGCTCCCAC CTGATCCTGC ACTGTCCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCTT TCCATCTTTT TGCTGAGAGT TACTGAGCTC TGTACTTCCT CTTGGCCCAT CTCACTTCCT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAACTC AAAAAGCCAA AAAGCTGCAG
CTTGGCCCAT CTCACTTCCT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAACTC AAAAAGCCAA AAAGCTGCAG
GCAGAGGGCT TGAGGACATC TGTTTGGGGA ACTAAGAGCA GCAGCACACTT CAGATTCAGT CCATATAGAG CTGTCCTACA
GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGGAAGTGAC CCACCTGTGA TGAGCCCTTT CTAAGGAGAA
GGGTTTCCAA GAGATCACCC CACCAGAAAA GGGTAGGAAT GAGCAAGTTG GGAATTTTAG ACTGTCACTG CACATGGACC
TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTTGCTGGCT CACCTGTCC TGTGGAGGTT
CCCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG CGAATTCGGG GGACATCTGT TTGGGGAACT AAGAGCAGCA
GCACTTTCAG ATTCAGTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG
AAGTGACCCA CCTGTGATGA GCCCTTTCTA AGGGACAGAGG TTTCCCAGAGAA CTAGGCCCAC CAGAAAAGGG TAGGAATGAG
CAAGTTGGGGA ATTTTAGACTT GTCACTGCAC ATGGACCTTC GGGAAGAACGT CTGGCCGAGAG CTAGGCCCAC TGGCCCTACA
TGACCCCCAT GTTTGGCTGG AACATGAAAC TGACCTCAGA GTACCACAGA AATGTCACCT TCCTTTCATG CCAATTTGTT TCCGTCATGA GGATGGACTA CATGGTATAC TTCAGCTTCC TCACCTGGAT TTTCATCCCC CTGGTTGTCA TGTGCGCCCAT
GGGAACAGAA GAAATAAACT GAGTTTAAGG GGGACTTAAA CTGCTGAATT C -3' (FRAG. NO:1675) (SEQ ID NO:12376)
 5'- CGAATTCGGG GGACATCTGT TTGGGGAACT AAGAGCAGCA GCACTTTCAG ÀTTCAGTCCA TATAGAGCTG TCCTACAGCA
 TICTGGAAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG AAGTGACCCA CCTGTGATGA GCCCTTTCTA AGGAGAAGGG
TTTCCAAGAG ATCACCCCAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTTAGACT GTCACTGCAC ATGGACCTCT
GGGAAGACGT CTGGCGAGAG CTAGGCCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT GGAGGTTCCC
 CTGGGAAGGC AAGATGCCCA ACAACAGCAC TGCTCTGTCA TTGGCCAATG TTACCTACAT CACCATGGAA ATTTTCATTG
 GACTCTGCGC CATAGTGGGC AACGTGCTGG TCATCTGCGT GGTCAAGCTG AACCCCAGCC TGCAGACCAC CACCTTCTAT TTCATTGTCT CTCTAGCCCT GGCTGACATT GCTGTTGGGG TGCTGGTCAT GCCTTTGGCC ATTGTTGTCA GCCTGGGCAT CACAATCCAC TTCTACAGCT GCCTTTTAT GACTTGCCTA CTGCTTATCT TTACCCACGC CTCCATCATG TCCTTGCTGG
GAGCAGAGAA CCTGCTCTCG GAGGATGCCT AGGAGATGTT GGGAACAGAA GAAATAAACT GAGTTTAAGG GGGACTTAAA
 CTGCTGAATT C -3' (FRAG. NO:_) (SEQ ID NO:11808)
 5'- CTGCTGAATT TTATTTTGGA CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAGCC CTCAAGCCAC TGTGTGGGTT
 GGGTCCAAGT GITCCTTGCT GCTGCCTCTC TAACACGCCT GGTTAAAATA ATCCCTTTGG ATGGTGCTGA GAAGCACCTG
AACCAAGTGG GTCCCCAAAT AACTATGGCG TGCAAGTGTC TGGTTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGGA
AACCAAGTGG GTCCCCAAAT AACTATGGCG TGCAAGTGTC TGGTTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGGA
GAGGGCTGA TTCCCAGACA GTCGCCTGTT CCTGCTGGGA TGGGGCTGAG GCTTGGGGAA TGTGGGCAGG AGGATATGCC
ATTTGATTCT GTTGCACACG TTCTTTTCCC TTCTTTCTT ATGTCTGTC ATTCTGCTAT TCTGCTTC CTCACATAGG
TTGGACATTG GCCGGCTGCC AGCATAAGTG CCAGTGTGAT TTTGCTAGGG TGTGAGCTGA GAAAGAGGG TGGAGGCTAA
GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAATCTTTCG TTATCCCTTT GACCAAGGAT
CTTTGCTCCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGCCT
AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTTCCT CTGCTTCCC CGTTTGCCTC CTTATCATGA GATCTTTTTG
CTAAGCTGGC AGAAAGATTG CATAATCAGT GCTTCCAGCT CCGCTCCCAC CTGATCCTGC ACTGTCCTCT TCCATCTTTT
```

TGCTGAGAGT TACTGAGCTC TGTACTTCCT CTTGGCCCAT CTCACTTCCT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAACTC AAAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTTTGGGGA ACTAAGAGCA GCAGCACTTT CAGATTCAGT CCATATAGAG CTGTCCTACA GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGGAAGTGAC CCACCTGTGA TGAGCCCTTT CTAAGGAGAA GGGTTTCCAA GAGATCACCC CACCAGAAAA GGGTAGGAAT GAGCAAGTTG GGAATTTTAG ACTGTCACTG CACCATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTTGCTGGCT CACCTGTCCC TGTGGAGGTT CCCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG -3' (FRAG. NO:_) (SEQ ID NO:11807) 5- GAATTCCCAG ATGGGCAGAG GTGGCTGGGC TGGTGACCCT AAGTGTGTCT CCTGCCTTTA TTCTCTCTAG TGGGTTATTC TTTCATGTGG TATCTTGCCT ACAGCATGCT GTGTTTGGAC ACAAACCCCT TTCCTTGGTT TCTCTGACCC AGCTGAGATG GACTGATTCC AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTTGCAGT ATTTAACTAA GGTTCAAAGA AACTTCCTTC TCTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT TTATGAGGGA CACATTGGAG GCCGATGAAG CTTTTCAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAATT CAGTTGGAGA GGACTGCCCT TTTTAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATG GATTTGGTAA
GACTTGGATC AACTTGGGAT ACAGGGTGGG GGTCGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA GGACCCTGAT GAGCCCAGG CAGAGGCGTC TCCCTTATGC CCCACTCTGA AGTGTTTGTT AGTAAACACC AGAACGCCAT
TGTTGTTACT GCTGAATTTT ATTTTGGGGT GTACATATTT AGATGCTTAA GGTAAAAATG ATAAAGCCC CAAGCCACT
TGTGGGTTTG GGTCCAAGTG TTCCTTCTTG CTGCCTCTCT AACACGCCTG GTTAAAAATAA TCCCTTTGGA TGGTGCTGAG
AAGCACCTGA ACCAAGTGGG TCCCCAAATA ACAATGGCGT GCAAGTGTCT GGTTCCCAGA AGTTGGTGAC TAGGTAAGCA GCTTCAGGGA GAGGGGGCTG ATTCCCAGAC AGTCGCCTGT TCCTGCGGGG ATGGGGCTGA GGCTTGGGGA ATGTGGGCAG GAGGATATGC CATTTGATTC TGTTGCACAC GTTCTTTTCC CTTCTTTCTG TATGTCTGGT CATTCTGCTA TTCTGTCGTT CCTCACATAG GTTGGACATT GGCCGGCTGC CAGCATAAGT GCCAGTGTGA TTTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTTGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT CTITGCTGCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTTCCT CTGCTTCTCC CGTTTTGCTC CTTATCATGA GATCTTTTTTG CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCCAGCT CTGCTCCCAC CTGATCCTGC ACTGTCCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TCGCTCTTT TCCATCTTTT TGCTGAGAGT TCTGAGCTCT GTACTTCCTC TTGGCCCATC TCACTTCCTG AAACACCCCT GAAGAGGGTT GTCAGGTAGC CTGCGGCGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGC -3' (FRAG. NO:_) (SEQ ID NO:11806) 5'-CGAATTCGGG GGACATCTGT TTGGGGAACT AAGAGCAGCA GCACTTTCAG ATTCAGTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG AAGTGACCCA CCTGTGATGA GCCCTTTCTA AGGAGAAGGG
TTTCCAAGAG ATCACCCCAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTTAGACT GTCACTGCAC ATGGACCTCT
GGGAAGACGT CTGGCGAGAG CTAGGCCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT GGAGGTTCCC
CTGGGAAGGC AAGATGCCCA ACAACAGCAC TGCTCTGTCA TTGGCCAATG TTACCTACAT CACCATGGAA ATTTTCATTG GACTCTGCGC CATAGTGGGC AACGTGCTGG TCATCTGCGT GGTCAAGCTG AACCCCAGCC TGCAGACCAC CACCTTCTAT TICATIGICI CICTAGCCCT GGCTGACATT GCTGTTGGGG TGCTGGTCAT GCCTTTGGCC ATTGTTGTCA GCCTGGGCAT CACAATCCAC TICTACAGCT GCCTTTTAT GACTTGCCTA CTGCTTATCT TTACCCACGC CTCCATCATG TCCTTGCTGG CCATCGCTGT GGACCGATAC TTGCGGGTCA AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACCAGAAG AATATGGCTG GCCCTGGGCC TTTGCTGGCT GGTGTCATC CTGGTGGGAT TGACCCCCAT GTTTGGCTGG AACATGAAAC TGACCTCAGA TAGTTGACTT ACTGACAAAA GGCTCTAGTT GGGCTGAACA TGTGTGTGGT GGTGACTCAT TTCCATGCCA TTGTGGAATT GAGCAGAGAA CCTGCTCTCG GAGGATGCCT AGGAGATGTT GGGAACAGAA GAAATAAACT GAGTTTAAGG GGGACTTAAA GAGCAGAAA CCTGCTCTCG GAGGAGCCT AGGAGATGTT GGGAACAGAA GAATAAACT GAGTTAAGG GGGACTAAA
CTGCTGAATTC-3' (FRAG. NO: _) (SEQ ID NO:11796)

5'-TTCCCAG ATGGGCAGAG GTGGCTGGGC TGGTGACCCT AAGTGTGTCT CCTGCCTTTA TTCTCTCTAG TGGGTTATTC
TTTCATGTGG TATCTTGCCT ACAGCATGCT GTGTTTGGAC ACAAACCCCT TTCCTTGGTT TCTCTGACCC AGCTGAGATG
GACTGATTCC AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTTGCAGT ATTTAACTAA GGTTCAAAGA
GTGCTATATA GTGAGAAAGAC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTTTGCAGT ATTTAACTAA GGTTCAAAGA
AACTTCCCTTC TCTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT TTATGAGGGA CACATTGGAG GCCGATGAAG AACTICCTIC ICTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT TITATGAGGGA CACATTGGAG GCCGATGAAG
CTITICAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAATT CAGTTGGAGG
GGACTGCCCT TITITAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTTGGTAA
GACTTGGATC AACTTGGGAT ACAGGGTGGG GGTCGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA
GGACCCTGAT GAGCCCCAGG CAGAGGCGTC TCCCTTATGC CCCACTCTGA AGTGTTTGTT AGTAAAACAC AGAACGCCAT
TGTTGTTTACT GCTGAATTT ATTTTGGGCT GTACATATTT AGATGCTTAA GGTAAAAATA TCCCTTTGGA TGGTGCTGAG
AACACCCTGA AACAACTCCT ACACCGCCTG GTTAAAATAA TCCCTTTGGA TGGTGCTGAGA
AACACCCTGA AACAACTCCT ACCACCTG GTTAAAATAA TCCCTTTGGA TGGTGCTGAGA AAGCACCTGA ACCAAGTGGG TCCCCAAATA ACAATGGCGT GCAAGTGTCT GGTTCCCAGA AGTTGGTGAC TAGGTAAGCA GCTTCAGGGA GAGGGGGCTG ATTCCCAGAC AGTCGCCTGT TCCTGCGGGG ATGGGGCTGA GGCTTGGGGA ATGTGGGCAG

```
TCCATCTTTT TGCTGAGAGT TCTGAGCTCT GTACTTCCTC TTGGCCCATC TCACTTCCTG AAACACCCCT GAAGAGGGTT
TCCATCITIT TGCTGAGAGT TCTGAGCTCT GTACTTCCTC TTGGCCCATC TCACTTCCTG AAACACCCCT GAAGAGGGTT GCTTATCTTG ATGAACTCA AAAAGCCAAA AAGCTGCAGG CAGAGGCGT GAGGACATCT GTTTGGGGAA CTAAGAGCAG CAGCACTTTC AGATTCAGTC CATATAGAGC TGTCCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGTGACC CACCTGGAT GAGCCCTTTC TAAGGAGAAG GGTTTCCAAG AGATCACCCC ACCAGAAAAG GGTAGGAATG AGCAAGTTGG GAATTTTAGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG GCTAGGCCC ACTGCCCTA CAGACGGATC TTGCTGGCCA TGTTACCTAC TCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCATCTGC GTGGTCAAGC TGAACCCCAG CCTGCAGACC ACCACCTTCT ATTTCATTGT CTCTCTAGCC TGGCTGACA TTGCTGTTGG GTGCTGGTC ATGCCTTTGT CAGCCTTGGC CATCTTTTTCATTGC TCTCTTAGCC TGGCTGACA TTGCTGTTGC GTGCTGATCTGC TCACCATCA TGTCCTTGTC GCCTTGACA TTGCTGTTGC TATGCTTAT CTTTACCCAC CCTCCATCA TGTCCTTGCT GGCCATAGTCG GTGACCGAT ACTTGCCGGT CAACATCC ACTTCTACAG CTGCCTTTTT ATGACTTGCC TCACGCTAGC CTGCCGGCAT ACTTGCCGGCT CAACATCA AGCCAGAGC-3' (FRAG. NO: ) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \
  GTCAGGTAGC CTGCGGCGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AGCCAGAGC-3' (FRAG. NO: ) (SEQ
  5'-GGGCAATTTG TTAGTTATCC GCCGCCACCA AGACGCGGCA CGGCGCCTGG ACCGGAGGGG CCCCGCGGG GCGCGAACTT
  TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCCGAGA CGGGCGGCCG CGCGGGCCAA TGGGTGCCGC CTCTTGGCCG
  CGGGGGGCCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCCGAGG CTCAGAAGCG GCAGGCGGAG GCGCGGTCCG
GGCGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCC CTCGCCCGGC GCGCCTTCGG TAGGGGGCGC CCGGGGCCCA
GCTGGCCCG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC
GGGCAACGTG CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCCACCAA CTACTTCCTG GTGTCCCTGG
CTGCGCCCGA CGTGGCCGTG GGGCTCTTCG CCATCCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC TGACTTCTAC
GGCTGCCTCT TCCTCGCCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT CTTCAGCCTT CTGGCCGTGG CAGTCGACAG
ATACCTGGCC ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGAACAG AGGGGTCATT GCTGTCCTCT
GGGTCCTTGC CTTTGGCATC GGATTGACTC CATTCCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA
CCCTGGGATG GAACCACGAA TGAAAGCTGC TGCCTTGTGA AGTGTTCTT TGAGAATGTG GTCCCCATGA GCTACATGGT
ATATTTCAAT TTCTTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTAACAT TAAGATCTTC CTGGTGGCCT
GCCATGATTG TGGGCACTG GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC
GCCATGATTG TGGGGATTT TGCCCTGTGC TGCTTTGTCAC ATGCTGTCT AACTGTGTC ACTCTTTTCC
GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTCAC ATGCCAATTC AGTTGTCAAT CCCATTGCT
ATGCTTACCG GAACCAGAC TTCCGCTACA CTTTTCACAA AATTATCTC AGGTATCTT TCTGCCAAGC AGATGCCAAG
AGTGGGAATG GTCAGGCTG GGTACAGCCT GCTCTGGTG TGGGCCTATG ATCAGGCTC TCGCCTCTTC CAGGAGAAGA
AGTGCGAAGC
CTCTCTTGAG CACTCCCTG GAGCTACCAC GTTCTCTGGTT TAACTGTATC TCTGCCCAAGC AGATGTCAAG
AGTGGGAATG GTCAGGCTG GGTACAGCCT GCTCTGGGT TGGGCCTATG ATCAGGCTC TCGCCTCTTC CAGGAGAAGA
ATGACCTACAC CTCCACAAGAA AAGAAACAA AGAGGACACG GCTGGTTTTC ATTGTGAAAG ATAGCTACAC CTCCACAAGGA AATGGACTGC
CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATTGTAAG ATCAGGCTC CTCCACAAGGA AATGGACTGC
CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATTGTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA
  GGCGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCCC CTCGCCCGGC GCGCCTTCGG TAGGGGGCGC CCGGGGCCCA
 CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA
TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA TTCTAACAGA CTCTTTTGTT
TTTAAAAGTC TGCCTTGTTT ATGGTGGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAA
  TACTITITAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAAA ATG-3'(FRAG. NO: )(SEQ ID NO:11794)
  5'-GBG CB TGC-3' (FRAG. NO:1676) (SEQ ID NO:11060)
  5'-TTG TTG GGC-3' (FRAG. NO:1677) (SEQ ID NO:11061)
5'-TGC CTT CCC BGG G-3' (FRAG. NO:1678) (SEQ ID NO:11062)
 5'-TGC CTT CCC BGG G-3' (FRAG. NO:1078) (SEQ ID NO:11062)
5'-GTT GTT GGG CAT CTT GCC-3' (FRAG. NO:1679) (SEQ ID NO:9372)
5'-GTG GGC CTA GCT CTC GCC-3' (GRAG. NO:1680) (SEQ ID NO:9374)
5'-ACA GAG CA TGC TGT TGT TGG GCA TCT TGC CTT CCC AGG G-3' (FRAG 982) (SEQ ID NO:10361)
5'-BCB GBG CB TGC TGT TGT TGG GCB TCT TGC CTT CCC BGG G-3' (FRAG 983) (SEQ ID NO:10362)
5'-CCC TITT TCT GGT GGG GTG-3' (FRAG 984) (SEQ ID NO:10363)
5'-GTG CTG TTG TTG GGC-3' (FRAG 985) (SEQ ID NO:10364)
5'-TTT CTT CTG TTC CC-3' (FRAG 986) (SEQ ID NO:10365)
  5'-CCC TTT TCT GGT GGG GTG-3' (FRAG 987) (SEQ ID NO:10366)
  5'-GTG CTG TTG TTG GGC-3' (FRAG 988) (SEQ ID NO:10367)
  5'-TTT CTT CTG TTC CC-3' (FRAG 989) (SEQ ID NO:10368)
 Human IgE Receptor (Nucleic Acid and Antisense Oligonucleotide Fragments
 5-TTT CCC CTG GGT CTT CC CTG CTC TTT TTT C ATT TGC TCT CCT ATT ACT TTC TGT GTC CAT TTT TTC ATT AAC CGA GCT GT BTT TGC TCT CCT BTT BCT TTC TGT GTC CBT TTT TTC BTT BBC CGB GCT GT-3' (FRAG. NO:1681) (SEQ ID NO:11063)
  5'-CCC CTG GG-3' (FRAG. NO:1682) (SEQ ID NO:11064)
  5'-GCTCTCCTBTT-3' (FRAG. NO:1683) (SEQ ID NO:11065)
  5'-CBTTBBCCGBGCTG-3' (FRAG. NO:1684) (SEQ ID NO:11066)
  5'-TTT CCC CTG GGT CTT CC-3' (FRAG 990) (SEQ ID NO:10369)
  5'-CTC CTG CTC TTT TTT C-3' (FRAG 991) (SEQ ID NO:10370)
  ATTTGCTCTCATTACTTTCTGTGTCCATTTTTTCATTAACCGAGCTGT (FRAG 992) (SEQ ID NO:10371)
  BTTTGCTCTCTBTTBCTTTCTGTGTCCBTTTTTTCBTTBBCCGBGCTGT (FRAG 993) (SEQ ID NO:10372)
 Human Fc-(Receptor CD23 Antigen (IgE Receptor)
  Nucleic Acid and Antisense Oligonucleotide Fragments
  5'-GCC TGT GTC TGT CCT CCT GCT TCG TTC CTC TCG TTC CTG GCT GCC GGT GCC G GTC CTG CTC CGG GCT GTG G
```

GGC TGT GGC CGT GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC TCT CTG AAT ATT GAC CTT CCT CCA TGG CGG TCC TGC TTG GAT TCT CCC GA TCT CTG BBT BTT GBC CTT CCT CCB TGG CGG TCC TGC TTG GBT TCT CCC GB-3'(FRAG 1685)(SEQ ID NO:11067)

5'-GT CCT CCT-3' (FRAG 1686) (SEQ ID NO:11068) 5'-TGT GTC TGT CCT CC-3' (FRAG 1687) (SEQ ID NO:11069) 5'-GTG GCC CTG GC-3' (FRAG 1688) (SEQ ID NO:11070)

5'-CGT GGT TGG GG-3' (FRAG 1689) (SEQ ID NO:11071) 5'-TCT CTG BBT BTT GBC C-3' (FRAG1690) (SEQ ID NO:11072)

```
5'-GCC TGT GTC TGT CCT CCT-3' (FRAG 994) (SEQ ID NO:10373)
5'-GCT TCG TTC CTC TCG TTC-3' (FRAG 995) (SEQ ID NO:10374)
         5'-GCT CCT TCG TCC-3' (FRAG 999) (SEQ ID NO:10374)
5'-GTC CTG CTC CGG GCT GCG G-3' (FRAG 997) (SEQ ID NO:10375)
5'-GTC GTG GCC CTG GCC GGC GGC GGG GGG CGG GGG CTC CCC TGG-3' (FRAG 998) (SEQ ID NO:10377)
5'-CCT TCG CTG GCT GCC GGC GGC TGC-3' (FRAG 999) (SEQ ID NO:10378)
5'-GGG TCT TGC TCG GGC TCTT TCG GCG TGT-3' (FRAG 1000) (SEQ ID NO:10379)
         5'-GGC CGT GGT TGG GGG TCT TC-3' (FRAG 1001) (SEQ ID NO:10380)
5'-GCT GCC TCC GTT TGG GTG GC (FRAG 1002) (SEQ ID NO:10381)
          5'-TCT CTG AAT ATT GAC CTT CCT CCA TGG CGG TCC TGC TTG GAT TCT CCC GA (FRAG 1003) (SEQ ID NO:10382)
          5'-TCT CTG BBT BTT GBC CTT CCT CCB TGG CGG TCC TGC TTG GBT TCT CCC GB (FRAG 1004) (SEQ ID NO:10383)
          Human IgE Receptor (Subunit Nucleic Acid and Antisense Oligonucleotide Fragments
5'- GCC TITT CCT GGT TCT GTT GTT TTT GGG GTT TGG CTT ACA GTA GAG TAG GGG ATT CCA TGG CAG GAG CCA TCT
          TCT TCA TGG ACT CC TTC AAG GAG ACC TTA GGT TTC TGA GGG ACT GCT AAC ACG CCA TCT GGA GC BCB GTB GBG TBG
          GGG BTT CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC GTT GTT TTT GGG GTT TGG CTT GCC TTT CCT GGT TCT CTT BCB GTB GBG TBG GGG BTT CCB TGG CBG
          GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC-3'
          (FRAG. NO: 1691) (SEQ ID NO:11073)
          5'-TGG BCT CC -3' (FRAG. NO: 1692) (SEQ ID NO:11074)
5'-CCB TCT GGB-3' (FRAG. NO: 1693) (SEQ ID NO:11075)
         5'-CCB TCT GGB-3' (FRAG. NO: 1693) (SEQ ID NO:11075)
5'-CT GCT BBC BCG-3' (FRAG. NO: 1694) (SEQ ID NO:11076)
5'-GTT TTT GGG GTT TG-3' (FRAG. NO: 1695) (SEQ ID NO:11077)
5'-GCC TTT CCT GGT TCT CTT GTT GTT TTT GGG GTT TGG CTT-3' (FRAG. NO:1005) (SEQ ID NO:10384)
5'-ACAGTAGAGTAGGGGATTCCATGGCAGGAGCCATCTTCTTCATGGACTCC-3'(FRAG.NO:1006)(SEQ ID NO:10385)
5'-TTC AAG GAG ACC TTA GGT TTC TGA GGG ACT GCT AAC ACG CCA TCT GGA GC-3' (FRAG. NO:1007) (SEQ ID NO:10386)
5'-BCB GTB GBG TBG GGG BTT CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB
25
          GGG-3' (FRAG. NO:1008) (SEQ ID NO:10387)
         5'-BCT GCT BBC BCG CCB TCT GGB GC-3' (FRAG. NO:1009) (SEQ ID NO:10388)
5'-GTT GTT TTT GGG GTT TGG CTT-3' (FRAG. NO:1010) (SEQ ID NO:10389)
          5'-GCC TTT CCT GGT TCT CTT-3' (FRAG. NO:1011) (SEQ ID NO:10390)
          5'-BCBGTBGBGTBGGGGBTTCCBTGGCBGGBGCCBTCTTCTTCBTGGBCTCC-3'(FRAG.NO:1012) (SEQ ID NO:10391)
          5'-TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC-3' (FRAG.NO:1013) (SEQ ID NO:10392)
         Human IgE Receptor (Fc Epsilon R) Nucleic Acid and Antisense Oligonucleotide Fragments
          CCG BCB GGC CGT GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC GAT CTC TGA ATA TTGA CCT TCC ATG GCG GTC
          CTG CTT GGA GBT CTC TGB BTB TTGB CCT TCC BTG GCG GTC CTG CTT GGB-3' (FRAG: 1696) (SEQ ID NO:11078)
          5'-TCG TTC CTC TCG-3' (FRAG: 1697) (SEQ ID NO:12370)
          5'-BGB BCG BGB C-3' (FRAG: 1698) (SEQ ID NO:11080)
5'-TGB BTB TTGB-3' (FRAG: 1699) (SEQ ID NO:11081)
          5'-GCC TGT GTC TGT CCT CCT-3' (FRAG. NO:1014) (SEQ ID NO:10393)
5'-GCT TCG TTC CTC TCG TTC-3' (FRAG. NO:1015)(SEQ ID NO:10394)
          5'-CTG CTT GGT GCC CTT GCC G-3' (FRAG. NO:1016)(SEQ ID NO:10395)
          5'-GTC CTG CTC CGG GCT GTG G-3' (FRAG. NO:1017)(SEQ ID NO:10396)
5'-GTC CTC GCC CTG GCT CCG GCT GGT GGG CTC CCC TGG-3' (FRAG. NO:1018) (SEQ ID NO:10397)
          5'-CCT TCG CTG GCT GGC GGC GTG C-3' (FRAG. NO:1019) (SEQ ID NO:10398)
5'-CCC BGB BCG BGB CCC GGB CCG BCB-3' (FRAG. NO:1020) (SEQ ID NO:10399)
         5'-GGC CGT GGT TGG GGG TCT TC-3' (FRAG. NO:1021) (SEQ ID NO:10400)
5'-GCT GCC TCC GTT TGG GTG GC-3' (FRAG. NO:1022) (SEQ ID NO:10401)
          5'-GBT CTC TGB BTB TTGB CCT TCC BTG GCG GTC CTG CTT GGB-3' (FRAG. NO:1023) (SEQ ID NO:10402)
        5'-GBT CTC TGB BTB TTGB CCT TCC BTG GCG GTC CTG CTT GGB-3' (FRAG. NO:1023) (SEQ ID NO:10402)

Human High Affinity IgE Receptor Oligonucleotide Fragments

5'-AACAAGAAAA GCGTTGGTAG CTCTGGTGAA TCCCAAAAGA ATGTGGCAGT TGCTAGCCAT GCTCCTGAAT ATGTATAAAC
AGTACATCAT ATGACTAAGA GTTTGACTTA GGGGTTAGAT TTTATGTGTT TGAACCCCAA ATTAGTTATT TAATAGTTGG
CACCCCAAAA CAAGTTACTT AACCTCACTA AGGTTCAGTT TTCCTGTTTA TAAAATGTAG ATAGTGATAG TATGTACTTT
ATAGGATTAT TGTGAAAAAT AAATGAAATA TCAGATTTAT TTAGGATAAC ACCTGGCATA TGTTTGGTAT TCAGAATTAG
TTGCTGCTGT TTTATTCTGC TCTCCCTTGC ATCCCACTTT TCTAAGTTGT AAACTAAATA GTTGTACACA GATTGACAGA
TTAAGAAAGG CTTGTGATTG TGCTAGACCT ATGCCTATGC CTCTGTCTCA CCAGATTCCA GGTGTATATG TGGAGGTGGG
ATAGGGAGTG GAGTAAGTGG GTAAATATTA AATTGCCCAG TTGGGCACCA TCCTGAATAT TATCTCTAAA GAAAGAGCA
AAACCAGGCA CAGCTGATGG GTTAACCAGA TATGATACAG AAAACATTTC CTTCTGCTTT TTGGTTTTAA GCCTATATTT
GAAGCCTTAG ATCTCTCCAG CACAGTAAGC ACCAGGAGTC CATGAAGAAG ATG GATCTTCATG TGGAATGACT GGTTTCATTC
          GAAGCCTTAG ATCTCTCCAG CACAGTAAGC ACCAGGAGTC CATGAAGAAG ATG GATCTTCATG TGGAATGACT GGTTTCATTC
          AATAGACTTA ATTCAGCAGT CTGTGGGGAA GAGCAAGGTA TGATAGAATG GTTCCTCAAG TGCTTCAGAT GTGAAGTGGG
         TTTAAATATA CTGTCCCTGT CTTCTTCAGA GTTTTGGTAA AGATAAAATA GGACACTCAT TTAAAAGCAA TCTTTGCAAA TGACAAGCCA CTATAGACAT TAATAGAGTT TTCATTTCCA GTATTATCAT TAATATCAGA TCCTGGAAGA AGGTTGAGCC TTGACCTAGA GCAAAAAAAC AGAAGAATTA GTAAAGGAAT CCTGGAGAAA GCCCCTGCTG TGTATTTAAA GGAGAAAGGG
```

CAGATTGACA GATTAAGAAA GGCTTGTGAT TGTGCTAGAC CTATGCCTCT CTCTCACCAG ATTCCAGGTG TATATGTGGA GGTGGGATAG GGAGTGGATA AAGTGGGTAA ATATTAAATT GCCCAGTTGG GCACCATCCT GAATATTATC TCTAAAGAAA GAAGCAAAAC CAGGCACAGC TGATGGGTTA ACCAGATATG ATACAGAAAA CATTTCCTTC TGCTTTTTGG TTTTAAGCCT ATATTTGAAG CCTTAGATCT CTCCAGCACA GTAAGCACCA GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GGTAAGTAGA GATTCAATTA CCCCTCCCAG GGAGGCCCAA ATGAATTTGG GGAGCAGCTG GGGTAGGAAC CTTTACTGTG GGTGGTGACT TTTTCTAGGA CATGTGCAAA CTATTGGGCA TTTCCCAGGG ACTCTGTAGT GGAGCCAAGC TAGAAAGCAG AGGCAAGTGG GCTGAGCAAC ACCTAAGGAG GAAGCCAGAC TGAAAGCTTG GITCCTIGCA TTIGCTCTGG CATCTTCCAG AGTGCAAATT TCCTACCAAG GTAATGAGGG TAGAGGAGAG AAAGAAGCTC
TTTCTTCCCC TGATTCTCAT TCCTGAAAAG ACGGTTGGTC CTTAAAATTC CATGGATGTA GATCTTATCC CCACACCCAG ATTCTAGTCC TGGATCTCAT TCCTGAAAAG ACGGTTGGTC CTTAAAATTC CATGGATGTA GATCTTATCC CCACCCCAG
ATTCTAGTCC TCTGGAGATA AAGAAAGA CTGGTTGACATA ATGTATCCTC TCTGGACTTT TGCAGCTCCA GATGGCGTGT
TAGCAAGGTGA GTCCTCTGTT CTTGTTTCCCT TGGTGTATCA ACATGTCTGG GCATTGCTTT CCTCTCACTA TTTTCTCCT
CCCATCACTT CTGCTTTCTA ATGAGCATGA ATCTGTTCCT TGGCCAGACT ACTTTCCCTC TCCACCTTGC CTTGTCTTTC
TTTTTTTCCC TGATTCATTG CATTCTCCA AGTCATTCT TCCTCTGTTT TAGTCAATAA CCATGTCTGT TGCACATATA
CATGTCTCAT TCTCTCTCCT AGACACTCT GCATGATCTC GCTCAATAAT TACATTATTA TTATTATTGC CATTTTATAA
TTGAGGATTC TGCACTCA ATATAACCCCT ATTATAACACTCA TTTGCACTCA ACTTCTTCTCA ACTTCTTTCCA ACTTCTTTCCA ACTTCTTTCCA ACTTCTTTCCA ACTTCTTCCA ACTTCTCCA ACTTCTCA ACTTCTTCCA ACTTCTCA ACTTCTTCCA ACTTCTTCCA ACTTCTCA ACTTCTTCCA ACTTCTCA ACTTCTCA ACTTCTCA ACTTCTCA ACTTCTCA ACTTCTTCCA ACTTCTCA ACTTCA ACTTCTCA ACTTCTCA ACTTCA ACT AGTCCAGTTC TCTTCTGACT ATATCACCCT TTTGTTATCA CCATGTATCT ACTTCTTTGG TCTCTGTTCA AATTTGCACT ACATCCCCTT GTTCCAGGAA GCCATTCAAG ACTGACTTTC TTAGTGCCTC TCACTACTTT CTGGAACTGA CATATGTTTT TCACTCTGTA TATACTTACA ATTAAATAGT CATAAATATT CAGAGCTTGG AGAAACCTTA TATTTCATCC AGTCCAGTAA ATTTATCCAT CCATAATTCA CTCATTCATT CACATAATAA ATATTTAATG TAACAATGGT TGAACATGGC AGACAGTGTT TCTACCTCAA AAGAGATTGC AGTCCTCATT TACAGATACT GAATTGAAAT TAACAGAAGT AGAGTGAGTC AGCTCAAATC 20 ACATAGRAA TAGGATTOC AGTECTATI TACAGATACT GARTIGAAAT TACAGAAGT AGAGTGAATTC ACATAGRAA TAGGTTCTT TGTTTTTAAA TCTCCTGCAT ATGTGTCCTG TCTTTCTCCC TGTGTTGGCC GTTCCCTGGG GCACCAATAC TAATTTCTCC TTCCCCTAGA AATCAAAACA GGGTCTTATC ACCAACAGAA TAAGGACAGG TTGACCACTG ATTGTCAGAA TATTGCTTCG TTTGTACTTT TAAGCCTAGA CAGTTTTCAA TGACTTTTTT TCTCTCTACA TGTCTTTTCA TATTTTTATC TTCTTGAAGT CCCTCAGAAA CCTAAGGTCT CCTTGAACCC TCCATGGAAT AGAATATTA AAGGAGAGAA TGTGACTCTT ACATGTAATG GGAACAATTT CTITGAAGTC AGTTCCACCA AATGGTTCCA CAATGGCAGC CTTTCAGAAG AGACAAATTC AAGTTGAATG CCAAAATTGAATG AGTTCCACCA AATGGTTCCA CAATGGCAGC CTTTCAGAAG AGACAAAATTC AAGTTGAAT ATTGTGAATG CCAAATTTGA AGACAGTGGA GAATACAAAT GTCAGCACCA ACAAGTTAAT GAGAGTGAAC CTGTGTACCT GGAAGTCTTC AGTGGTAAGT TCCAGGGGATA TGGAAATACA GATCTCTCAT GTGAGGGATG GCTCATCTGA AGATGGGAAA AAACAGGTTA TTCCAAGGGT TAGGACACCA GAGTGGGGATT CAAGGCCTC CATTTTTAAG ACCCCTGCAT TGGCTGGGCA CAGTGGCTCA CGCCTGTAAT CCCAGCACTT TGGGAGGCTG AGGCAGGTGG ATCACGAGGT CAGGAGATCG AGACCATCCG GCTAACATGG TGAAACCCCA TCTCTGCTAA AAAATATATA TATATAAAAT TAGCCGGGCG TAGTGGTGGG CACCTGTAGT CCCAGGTACT CGGGAGGCTG AGGCAGGAGA ATGGTGTGAA CCCAGGAGGT GGAGGTTGCA GTGAGCTGAG ATCACGCCAC TGCCCTCCAG CCTGGGCTAC AGAGCAAGAC TCCGTCTCAA AAAATAAATA AATAAATAAA AAAGACCCCT GCATCTCTT TCTTCTACCC CCTTCCCTTT TGATTACTTG TATGCCTTCT TTCAATATTC TAGTCATCTC
TCAATATTAT TCCTCCACCC TATTTTCCTC TATCTTTTCT GCCTAGATTC AGGTATATAT TATGTGGTCA AACAGCATGA
CATATATGTG AACATTTCAA AGAGCTGTGT ATCTGGAATA GGATCAAAAAG GTTTGACTTA AAGTTTTGCT CTGCATAATC
CATATGGCAG GACCTGAATA TTAGGTTGTA CTCTTCGTTA TGAAACATAT CTGGGTACAT TTCCTTATGT CCTCTGTTGT TACTTAAGAA CACATATTTC ATGCTTGTTT CATTTTTATC ACTCCTACTG CCAACAAATA GCATAGCATG CTTAGGCACA
TGTGGCTTAA TTAGCAAATG TTGAATAAAC AAATTAATGA TTTTGAATAG TGACCAATAG GTCTCTTTTA TACTCTATAT THATTIGTG CCCTITAAAA ATCACTITA TGAGCCAAAA AGGAGTTAA TGATAATCA TAGTITCIGA CACAGCTCT ATGCGTGGCT CTCTTTTCTC TATTCATTCT CTCTCTCTCT ATTATTGTT AAATAAATAA TGTAATGAAT GTTCTTCAGA CTGGCTGCTC CTTCAGGCCT CTGCTGAGGT GGTGATGGAG GGCCAGCCC TCTTCCTCAG GTGCCATGGT TGGAGGAACT GGGATGTGTA CACAGGTGTC TATTATAAGG ATGGTGAAGC TCTCAAGTAC TGGTATGAGA ACCACAACAT CTCCATTACA AATGCCACAG TTGAAGACAG TGGAACCTAC TACTGTACGG GCAAAGTGTG GCAGCTGGAC TATGAGTCTG AGCCCCTCAA TGAGCAGTTG CAGCTTGTAG AAGGGGGCA CCTGTGATAC ACTGGAAAGC CTACCAGACT TGCAATGAGG AGACCTGGGT
GATAGTATAT ATCTCAATCT CTGTTTCAAA GCCTTGACTT GTTAAATGGT GATAGTAATA CCTGCTTGCA CTATGAAATT
TTTATGAAGA TTAATGTGGT AATATTTGTG AAATGACTTT GTAAACTGTT AAGCACTACC CAAGCATAAC AGATTGTGAT
TACTATTTTG ATCTCAAAGT CATCTGTTGC TCCTGGGGGA ACACTTATAT TTATCAAATT GAAAAAAAAGT TTCAAAGTTG
AATGAAGAAA GGATATAAAG AGCTTGAGGA GCCCATTCCA GCTTAGGAGG GCTGGGAAAG GAAACCAGCA AGTCAGTAAG CTGTGTGCCT GTGTATTGAG GGAGGAGGA ATGGACTTGA TATGGAGAGG GTAGGGAGGT GGACTGCCTC TATGGCCTGT
AAGAAAAACT GCTCTCCCA AACTCTTTAT AAGAGAGGA GCCTGTGAAG TATTCACTTT TGAAGGAGAA AGTTAGACTT TICCTICACA CACTITICAC ATAATAATGT TTAAAAAAGC ATGAGGTCAA AATACATAAT TAAGTCCTAG CAGTTCTCG
TTAACTAATT TGAGACTGAA GTGCTATGTA CTIGTCTCTA GGCTTCCAGT ATCTCACTT GTAAAAACAGA ATATTTGGTC
TAGATTCCAT TAGAATCATT TGATAACTTA AAAAATATAT TGATGCTCAT GTCTCATTTC TTGAGATTCT GATTTAATTG
GTTTGGGGTG CAGCCTGGGT ATACCGTATTT TTCAATAGGTC TTTCACATAA TGGTAATGGG TAGCCAATAT TGAGAATCAC TITGCAGGT CAGCCIGGT ALACGIATH TICALAGGIC THICACALIAA TIGGIAATIGG TAGCCAATAT TIGAGAATCAC
TIGTCTAGGT GATCTTAAA TIGATTACTAG ACTAATCACA AAAATCGGTA
CAGTTTATAA ACAGACTAAC AGAACCACAA AATAATAGAA TIGGAAGGCA ATITAACTAG TIGCAATTTCT TCATTTTGCC
TAACAGGCAT GTAAGAAATG ATGATTGATT GAGTAATAGG CATTGATGAC CCCTGTCCTC ACTTTGTCCC CTTTCCACCC
CTTAATTATA TIGGAATTCT GGTCTTGTCA TITCCGAATAA GGGGTTTAACTATTG TCTTCCCCTC TIGGGCACGGC
ACACTGGCTA CTGGAGTTAA GAGGAAATGC TTAGGACTCC CTGTGGCTCC AGGGAGCAC ACAGAGCAA CTCAACCTAG TGTTAATCTG AGTGTTTTCT CTGTGCTTCT GGATGCCACA TCACGCTAAA AATGAAGGAC AAAGCTTGGT CTTTCTCTTA GGGAGGATGA AACTCTGAAC CTCATTTTC AGTTCCCAAG ATGAATTATG TTTCTCATTG CATCTGTGT CCACTACAGC TCCGCGTGAG AAGTACTGGC TACAATTTTT TATCCCATTG TTGGTGGTGA TTCTGTTTGC TGTGGACACA GGATTATTTA TCTCAACTCA GCAGCAGGTC ACATTTCTCT TGAAGATTAA GAGAACCAGG AAAGGCTTCA GACTTCTGAA CCCACATCCT AAGCCAAACC CCAAAAACAA CTGATATAAA TACTCAAGAA ATATTTGCAA CATTAGTTTT TITCCAGCAT CAGCAATTGC
TACTCAATTG TCAAACAC CTTGCAATAT ACATAGAAAC GTCTGTGCTC AAGGATTAT AGAAATGCTT CATTAAACTG

AGTGAAACTG GTTAAGTGGC ATGTAATAGT AAGTGCTCAA TTAACATTGG TTGAATAAAT GAGAGAATGA ATAGATTCAT TTATTAGCAT TTGTAAAAGA GATGTTCAAT TTCAATAAAA TAAATATAAA ACCATGTAAC AGAATGCTTC TGAGTATTCA AGGCTTGCTA GTTTGTTTGT TTGTTTCTA CTAAAGGCAA GGACCATGAA GTTCTAGATT GGAAATGTCC TCTCTTGACT ATTGCAAGTG CGATCTAGGA ATGAAAAGAC ATAGGAGGAT GCCAGTGAGG TGGATCATTT TTATGCTTCT TCTTCAGCTT ACTAAATATG AACTITICAGT TCTTGGCAGA ATCAGGGACA GTCCAAGAC ATAGGACTCT CAGGATGAAG TAGAGTCCAG
GATTCCTCTG TGATTGTTTT GCCCCTCCA AATTITATATC TTGAACTTAT GTCTTGTATC TTTATACAGC ACCTGAACCA
AGCATTTTGG AGAAATTCCA GCTAATAATA ATAACCAAAA CCTTCGGCTC TGAAAACAGT CCAGGACTGA ATAAGATCTT
GGGCAAAAGA ACTAGACAGT TTTGGTTTAT TTTCCCTTTC ATTTTATGTC TTCATCATAG TCATTGGAGG CTCATTCTTC
TTGTCATGGA GTAAATGGGA TTAAAGTTC TACTAAGAGT CTCCCACCATC CTCCACCTGT CTACCACCGA GCATTGGCCT ATATTTGAAG CCTTAGATCT CTCCAGCACA GTAAGCACCA GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GCTCCAGATG GCGTGTTAGC AGTCCCTCAG AAACCTAAGG TCTCCTTGAA CCCTCCATGG AATAGAATAT TTAAAGGAGA GAATGTGACT CTTACATGTA ATGGGAACAA TTTCTTTGAA GTCAGTTCCA CCAAATGGTT CCACAATGGC AGCCTTTCAG AAGAGACAAA TTCAAGTTTG AATATTGTGA ATGCCAAATT TGAAGACAGT GGAGAATACA AATGTCAGCA CCAACAAGTT AATGAGAGTG AACCTGTGTA CCTGGAAGTC TTCAGTGACT GGCTGCTCCT TCAGGCCTCT GCTGAGGTGG TGATGGAGGG CCAGCCCCTC TTCCTCAGGT GCCATGGTTG GAGGAACTGG GATGTGTACA AGGTGATCTA TTATAAGGAT GGTGAAGCTC TCAAGTACTG GTATGAGAAC CACAACATCT CCATTACAAA TGCCACAGTT GAAGACAGTG GAACCTACTA CTGTACGGGC AAAGTGTGGC AGCTGGACTA TGAGTCTGAG CCCCTCAACA TTACTGTAAT AAAAGCTCCG CGTGAGAAGT ACTGGCTACA ATTTTTTATC CCATTGTTGG TGGTGATTCT GTTTGCTGTG GACACAGGAT TATTTATCTC AACTCAGCAG CAGGTCACAT TTCTCTTGAA GATTAAGAGA ACCAGGAAAG GCTTCAGACT TCTGAACCCA CATCCTAAGC CAAACCCCAA AAACAACTGA TATAATTACT CAAGAAATAT TTGCAACATT AGTTTTTTTC CAGCATCAGC AATTGCTACT CAATTGCTACA ACACAGCTTG CAATATACAT AGAAACGTCT GTGCTCAAGG ATTTATAGAA ATGCTTCATT AAACTGAGTG AAACTGGTTA AGTGGCATGT AATAGTAAGT GCTCAATTAA CATTGGTTGA ATAAATGAGA GAATGAATAG TAAAAAAAA AAAAAAAA AAAAAAAA TCTCAATATA ATAATATTCT TTATTCCTGG ACAGCTCGGT TAATGAAAAA ATGGACACAG AAAGTAATAG GAGAGCAAAT CTTGCTCTCC CACAGGAGCC TTCCAGTGTG CCTGCATTTG AAGTCTTGGA AATATCTCCC CAGGAAGTAT CTTCAGGCAG ACTATTGAAG TCGGCCTCAT CCCCACCACT GCATACATGG CTGACAGTTT TGAAAAAAGA GCAGGAGTTC CTGGGGGTAA CACAAATTCT GACTGCTATG ATATGCCTTT GTTTTGGAAC AGTTGTCTGC TCTGTACTTG ATATTTCACA CATTGAGGGA GACATTTTTT CATCATTTAA AGCAGGTTAT CCATTCTGGG GAGCCATATT TTTTTCTATT TCTGGAATGT TGTCAATTAT ATCTGAAAGG AGAAATGCAA CATATCTGGT GAGAGGAAGC CTGGGAGCAA ACACTGCCAG CAGCATAGCT GGGGGAACGG GAATTACCAT CCTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAATT TTTTGAGACC AAGTGCTTTA TGGCTTCCTT TTCCACTGAA ATTGTAGTGA TGATGCTGTT TCTCACCATT CTGGGACTTG GTAGTGCTGT GTCACTCACA ATCTGTGGAG CTGGGGAAGA ACTCAAAGGA AACAAGGTTC CAGAGGATCG TGTTTATGAA GAATTAAACA TATATTCAGC TACTTACAGT GAGTTTGAAG ACCCAGGGA AATGTCTCCT CCCATTGATT TATAAGAATC ACGTGTCCAG AACACTCTGA TTCACAGCCA AGGATCCAGA AGGCCAAGGT CTTGTTAAGG GGCTACTGGA AAAATTTCTA TTCTCTCCAC AGCCTGCTGG TTTT AAGCTTTTCA AAGGTGCAAT TGGATAACTT CTGCCATGAG AAATGGCTGA ATTGGGACAC AAGTGGGGAC AATTCCAGAA GAAGGGCACA TCTCTTTCTT TTCTGCAGTT CTTTCTCACC AAATGCCIGA AITGGGCACA AAGTGGGGAC AATTCCAGAA GAAGGGCACA TCTCITTCTT TICTGCAGIT CITTCTCACC
TTCTCAACTC CTACTAAAAT GTCTCATTTT CAGGITCTGT AAATCCTGCT AGTCTCAGGC AAAATTATGC TCCAGGAGTC
TCAAATTTTC TTATTCATA TTAGTCTTTA TTAGTAGAC TTCTCAATTT TTCTATTCAT CACAAGTAAA AGCCTGTTGA
TCTTAATCAG CCAAGAAACT TATCTGTCTG GCAAATGACT TATGTATTAAA GAGAATCATC AATGTCATGA GGTAACCCAT
TTCAACTGCC TATTCAGAGC ATGCAGTAAG AGGAAATCCA CCAAGTCTCA ATATAATAAT ATTCTTTATT CCTGGACAGC
TCGGTTAATG AAAAAATGGA CACAGAAAGT AATAGGAGAG CAAATCTTGC TCTCCCACAG GAGCCTTCCA GGTAGGTACA
AGGTATTATT TTTTTCTACC CTCAGTCACT TGTGGCAGGG GAATCCATAG TCACGGTGCT TAGGAGATGA AACTTTATTG ATTIAGGCAT GGATCCATCT AGTTTAATTA ATATATTGGG TATGAGGAAG CTACTTGCTG TACTTTCCAT GTGGTTCTTC CTCCCTGGAG AGGACACTT TTACTCAGCT TGCAAACTGG AAATAGATTT TCTCACATTA GAAGCTCATT TTCTGGGTAT GAGACAGGAG AGTTCATACT GTGTATGTAG ATCCTTGCGT TCTGGGTCTT ACATGTCGT AGGGACACAT ATCCTTCACA CATGCTTTTA TAAATACTTG ATAAAGTAAC CTGCTTCTTG ATTGGTCTTT ATAATCCATA AGCTGTGGGA TGCTTCTCTG AAGATGAAAA TAGTAATAGA GTCCCATCTA GCTATTCAAA GCCATTCCTT CATTGTTCTT TGTGCACATG AAGTTGGGGT TIGITACTGA CAAAATATAT TCAGATACAT TTCTATGTTA AAAGGATIGT GAGATGCATA GGTAAATGTG TITATTTTCA GTTTTACTTG TCAACATAGA TGAATGAGAA AGAACTTGAA AGTAACACTG GATTAAGAAT AGGAAAATTT GGCATGGATT TTGCTCCATT TTGTCCCATC TAATCACTTG GATAGTGTTC AGGTGTTCTT GGTCAGTTAC TTGGATGCTC TGAGCTTTAG TTTCTTGGTG ATTACAATGA AGATTTGAAT TACAGGATGG CTTTGAAAAA ATAAACAAAA CTCCCCTTTC TGTCTGTCGA GAGGCTGAGG CAGGTGGATC ACCTGAGGTC AGGAGTTTGA GACCAGCCTG ACCAACATGG TGAAACCTCA TCTCTACTAA GAGGCTGAGG CAGGTGGATC ACCTGAGGTC AGGAGTTTGA GACCAGCCTG ACCAACATGG TGAAACCTCA TCTCTACTAA
ATATAAAAAA TTAGCTGAGT GTGATAGTGC ATACCTGTAA TCCAGCTACT TAAGAGGCTG AGGCAGGAGG CTTGTTTGAA
CCTGGAAGGC AGAGGTTGCA GTGACCTGAG ATTGTGCCAT TGCACTCCAG CCTGGGCAAT AAGTGCGAAC TCTGTCTCAA
AATAATAATA ATAATAATAG AAAATAAAGT TGTCTTCATG AAAAATGAGG AAAGAGATTG CTGGGGTGAG AAACATTAAG
ATCAATGGGC ATATGGTGAC CTTCTATGCC CTAGAAACTC TTTTANGGTA TTTTCTCCTG GTATCTCTT TACNCATCGT
TCTATCTGGA AAAATAAGGTG GATGAGTGAG ATAATAACGG TATATACTTT TTAAAGGTCT AATTGACATA TATAAATTGC
AAGTATTTCA GATGTCAATT TGCTAACCTT GACACACATA GACACACTG AAAACATCAC CACATTAATA CAATGTATGT
ATCCATCATT CCAAAAGCTT CCCTGTGTAT CTTTGTAACT CTTTCTTCCT CCCTCCACTC CTTGTCCTCT CGTTCCCAAG

	AAAACATTGA TCTGCTTCCT GTGAATATAA ATTAACTTAC ATTTTTTAGA GCTTTATATA AGTATGTTCT CTTTACTGTT
	TGTCTTCCTT CGCTGCACAG TTATTTTGAG ATTCTTCAAG TTTTTTCTTT ATATCGATAC TTCATTCACA AGAATATATT
	TTAATTCTAG ACTATGTCAC ATTGACTITG TCGTCTGCTA AATCCTTAGT GCTCAGATGA CTTGTTCAGG ACTCTCCTTG
_	AACCTGTACC TCTGTTANAT TGAAACTTGT CTCTACTGTC TTTTTATTTC AAACACAGCT TATTAGGTGT CTCTCAACCC
5	ATCAAACNCA CAATCTGAGT CTTTAGGAGA TTGCTTTGAA TTTGTGCTAT TGACTTATAT NTATATNAAA TNTGTAAATG
	TTTGGTAAAA ATATCATCAT GTACNTTTTC ATAATTACGC TATNTNCACA TGATATATGT CAGACTCTGG AAATATGCAT
	GCCACAGACA CGTGTTTCTT GCCTAAAGGG GCTGATGGAA GACNCACATA CNAATAGACG ATTGCAGTAG AATGAGAGTG
	GTGGTCTAAN CAGTACATGT CCTGATGTTG CTCGGACAGT TACTACNCCA AGAGTACCCC CTGCATTGTC AGGGTTAGCA
	TCTCCTGGAA GCCTCATGTA AATGAAGAAT TTCATGCTCC ATCCAGGACC TAATGAATAA GAATCTGCAT TTTAGCAAGA
10	CCCTCATATG ATTCATATAC ACTITITITI TITTITITIA GATGGAGTCT CACTCITGTC GCCCAGGCTG GAGTGCAATG
10	
	GCATGATCTT GGCTCACTGC AACCTCTGCC TCCCGGGTTC AAGTGATTCT CCTGTCTCAG CCTCCCTAGT AGCTGGGACT
	ACAGGTGCAT GCCACAGTGG CTGGCTAATT TTTGTATTTT TAGTAGAGAC AGGGTTTCAC CATTTTGGTC AGGCTGGTCT
	TGAACTCATG ACCTCCGGTG ATTCCCCCGC CTCGGCTTCC CAAAGTGCTG GGATTACAGA CATGAGCCAC CACACCCGCC
	TTATTCGTAT ACNCATTTAA TTCTGAGAAG CACTCTATAG AAAATAAGAA TAAGAAATA TTGGGCTCAC AGGTGACATT
15	AATAAGTAAC TITATCGAGT ACCCCAAATT TTACCTATGT TTGGAAGATG GGGTTAAAAG GACACATTGA AAACAAGAAC
	TCATTGTGGC TTTTTTTCC TCCTTTTIGA ACAGTTTTCT ATTTCTGGAA TGTTGTCAAT TATATCTGAA AGGAGAAATG
	CAACATATCT GGTGAGTTGC CCGTTTCTGT CTTTGTCCAT CCTTGAAAAAG ATAAGAAGAA CAGAGTTTTA AGAGTCTTAA
	GGGAAACACA TCTTTGTCTC CTATATTACT TGTGAATGTG GATATATGAT TTTGTTTCAA TCTATTTTGT GTCCTAAGGC
~~	TITTIGCAAC AGAAGTIGGA TATATCATTA GAAACATAAA TIGTACCATT TAACATACAT GAAGTITATG TITACCTIGA
20	CGTTCTTCTA AAAAGTGTCC TACACCGGCA TTGTCCTTGT AGGCATATTC ACATGATCAA ATAAAATAAT TAGTTTTCAA
	TTAAGGAGAA TATTTGAGGA AAGACCGTAC GTGTTCATGT GGTTCCTGAA GGCAGTCCAG TGAGAAAGTA ATATATGCTT
	CATTAAACAA TGCGGACATT TTCAGGGTTT CCCTTTTTAA CCAAAATTTG GAAGCAATGT GGAATTTACT GGATGCATCC
	AGCCCTGAAA TGAAGATAGG TTTATTGAAT GTGCCAGCAA GTGCAGGCCC AGGTCTGAGT GTTCTTCATT ATTATCAGGT
	GAGAGGAAGC CTGGGAGCAA ACACTGCCAG CAGCATAGCT GGGGGAACGG GAATTACCAT CCTGATCATC AACCTGAAGA
25	AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAATT TITTGAGACC AAGTGCTTTA TGGCTTCCTT TTCCACTGTA
23	TGTATITIT TITGTGTGGG AAGACTAAGA TICTGGGTCC TAATGTAAGT AAGAAGCCCT CTICTCCTGT TCCATGAACA
	CCATCCTTTT CTGTAACTTC TATTACACAG TATAGTGGTT CTGTAAGTTC ACACAGCCCA GGGAGATGCT GGCTGCCCAC
	TCCCCTCAAC CCAGGCAAAT TCCTCGGGGT TAAAGTTATC TACTGCAAGT GACGATCTCT GGGTTTTTCT GTGCCTGTGT
	TTGTGTGTGT GTGTGTGTGT GTGTGTGTG GTATGTGTCA CTTTAAAAGG ACTGGTCAGA TGGTAGGGAG ATGAAAACAG
30	GAGATGCTAT AAGAAAATAA ACTTTTGGGG CGAATACCAA TGTGACTCTT TTTGTTTGTC ATTTGTTGCT GTTCAATAGG
	AAATTGTAGT GATGATGCTG TTTCTCACCA TTCTGGGACT TGGTAGTGCT GTGTCACTCA CAATCTGTGG AGCTGGGGAA
	GAACTCAAAG GAAACAAGGT AGATAGAAGC CCGATATAAA ATCTTGAATG ACAGGTTAAC GAATTGGAGC TTTATTCCTT
	AAAATATGGC CTGGGTTTTC TGAAACATTT CTTCCAGAAA ATAGTTTCTC CAAGTTTTAT TACTTTGGTT TACAAATCTC
	ACATTTAAAT CACATTITAT ACCATAAGTA GCACACATTT CATAATATTC CTCTGAATGA GGGTTGGGAT AATAGGACTG
35	ATATOTTAGA AATGCCTTAA AGTGTGTGGA GCATGAGAGA TGGATGTACA GAAGGCTTGT GAGGAAACCA CCCAGGTATC
33	
	TGGCCTTGTT TTCTGCCCCA GAACTAGCCG CCTATTCCTG TTTCTGTTTT ATTCCTTTGT TTCTTGACTT TTCCTTTCCA
	ACTIGCTCTA AAACCTCAGT TITCTTTCCT TICTGATTCA TGACTACCAA ATGITTTCAC TIGCCTCACC CGTCCATTAC
	ACCTITIGATA AGAACCACCA GACCTIGTGC TCATGTACTT GCCCATGTCT GATGGAAGAA ACATACTCTC TCCATCTGTC
	CACTTTCCTG AGGCATTCAA GTCTAGCCAC CTTTTAAAAT CACTCTCCTC CAGGCTGGGC ACGGTGTCAC GCCTGTAATC
40	TCAGCACTTT GTGAGGCTGA GGAGGGCGGA TCACTTGAAG TCAGGAGTTC AAAACCAGCC TGGCCAAATG GCAAAACCAA
	ATCTTCTTCA ATTATAACCA AATCTTAAAC CAAATCTCTA CTAAAAAATA CAACAAAACA AAACAACAAC AACAAAAACA
	GAAAAGGAAA CATTAGCCCA GCGTGGTGGC AGGTACCTGA GGTTCCAGAT ACTTGGGAGG CTGAAGCAGG AGAATCGCTT
	GAGCCCAAGA GATGGAGGTT GCAGTGAGCC GAGATCATGC CACTGCACCA CAGCCAGGGT GACAGAGCCA TACTTCCCAG
	CACATTIGGGA GGCCAAAGCT GAAGAATAAT TTGAGGTGAG GATTTGGAGA CCAGCCTGGC CAACATGGTG AAACTCCGTC
45	TGTACTAAAA ATATAAAACT TAGTGGGGCA TGGGGGCACA CACCTGTAAT TTCAGCTACT TAGGAGGCTG AGGAGGAGA
43	
	ATTGCTTGAA CCCGGGAGGC GGAAGTTGCA GTGAGCCAAG ATCGTGGCCA CTGCACTCCA GCCTGGGTGA CATAGTGAGA
	TICTGTCTCA AAAAAAATAA AAGAAATTTA AAAAATCACT CTCTTCCAAA GATAGATAAA TAAGACAGCA GATATACTAA
	GGAATAACCT CACCAACTTG TCATTGACTG ACATGATTTC TTTTGGCCCA CTTGGCCAGC TAGTCTGGTT TGGTTTTCTG
	GAAATGAAAG AAATAATCAG AGTTTAATGA CAGAGAGCGT GAGACCCAGA AAGACAAAAG TAGATGAGGT AAGTCTCTTG
50	AGCGAGACTT CTAGGGATGG GAAATTTGTG GTGATTGATA TGAAATGATT TTTCCCTTAT CAGGTTCCAG AGGATCGTGT
	TTATGAAGAA TTAAACATAT ATTCAGCTAC TTACAGTGAG TTGGAAGACC CAGGGGAAAT GTCTCCTCCC ATTGATTTAT
	AAGAATCACG TGTCCAGAAC ACTCTGATTC ACAGCCAAGG ATCCAGAAGG CCAAGGTTTT GTTAAGGGGC TACTGGAAAA
	ATTICIATIC TCTCCACAGC CTGCTGGTTT TACATTAGAT TTATTCGCCT GATAAGAATA TTTTGTTTCT GCTGCTTCTG
	TCCACCTTAA TATGCTCCTT CTATTTGTAG ATATGATAGA CTCCTATTTT TCTTGTTTTA TATTATGACC ACACACATCT
55	
55	CTGCTGGAAA GTCAACATGT AGTAAGCAAG ATTTAACTGT TTGATTATAA CTGTGCAAAT ACAGAAAAA AGAAGGCTGG
	CTGAAAGTTG AGTTAAACTT TGACAGTTTG ATAATATTTG GTTCTTAGGG TTTTTTTTT TTTTAGCATT CTTAATAGTT
	ACAGTTGGGC ATGATTTGTA CCATCCACCC ATACCCACAC AGTCACAGTC ACACACACAT ATGTATTACT TACACTATAT
	ATAACTTCCT ATGCAAATAT TTTACCACCA GTCAATAATA CATTTTTGCC AAGACATGAA GTTTTATAAA GATCTGTATA
	ATTGCCTGAA TCACCAGCAC ATTCACTGAC ATGATATTAT TTGCAGATTG ACAAGTAGGA AGTGGGGAAC TTTTATTAAG
60	TTACTCGTTG TCTGGGGAGG TAAATAGGTT AAAAACAGGG AAATTATAAG TGCAGAGATT AACATTTCAC AAATGTTTAG
••	TGAAACATTT GTGAAAAAAG AAGACTAAAT TAAGACCTGA GCTGAAATAA AGTGACGTGG AAATGGAAAT AATGGTTATA
	TCTAAAACAT GTAGAAAAAG AGTAACTIGGT AGATTTTGTT AACAAAATTAA AGAATAAAGT TAGACAAGCA ACTGGTTIGAC
	TAATACATTA AGCGTTTGAG TCTAAGATGA AAGGAGAACA CTGGTTATGT TGATAGAATG ATAAAAAGGG TCGGGCGCGG
	AGGCTCACGC CTGTAATCCC AGCCCTTTGG GAGGCCGAGG TGGGCAGATC ACGAAGTCAG TAGTTTGAGA CCAGCCTGGC
65	CAACATAGTG AAACCCCGTC TCTACTAAAA ATACAAAAAA AAAATTAGCT GGGTGTGGTG GCAGTCACCT GTAGTCCCAG
	CTACTTGGGA GGATGAGGCA GGAGAATCGC TTGAACCTGG GAGGCGGAGG TTGCAGTGAG CCGAGATCGC ACCAGTGCAC
	TCCAGCCTTG GTGACAATGG GAGACTCCAT CTCAAAAAAA AAAAAAAAA AAAAAAGATA AAAAGTCAGA AATCTGAAAA
	GTGGAGGAAG AGTACAAATA GACCTAAATT AAGTCTCATT TTTTGGCTTT GATTTTGGGG AGACAAAGGG AAATGCAGCC
	ATAGAGGCC TGATGACATC CAATACATGA GTTCTGGTAA AGATAAAATT TGATACACGG TTTGGTGTCA TTATAAGAGA
70	AATCATTATT AAATGAAGCA AGTTAACACT CTAAGAGAAT TATTTTGAGA TAGAAGTGAA GCTAAGCTAA
70	
	CCTATAATTG GAGGGAAAAA CTAAGGATAA AATCTAGCCT AGAAGATACA ATAATTAGTC ATAAACATGC ATTGTGAAAC
	TGTAGAGAGC AGGTAGCCCA AAATAGAGAA AGATTAGATA AAGAGAAAAT AAGTATCCAT CAGAGACAGT ATCTCTAGGC
	TTGGGCAAGA GAAAAGTCCA CAGTGATAAG CAACTCCACC TAAGGCATGA ATATGCGGCA GAGAAAACAG CAATAGTGAA
	TGAATGCAAA AGGTGCTGAG CAAATTCCAC ACATGAGTAT TGTGCATGAG TAAATGAATA AAACATTTGC AAAGACCTTT
75	AGAGAAAGAG AATGGGAGCA TATGTGCGAA ATAAGATAGT TGATTATGAA TAGAAGGTAG TGAAGAAAAG CAAGCTAAGA

```
AAAAATTCTG TTTATAAAAG AAGGAAAAGA TAGTTTATGT TTTTAGCCTA AGTATAAGAG TCCTACAGAT GGACTGAAAA
  AAATCAGTCT GAGAGTATTA GTCACAATTA ATGAAATAAT TACATTTTAT GTATTGAGGA TGCCAAGATT AAAAGGTGAC
 AATCAGTCT GAGAGTATTA GICACAATTA ATGAAATAAT TACATTTTAT GIATIGAGGA IGCCAAGATT AAAAGGIGAC
AGGTAGATGT TAATTTCCCT AGATTGTGAA AGGTACCAC ACAATCACAC AACAAATAAT TACAGTGACTT GGTATGCTTT
ATTTAATTGT AGGGCCTGAG GTTTTCCATT CTCATTTTTC TAAAATACAA TTTTGTTTCT CCAAATTGA CACGCAGAATA
AAACCCTAC CCTTTCACTG TGTATCATGC TAAGCTGCAT CTCTACTCTT GATCATCTGT AGGTATTAAT CACATCACTT
CCATGGCATG GATGTTCACA TACAGACTCT TAACCCTGGT TTACCAGGAC CTCTAGGAGT GGATCCAATC TATATCTTTA
CAGTTGTATA GTATATTTTT CTCAAGACTCAT TTCACCCACC TACCTGCCTT TATATGTTC ACATCATTGC
CACAGACACACA AGCACAATGC TGGGGTTCTC TTCACACTAT CACTGCCCCCA AATTGCCTT CTAAATTTCA CACTACTCC CATAACTACT CTATCCCACG
 CATCHTCTC ATGAAGACCA CTGAATGAAC ACCHTTICAT CAGGCCTTAA TITCTTGCTC CATAACTACT CTATCCCACG ATGCAGTATT GTATCATTAA TTATTAGTGT GCTTGTGACC TCCTTATGTA TTCTCAATTA CCTGTATTTG TGCAATAAAT TGGAATAATG TAACTTGATT TCTTATCTGT GTTTGTGTTG GCATGCAAGA TTTAGGTACT TATCAAGATA ATGGGGAATT AAGGCATCAA TAAAATGATG CCAAAGACCA AGAGCAGTTT CTGAAGTCCT CCTTTTCATC AGCTCTTTAT CAAACAGACC
  ACTCTATAAA CAACCCATAG CCAGAAAACA GGATGTAGGA ACAATCACCA GCACACTCTA TAAACAACCC ATAGCCAGAA
  AACAGAATGT AAGGACAATC ACCAGCCATC TTTTGTCAAT AATTGATGGA ATAGAGTTGA AAGGAACTGG AGCATGAGTC
 ATATTTGACC AGICAGTCCT CACTCTTAIT TACTTGCAT AATOMICAG GAAAGCTTT TICTCTTTGT GAACCTCAGG
TTTTACATCT GAAAATGAGA AATTTGGAAC AAAAGATTCC TAACTGGTCT TTCTGTTCCC ATATTCTGT GATCTCAAT
ATTTAGGATT TTTGGTAATC ACAATTACTT AGTTTGTGT TGAGATAGCA ACACGAATCA GAACTATTTG GTGGACATAT
TTTCAAAGGA GTAGCTCTCC ACTTTGGGTA AAGAAGTGAT GCNGGTCGTG GTGGCTCACG CCTGTAATCC CAGCACTTTA
  GGGAGGCCAA GGCGGGTGGA TCACGAGGTC AGGAGATCGA GACCATCCTG GCTAACACGG TGAAACCCCG TCTCTACTAA
  AAAATACAAA AAATTAGCCA GGCGTGGTGG CGGGCGCCTG TAGTCCCACG TACTCGGGAG GCTGAGGCAG GAGAATGGCA
  TGAACCAGGG AGGCGGAGCT TGCCGTGAGC CGAGATAGCG CCACTGCAGT CCCTCCTGGG CAAAAGAGCA AGACTGCGTC
  TCAAAAAAA AAAAAAAA AAAAAAAAA GTGTGTGGAG TAGCAGGACA CCTGCAACAA TAATATTTTT CTAAATCCCT
 CTGAAAAATG CTAATCAAAG GGTTTTTTTC CTAAAAATTG TCTTAGAAAT AAAATTTCCC CTTTGGGAGA CCGAGGCTGG
CAGATCACGA GGTCAGGAGA TAGAGACCAC GGTGAAACCC CGTCTCTACT AAAAATACTA AAAATTAGCC GGGGNGTGGT
  GGTGGGTACA CCTGTAGTCC CAGCTACTTG GAGGCTGAGG CTGGAGAATC ACGTGAAC-3' (FRAG. NO: _)(SEQ ID NO:11874)
  5'-AACAAGAAAA GCGTTGGTAG CTCTGGTGAA TCCCAAAAGA ATGTGGCAGT TGCTAGCCAT GCTCCTGAAT ATGTATAAAC
 GAAGCCTTAG ATCTCTCCAG CACAGTAAGC ACCAGGAGTC CATGAAGAAG ATG-3' (FRAG. NO: XSEQ ID NO:11869)
5'-GATCTTCATG TGGAATGACT GGTTTCATTC AATAGACTTA ATTCAGCAGT CTGTGGGGAA GAGCAAGGTA TGATAGAATG
 GTTCCTCAAG TGCTTCAGAT GTGAAGTGGG TTTAAATATA CTGTCCCTGT CTTCTTCAGA GTTTTGGTAA AGATAAAATA GGACACTCAT TTAAAAGCAA TCTTTGCAAA TGACAAGCCA CTATAGACAT TAATAGAGTT TTCATTTCCA GTATTATCAT TAATATCAGA TCCTGGAAGA AGGTTGAGCC TTGACCTAGA GCAAAAAAAC AGAAGAATTA GTAAAGGAAT CCTGGAGAAA
 GCCCCTGCTG TGTATTTAAA GGAGAAAGGG AGATCATGTT GGGAAATTAT AATATTAAAA GTAAACAAAA GCTAGGAAGT
  AAAATAAAAT AAATTATATG GCCTAGATCC CCATAAGTAA TGGTTTAACT TCTGCCTTCC TGTGTTCTGA GCCAGATTAG
  GGCACAGTAG AGAAAGAGGA GTCTCTGAAA ATGTTTCCAA TTTCGCTGGT CAGACAGCGG ATCATCAGTG AATCAGATGA
 AAATTTGTGG ATTTATGCAC TAACTGATCA GCAGGAAATT AAACAAGAAA AGCGTTGGTA GCTCTGGTGA ATCCCAAAAG AATTTGGCAG TTGCTAGCCA TGCTCCTGAA TATGTATAAA CAGTACATCA TATGACTAAG AGTTTGACTT AGGGGTTAGA TTTATGTGT TTGAACCCCA AATTAGTTAT TTAATAGTTG GCACCCCAAA ACAAGTTACT TAACCTCACT AAGATTCAGT
  TITCCTGTIT ATAAAATGTA GATAGTGATA GTATGTACTI TATAGGATTA TTGTGAAAAA TAAATGAAAT ATCAGATTTA
 TTTAGGATAA CACCTGGCAT ATGTTTGGTA TTCAGTAATT AGTTGCTGCT GTTTTATTCT GCTCTCCCTT GCATCCCACT
TTTCTAAGTT GTAAACTAAA TAGTTGTACA CAGATTGACA GATTAAGAAA GGCTTGTGAT TGTGCTAGAC CTATGCCTCT
  GCACCATCCT GAATATTATC TCTAAAGAAA GAAGCAAAAC CAGGCACAGC TGATGGGTTA ACCAGATATG ATACAGAAAA
  CATTICCTIC TGCTTTTTGG TTTTAAGCCT ATATTTGAAG CCTTAGATCT CTCCAGCACA GTAAGCACCA GGAGTCCATG
 AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GGTAAGTAGA GATTCAATTA
CCCCTCCCAG GGAGGCCCAA ATGAATTTGG GGAGCAGCTG GGGTAGGAAC CTTTACTGTG GGTGGTGACT TTTTCTAGGA
CCCCTCCCAG GGAGGCCCAA ATGAATTIGG GGAGCAGCTG GGGTAGGAAC CTTTACTGTG GGTGGTGACT TTTTCTAGGA
CATGTGCAAA CTATTGGGCA TTTCCCAGGG ACTCTGTAGT GGAGCCAAGC TAGAAAGCAG AGGCAAGTGG GCTGAGCAAC
ACCTAAGGAG GAAGCCAGAC TGAAAGCTTG GTTCCTTGCA TTTGCTCCAG AGTGCAAATT TCCTACCAAG
GTAATGAGGG TAGAGGAGAG AAAGAAGCTC TTTCTTCCCC TGATTCTCAT TCCTGAAAAG ACGGTTGGTC CTTAAAATTC
CCTGGACTTT TGCAGCTCCA GATGGCGTGT TAGCAGGTGA GTCCCTCTGTT CTTGTTCCCT TGGTGTATCA ACATGTCTGG
GCATTGCTTT CCTCCACCA ATTCTTCCT CCCACACCCAG ATTCTAGTCC TCTGGAGATA AAGAAGACTG CTGGACACTA ATGTATCCTC
TCTGGACTTT TGCAGCTCCA GATGGCGTGT TAGCAGGTGA GTCCCTCTGTT CTTGTTCCCT TGGTGTATCA ACATGTCTGG
GCATTGCTTT CCCACCTTGC CTTGTCTTTC TTTTTTTCCC TGATTCTTCA ATGAGCATGA ATCTGTTCCT TGGCCAGACT
ACTTTCCCTC TCCACCTTGC CTTGTCTTTC TTTTTTTCCC TGATTCATTC CATTCTCTCA AGTCATTCT TCCTCTGTTT
TAGTCAATAA CCATGTCTGT TGCACATATA ATGAGGATGC TGAAACTCAG TGATTTTCTG GTGGATACAT GGCTAAGGAA
CTGGATTTCA ACGTAAGTTC CTTGGATCTA AGTCCAGTTC TCTCTCTGACT ATATCCACCCT TTTGTTATCA CGCTAAGGAA
CTGGATTTCA ACGTAAGTTC CTTGGATCTA AGTCCAGTTC TCTCTCTGACT ATATCCACCCT TTTGTTATCA CAGTGATCTC
ACATCACTTT CTGGAACTGA AATTTGCACT ACATCCCCTT GTTCCAGGAA GCCATTCAAG ACTGACTTTC TTAGTGCCTC
TCACTACTTT CTGGAACTGA AATTTGCACC ACATCCCCTT GTTCCAGGAAACCATTC CTCATCAATAAT TAAGTGCCTC
TAACAATGGT TGAACATGGC AGACAGTGT TCTCCCTCAAA AAGAGATTCA CTCATTCATT CACAATAATA TCACGCTTGGATCTT TTAGTGCCTC
TAACAAGGTT TGAACATGGC AGACAGTGTT TCTCCCTCAAA AAGAGATTCC CTCATTCATT CACAATAATAA
TAACAGAAGT AGACTGGC AGCACGTAAAT ATTTTACCCAT ATGTGTCCTT
TCACCTCATTT TAACACCATATAA ATTTTAATCT
TCACCTGATACT TCACCTCAAATC AACACCTTAT TACACATAATA ATATTTTAATG
TAACAGAAGT AGACTGGC AGCACGTAAT CACATAGTGAA TTGGTTTCTT TCTCCTCTATT TACAGATACT GAATTGAAAT
TAACAGAAGGT AGACTGGC GTCCCAGGA ACCCAATAC TAATTTCTCC TTCCCTCAAAACCA GGGTCTTATC
TCTTCTCCC TGTGTTGGCC GTTCCCTGGG GCACCAATAC TAATTTCTCC TTCCCCTAGA AATCAAAACA GGGTCTTATC
TAACAGAAGT AGAGTGAGIC AGCTCAAATC ACATAGTGAA TIGGTTTCTT TGTTTTTAAA TCTCCTGCAT ATGTGTCCTG
TCTTTCTCCC TGTGTTGGGC GTTCCCTGGG GCACCAATAC TAATTTCTCC TTCCCCTAGA AATCAAAACAC AGGTCTTATCA
ACCAACAGAA TAAGGACAGG TIGACCACTG ATTGTCAGAA TATTGCTTCG TTTGTACTTT TAAGCCTAGA CAGTTTTCAA
TGACTTTTT TCTCTCTACA TGTCTTTTCA TATTTTTATC TTCTTGAAGT CCCTCAGAAA CCTAAGGTCT CCTTGAACCC
TCCATGGAAT AGAATATTTA AAGGAGAGAA TGTGACTCTT ACATGTAATG GGAACAATTT CTTTGAAGTC AGTTCCACCA
AATGGTTCCA CAATGGCACCA CAAAGTTTAAT GAGACTGCAAA ATTGTGAATG CCAAATTTGA AGACAGTGGGAAA
GGAAAACAAAT GTCAGCACCA ACAAGTTTAAT GAGACTGCAAA CCTTGTGTACCCT GGAAGTCTTC AGTGGTAAGT TCCAGGGGATA
TGGAACACACTT TGCAACCCATA
 TGGAAATACA GATCTCTCAT GTGAGGGATG GCTCATCTGA AGATGGGAAA AAACAGGTTA TTCCAAGGGT TAGGACACCA
```

GAGTGGGATT CAAGGCCTCT CATTTTTAAG ACCCCTGCAT TGGCTGGGCA CAGTGGCTCA CGCCTGTAAT CCCAGCACTT TGGGAGGCTG AGGCAGGTGG ATCACGAGGT CAGGAGATCG AGACCATCCG GCTAACATGG TGAAAACCCCA TCTCTGCTAA AAAATATATA TATATAAAAT TAGCCGGCCG TAGTGGTGGG CACCTGTAGT CCCAGGTACT CGGGAGGCTG AGGCAGGAGA ATGGTGTGAA CCCAGGAGGT GGAGGTTGCA GTGAGCTGAG ATCACGCCAC TGCCCTCCAG CCTGGGCTAC AGAGCAAGAC AGAGCAGTAT GGGAAGAGGA CATTAAATAA AGAATTACAT AAGTAATTAA TTTAAATTAT ACATGTTTTG AAGAAGTTTT TTTTTGACAA CTATAATTAA CACTAGAACT GGGAAGTTTC TATAAGGTAA GAGAGGACAA AATAGACACT CTCCTAAGCT AAAATTCCCA AGAAGACTG TTTATTTTCC CCTAACTAAC TAGAACTAGC AACAGAAGAT CTGAAAGGAA TTCTGGCTTT CAAGTGTTCC ATGTATGGAC TCATCAGGGA GGTCCGAGAG GCTTTGTGGC CCCAGACTGA CTTTTCAGGA GGGGAAAGGA THIATCAATA CACAAGACAG GCTCTAAGCA TIATTTIGIG CCCTTTAAAA ATCCACTTA TGAGCCAAAA AGTGAGTTAA
TGATAATTCA TAGTTTCTGA CACATGCTCT ATGCGTGGCT CTCTTTTCT TATTCATTC TCTCTCTCTC ATTTATTGTT
AAATAAATAA TGTAATGAAT GTTCTTCAGA CTGGCTGCTC CTTCAGGCCT CTGCTGAGGT GGTGATGGAG GGCCAGCCCC
TCTTCCTCAG GTGCCATGGT TGGAGGAACT GGGATGTGA CAAGGTGATC TATTATAAGG ATGGTGAAGC TCTCAAGTAC
TGGTATGAGA ACCACAACAT CTCCATTACA AATGCCACAG TTGAAGACAG TGGAACCTAC TACTGTACGG GCAAAGTGTG GCAGGGGAAG GAAGAGAAA CTTCTGAGCC TGAGCAGTTG CAGCTTGTAG AAGGGGGGCA CCTGTGATAC ACTGGAAAGC CTACCAGACT TGCAATGAGG AGACCTGGGT GATAGTATAT ATCTCAATCT CTGTTTCAAA GCCTTGACTT GTTAAATGGT GATAGTAATA CCTGCTTGCA CTATGAAATT TITATGAAGA TTAATGTGGT AATATTTGTG AAATGACTTT GTAAACTGTT AAGCACTACC CAAGCATAAC AGATTGTGAT TACTATTTTG ATCTCAAAGT CATCTGTTGC TCCTGGGGGA ACACTTATAT TTATCAAATT GAAAAAAGT TTCAAAGTTG AATGAAGAAA GGATATAAAG AGCTTGAGGA GCCCATTCCA GCTTAGGAGG GCTGGGAAAG GAAACCAGCA AGTCAGTAAG CTGTGTGCCT GTGTATTGAG GGAGGAGGGA ATGGACTTGA TATGGAGAGG GTAGGGAGGT GGACTGCCTC TATGGCCTGT AAGAAAAACT GCTCTCTCCA AACTCTTTAT AAGAGAGGGA GCCTGTGAAG
TATTCACTTT TGAAGGAGAA AGTTAGACTT TTCCTTCACA CACTTTGTAC ATAATAATGT TTAAAAAAGC ATGAGGTCAA
AATACATAAT TAAGTCCTAG CAGTTCTCTG TTAACTAATT TGAGACTGAA GTGCTATGTA CTTGTCTCTA GGCTTCCAGT
ATCTTCATCT GTAAAACAGA ATATTTGGTC TAGATTCCAT TAGAATCATT TGATAACTTA AAAAATATAT TGATGCTCAT
GTCTCATTTC TTGAGATTCT GATTTAATTG GTTTGGGGTG CAGCCTGGGT ATACGTATTT TTCATAGGTC TTTCACATAA TGGTAATGGG TAGCCAATAT TGAGAATCAC TTGTCTAGGT GATCTITAAA TGATTTCTGG ATGTAATATT CTGAGGCTCT TTGAATAAAT GAGAGAATGA ATAGATTCAT TTATTAGCAT TTGTAAAAGA GATGTTCAAT TTCAATAAAA TAAATATAAA ACCATGTAAC AGAATGCTTC TGAGTATTCA AGGCTTGCTA GTTTGTTTGT TTGTTTCTA CTAAAGGCAA GGACCATGAA GTTCTAGATT GGAAATGTCC TCTCTTGACT ATTGCAAGTG CGATCTAGGA ATGAAAAGAC ATAGGAGGAT GCCAGTGAGG TGGATCATTT TTATGCTTCT TCTTCAGCTT ACTAAATATG AACTTTCAGT TCTTGGCAGA ATCAGGGACA GTCTCAAGAC ATAGGACTCT CAGGATGAAG TAGAGTCCAG GATTCCTCTG TGATTGTTTT GCCCCTCCCA AATTTATATC TTGAACTTAT GTCTTGTATC TITATACAGC ACCTGAACCA AGCATTTTGG AGAAATTCCA GCTAATAATA ATAACCAAAA CCTTCGGCTC TGAAAACAGT CCAGGACTGA ATAAGATCTT GGGCAAAAGA ACTAGACAGT TTTGGTTTAT TTTCCCTTTC ATTTTATGTC TTCATCATAG TCATTGGAGG CTCATTCTTC TTGTCATGGA GTAAATGGGA TTAAAGTTC-3' (FRAG. NO: _)(SEQ ID NO:11870) 5'-TACTAAGAGT CTCCAGCATC CTCCACCTGT CTACCACCGA GCATGGGCCT ATATTTGAAG CCTTAGATCT CTCCAGCACA GTAAGCACCA GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GCTCCAGATG GCGTGTTAGC AGTCCCTCAG AAACCTAAGG TCTCCTTGAA CCCTCCATGG AATAGAATAT TTAAAGGAGA GAATGTGACT CTTACATGTA ATGGGAACAA TTTCTTTGAA GTCAGTTCCA CCAAATGGTT CCACAATGGC AGCCTTTCAG
AAGAGACAAA TTCAAGTTTG AATATTGTGA ATGCCAAAATT TGAAGACAGT GGAGAATACA AATGTCAGCA CCAACAAGTT
AATGAGAGTG AACCTGTGTA CCTGGAAGTC TTCAGTGACT GGCTGCTCCT TCAGGCCTCT GCTGAGGTGG TGATGGAGGG
CCAGCCCCTC TTCCTCAGGT GCCATGGTTG GAGGAACTGG GATGTTACA AGGTGATCTA TTATAAGGAT GGTGAAGCTC
TCAAGTACTG GTATGAGAAC CACAACATCT CCATTACAAA TGCCACAGGTT GAAGACAGTG GAACCTACTA CTGTACGGGC AAAGTGTGGC AGCTGGACTA TGAGTCTGAG CCCCTCAACA TTACTGTAAT AAAAGCTCCG CGTGAGAAGT ACTGGCTACA ATTITTTATC CCATTGTTGG TGGTGATTCT GTTTGCTGTG GACACAGGAT TATTTATCTC AACTCAGCAG CAGGTCACAT TTCTCTTGAA GATTAAGAGA ACCAGGAAAG GCTTCAGACT TCTGAACCCA CATCCTAAGC CAAACCCCAA AAACAACTGA TATAATTACT CAAGAAATAT TIGCAACATT AGTITTITTC CAGCATCAGC AATIGCTACT CAATTGTCAA ACACAGCTTG CAATATACAT AGAAACGTCT GTGCTCAAGG ATTTATAGAA ATGCTTCATT AAACTGAGTG AAACTGGTTA AGTGGCATGT AATAGTAAGT GCTCAATTAA CATTGGTTGA ATAAATGAGA GAATGAATAG ATTCATTTAT TAGCATTTGT AAAAGAGATG ΤΤΟΑΛΤΤΤΟΑ ΑΤΑΛΑΛΤΑΛΑ ΤΑΤΑΛΑΛΟΟΑ ΤΟΤΑΛΟΑΘΑΑ ΤΟΟΤΙΟΤΟΤΙΘΑ ΤΑΛΑΛΑΛΑΛΑ ΑΛΑΛΑΛΑΛΑ ΑΛΑΛΑΛΑΛΑ-3' (FRAG. NO:_)(SEQ ID NO:11871) S'-TCTCAATATA ATAATATICT TTATICCTGG ACAGCTCGGT TAATGAAAAA ATGGACACAG AAAGTAATAG GAGAGCAAAT CTTGCTCTCC CACAGGAGCC TTCCAGTGTG CCTGCATTTG AAGTCTTGGA AATATCTCCC CAGGAAGTAT CTTCAGGCAG ACTATTGAAG TCGGCCTCAT CCCCACCACT GCATACATGG CTGACAGTTT TGAAAAAAGA GCAGGAGTTC CTGGGGGTAA

CACAAATTCT GACTGCTATG ATATGCCTTT GTTTTGGAAC AGTTGTCTGC TCTGTACTTG ATATTTCACA CATTGAGGGA GACATTTTT CATCATTTAA AGCAGGTTAT CCATTCTGGG GAGCCATATT TTTTTCTATT TCTGGAATGT TGTCAATTAT ATCTGAAAGG AGAAATGCAA CATATCTGGT GAGAGGAAGC CTGGGAGCAA ACACTGCCAG CAGCATAGCT GGGGGAACGG GAATTACCAT CCTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAATT TTTTGAGACCC
AAGTGCTTTA TGGCTTCCTT TTCCACTGAA ATTGTGGA TGATGCTGTT TCTCACCATT CTGGGACTTG GTAGTGCTGT
GTCACTCACA ATCTGTGGAG CTGGGGAAGA ACTCAAAGGA AACAAGGTTC CAGAGGATCG TGTTTATGAA GAATTAAACA
TATATTCAGC TACTTACAGT GAGTTGGAAG ACCCAGGGGA AATGTCTCCT CCCATTGATT TATAAGAATC ACGTGTCCAG
AACACTCTGA TTCACAGCCA AGGATCCAGA AGGCCAAGGT CTTGTTAAGG GGCTACTGGA AAAATTTCTA TTCTCTCCAC AGCCTGCTGG TTTT-3'(FRAG.NO:_)(SEQ ID NO:11872)
5'-AAGCTTTTCA AAGGTGCAAT TGGATAACTT CTGCCATGAG AAATGGCTGA ATTGGGACAC AAGTGGGGAC AATTCCAGAA CTCCTCCAAC TTTGACTAGA GTAAGGGTTG GGTCTAGAAA AGAATATTGA GTTGCATCAA CTGTTTTCCC ACTTGGATTC ATGAGAGGTG TTAGGTCCTT TAAAAAACAT GGTAGATAAA GAGTTGACAC TAACTGGGTC CTTTTGGGAA GAGCCAGAAG CATITCCTCA TAAAGACTIT AAATTGCTAG GACGAGAATG GCCAACAGGA GTGAAGGATT CATAACTITA TCTTTACTTA GATGTAAAGA ACAATTACTG ATGTTCAACA TGACTACATA CATAAAGGCG CATGGAGAAA AGTATTGGCC TTCCATGCAT GATGTAAAGA ACAATTACTG ATGTTCAACA TGACTACATA CATAAAGGCG CATGGAGAAA AGTATTGGCC TTCCATGCAT TAGGTAGTGC TTGTATCAAT TCTTÁTAGTG GCTAGGGTAT CCTGGAAAAT CTTACGTGTG GATCATTTCT CAGGACAGTC TAGGACACTA ACGCAGTTTC TCATGTTTGG CTTCTATTAT TAAAAAAATGA TACAATCTCG GGAAAATTT TTTGATTTTC ATGAAATTCA TGTGTTTTC TATAGGTAAC ACAAATTCTG ACTGCTATGA TATGCCTTTG TTTTGGAACA GTTGTCTGCT CTGTACTTGA TATTTCACAC ATTGAGGGAG ACATTTTTTC ATCATTTAAA GCAGGTTATC CATTCTGGGG AGCCATATTT TCCCAGTATT AAGATGATAT TTATAAATTCT TAATTATAAA TATATGTGAG CATATTAACC AGATCTAAC AGTTGTTTAT TCCCAGTATT AAGATGATAT TTATAAATCT TAATTATAAA TATATGTGAG CATATTATAC ATAGATATGC TCATTAACAA CAACAAAAGA TTCTTTTTAC AATTAACGGT GGGTTAAACA TTTAGCCCAC AGTTTTATCC CATGAGAAAC CTGAATCTAA ATGACTTGCC TAAGGGCCAC TTGACTAATA GTAATTGAAC ACTAAACTTTC AGAATCCAAC TCCAGGAACA TACTTCTAGC ACTATTCATC AATAAAGTTA TATGATAAAAAAAAA ACAACAACAAT TATCTGTCAA ACTAAAAATA ACAACAGGGC CTGGCATGG TGGCTCACAC CCGTAATCCC AGCACTTTGG GAGGCTGAAG CAGGTGGATC ACCAAAAATA ACAACAGGG CAGCTGGAGT ACCAACATGG TGAAACCTCA TCTCTACTAA ATAAAAAAAA TTAGCTGAGT GTGATAGTGC ATAACCTGAA GACCAGCCTG ACCAACATGG TGAAACCTCA TCTCTACTAA ATATAAAAAA TTAGCTGAGT GTGATAGTGC ATACCTGTAA
TCCAGCTACT TAAGAGGCTG AGGCAGGAGG CTTGTTTGAA CCTGGAAGGC AGAGGTTGCA GTGAGCTGAG ATTGTGCCAT TGCACTCCAG CCTGGGCAAT AAGTGCGAAC TCTGTCTCAA AATAATAATA ATAATAATAG AAAAATAAAGT TGTCTTCATG
AAAAATGAGG AAAGAGATTG CTGGGGTGAG AAACATTAAG ATCAATGGGC ATATGGTGAC CTTCTATGCC CTAGAAACTC TTTTANGGTA TTTTCTCCTG GTATCTCTTT TACNCATCGT TCTATCTGGA AAAATAGGTG GATGAGTGAG ATAATAACGG
TATATACTTT TTAAAGGTCT AATTGACATA TATAAATTGC AAGTATTTCA GATGTCAATT TGCTAACCTT GACACACATA GACACACATG AAAACATCAC CACATTAATA CAATGTATGT ATCCATCATT CCAAAAGCTT CCCTGTGTAT CTTTGTAACT CTTTCTTCCT CCCTCCACTC CTTGTCCTCT CGTTCCCAAG AAAACATTGA TCTGCTTCCT GTGAATATAA ATTAACTTAC ATTTTTTAGA GCTTTATATA AGTATGTTCT CTTTACTGTT TGTCTTCCTT CGCTGCACAG TTATTTTGAG ATTCTTCAAG TTTTTTCTTT ATATCGATAC TTCATTCACA AGAATATATT TTAATTCTAG ACTATGTCAC ATTGACTTTG TCGTCTGCTA AATCCTTAGT GCTCAGATGA CTTGTTCAGG ACTCTCCTTG AACCTGTACC TCTGTTANAT TGAAACTTGT CTCTACTGTC TTTTTATTTC AAACACAGCT TATTAGGTGT CTCTCAACCC ATCAAACNCA CAATCTGAGT CTTTAGGAGA TTGCTTTGAA
TTTGTGCTAT TGACTTATAT NTATATNAAA TNTGTAAATG TTTGGTAAAA ATATCATCAT GTACNTTTC ATAATTACGC TATNINCACA TGATATATGI CAGACTCTGG AAATATGCAT GCCACAGACA CGTGTTTCTT GCCTAAAGGG GCTGATGGAA GACNCACATA CNAATAGACG ATTGCAGTAG AATGAGAGTG GTGGTCTAAN CAGTACATGT CCTGATGTTG CTCGGACAGT ATTICTGGAA TGTTGTCAAT TATATCTGAA AGGAGAAATG CAACATATCT GGTGAGTTGC CCGTTTCTGT CTTTGTCCAT CCTTGAAAAG ATAAGAAGAA CAGAGTTTTA AGAGTCTTAA GGGAAACACA TCTTTGTCTC CTATATTACT TGTGAATGTG CCTIGAAAAG ATAAGAAGA CAGAGITITA AGAGICITAA GGGAAACACA TCTIGICIC CIATATIACT TGIGAAIGIG
GATATATGAT TITGITITCAA TCTATITIGI GTCCTAAGGC TITITIGCAAC AGAAGTIGGA TATATCATIA GAAACATAAA
TIGACCATI TAACATACAT GAAGITITATG TITACCTIGA CGTTCTICTA AAAAGTGCC TACACCGGCA TIGTCCTIGT
AGGCATATTC ACATGATCAA ATAAAATAAT TAGTITICAA TITAAGGAGAA TATTIGAGGA AAGACCGTAC GTGTCCTGT
GGTTCCTGAA GGCAGTCCAG TGAGAAAGTA ATATATGCTT CATTAAACAA TGCGGACATI TICAGGGTT CCCTTTITAA
CCAAAATTTG GAAGCAATGT GGAATTACT GGATGCATCC AGCCCTGAAA TGAAGATAGG TITATTGAAT GTGCCAGCAA
GTGCAGGCCC AGGTCTGAGT GTTCTTCATT ATTATCAGGT GAGAGGAAGC CTGGGAGCAA ACACTGCCAG CAGCATAGCT
GGGGGAACGG GAATTACCAT CCTGATCATC AACCTGAAGA AGACCTTGC CTATATCCAC ATCCACAGTT GCCAGAAATT
TTTTGAGACC AAGTGCTTTA TGGCTTCCTT TTCCACTGTA TGTATTTTTT TTTGTGTGGG AAGACTAAGA TTCTGGGTCC

	TAATGTAAGT AAGAAGCCCT CTTCTCCTGT TCCATGAACA CCATCCTTTT CTGTAACTTC TATTACACAG TATAGTGGTT
	CTGTAAGTTC ACACAGCCCA GGGAGATGCT GGCTGCCCAC TCCCCTCAAC CCAGGCAAAT TCCTCGGGGT TAAAGTTATC
	TACTGCAAGT GACGATCTCT GGGTTTTTCT GTGCCTGTGT TTGTGTGTGT GTGTGTGT
	CTTTAAAAGG ACTGGTCAGA TGGTAGGGAG ATGAAAACAG GAGATGCTAT AAGAAAATAA ACTTTTGGGG CGAATACCAA
5	TOTGACTETT TTTGTTTGTC ATTTGTTGCT GTTCAATAGG AAATTGTAGT GATGATGCTG TTTCTCACCA TTCTGGGACT
,	TGGTAGTGCT GTGTCACTCA CAATCTGTGG AGCTGGGGAA GAACTCAAAG GAAACAAGGT AGATAGAAGC CCGATATAAA
	ATCTTGAATG ACAGGTTAAC GAATTGGAGC TTTATTCCTT AAAATATGGC CTGGGTTTTC TGAAACATTT CTTCCAGAAA
	ATAGTITICTIC CAAGTITIAT TACTITIGGIT TACAAATCIC ACATITAAAT CACATITIAT ACCATAAGTA GCACACATIT
	AIAGITICIC CAAGITITAL TACTITIGGI TACAAATCA ACATTAAA CACATTAAA ACACTAAGA GCACACATT
10	CATAATATTC CTCTGAATGA GGGTTGGGAT AATAGGACTG ATATGTTAGA AATGCCTTAA AGTGTGTGGA GCATGAGAGA
10	TGGATGTACA GAAGGCTTGT GAGGAAACCA CCCAGGTATC TGGCCTTGTT TTCTGCCCCA GAACTAGCCG CCTATTCCTG
	TTICTGITTI ATTCCTTIGI TTCTTGACTT TTCCTTTCCA ACTTGCTCTA AAACCTCAGT TTTCTTTCCT TTCTGATTCA
	TGACTACCAA ATGTTTTCAC TTGCCTCACC CGTCCATTAC ACCITTGATA AGAACCACCA GACCTTGTGC TCATGTACTT
	GCCCATGTCT GATGGAAGAA ACATACTCTC TCCATCTGTC CACTTTCCTG AGGCATTCAA GTCTAGCCAC CTTTTAAAAT
	CACTCTCCTC CAGGCTGGGC ACGGTGTCAC GCCTGTAATC TCAGCACTTT GTGAGGCTGA GGAGGGCGGA TCACTTGAAG
15	TCAGGAGTTC AAAACCAGCC TGGCCAAATG GCAAAACCAA ATCTTCTTCA ATTATAACCA AATCTTAAAC CAAATCTCTA
	CTAAAAAATA CAACAAAACA AAACAACAAC AACAAAAACA GAAAAGGAAA CATTAGCCCA GCGTGGTGGC AGGTACCTGA
	GGTTCCAGAT ACTTGGGAGG CTGAAGCAGG AGAATCGCTT GAGCCCAAGA GATGGAGGTT GCAGTGAGCC GAGATCATGC
	CACTGCACCA CAGCCAGGGT GACAGAGCCA TACTTCCCAG CACATTGGGA GGCCAAAGCT GAAGAATAAT TTGAGGTGAG
	GATTIGGAGA CCAGCCIGGC CAACATGGTG AAACTCCGTC TGTACTAAAA ATATAAAACT TAGTGGGGCA TGGGGGCACA
20	CACCTGTAAT TTCAGCTACT TAGGAGGCTG AGGCAGGAGA ATTGCTTGAA CCCGGGAGGC GGAAGTTGCA GTGAGCCAAG
	ATCGTGGCCA CTGCACTCCA GCCTGGGTGA CATAGTGAGA TTCTGTCTCA AAAAAAATAA AAGAAATTTA AAAAATCACT
	CTCTTCCAAA GATAGATAAA TAAGACAGCA GATATACTAA GGAATAACCT CACCAACTTG TCATTGACTG ACATGATTTC
	TITTGGCCCA CTTGGCCAGC TAGTCTGGTT TGGTTTTCTG GAAATGAAAG AAATAATCAG AGTTTAATGA CAGAGAGCGT
	GAGACCCAGA AAGACAAAAG TAGATGAGGT AAGTCTCTTG AGCGAGACTT CTAGGGATGG GAAATTTGTG GTGATTGATA
25	TGAAATGATT TTTCCCTTAT CAGGTTCCAG AGGATCGTGT TTATGAAGAA TTAAACATAT ATTCAGCTAC TTACAGTGAG
	TTGGAAGACC CAGGGGAAAT GTCTCCTCCC ATTGATTTAT AAGAATCACG TGTCCAGAAC ACTCTGATTC ACAGCCAAGG
	ATCCAGAAGG CCAAGGTTTT GTTAAGGGGC TACTGGAAAA ATTTCTATTC TCTCCACAGC CTGCTGGTTT TACATTAGAT
	TTATTCGCCT GATAAGAATA TITTGTTTCT GCTGCTTCTG TCCACCTTAA TATGCTCCTT CTATTTGTAG ATATGATAGA
	CTCCTATTTT TCTTGTTTTA TATTATGACC ACACACATCT CTGCTGGAAA GTCAACATGT AGTAAGCAAG ATTTAACTGT
30	TIGATTATAA CIGIGCAAAT ACAGAAAAAA AGAAGGCTGG CTGAAAGTTG AGTTAAACTT TGACAGTTTG ATAATATTTG
50	GTICTIAGGG TITITITITIT TITITAGCATT CITAATAGTT ACAGTIGGGC ATGATTTGTA CCATCACCC ATACCCACAC
	AGTCACAGTC ACACACACAT ATGTATTACT TACACTATAT ATAACTTCCT ATGCAAATAT TITTACCACCA GTCAATAAAT
	CATTITITGCC AGACATGAA GITTITATAAA GATCIGTATA ATIGCCTGAA TCACCAGCAC ATICACTGAC ATGATATTAT
	TTGCAGATTG ACAAGTAGGA AGTGGGGAAC TITTATTAAG TTACTCGTTG TCTGGGGAGG TAAATAGGTT AAAAACAGGG
35	AAATTATAAG TGCAGAGATT AACATTTCAC AAATGTTTAG TGAAACATTT GTGAAAAAAG AAGACTAAAT TAAGACCTGA
رد	GCTGAAATAA AGTGACGTGG AAATGGAAAT AATGGTTATA TCTAAAACAT GTAGAAAAAG AGTAACTGGT AGATTTTGTT
	AACAAATTAA AGAATAAAGT TAGACAAGCA ACTGGTTGAC TAATACATTA AGCGTTTGAG TCTAAGATGA AAGGAGAACA
	CTGGTTATGT TGATAGAATG ATAAAAAGGG TCGGGCCGCG AGGCTCACGC CTGTAATCCC AGCCCTTTTG GAGGCCGAGG
40	TGGGCAGATC ACGAAGTCAG TAGTTTGAGA CCAGCCTGGC CAACATAGTG AAACCCCGTC TCTACTAAAA ATACAAAAAA
40	AAAATTAGCT GGGTGTGGTG GCAGTCACCT GTAGTCCCAG CTACTTGGGA GGATGAGGCA GGAGAATCGC TTGAACCTGG
	GAGGCGGAGG TTGCAGTGAG CCGAGATCGC ACCAGTGCAC TCCAGCCTTG GTGACAATGG GAGACTCCAT CTCAAAAAAA
	AAAAAAAAA AAAAAGATA AAAAGTCAGA AATCTGAAAA GTGGAGGAAG AGTACAAATA GACCTAAATT AAGTCTCATT
	TTTTGGCTTT GATTTTGGGG AGACAAAGGG AAATGCAGCC ATAGAGGGCC TGATGACATC CAATACATGA GTTCTGGTAA
4.5	AGATAAAATT TGATACACGG TTTGGTGTCA TTATAAGAGA AATCATTATT AAATGAAGCA AGTTAACACT CTAAGAGAAT
45	TATTITGAGA TAGAAGIGAA GCTAAGCTAA ACTTCACATG CCTATAATTG GAGGGAAAAA CTAAGGATAA AATCTAGCCT
	AGAAGATACA ATAATTAGTC ATAAACATGC ATTGTGAAAC TGTAGAGAGC AGGTAGCCCA AAATAGAGAA AGATTAGATA
	AAGAGAAAAT AAGTATCCAT CAGAGACAGT ATCTCTAGGC TTGGGCAAGA GAAAAGTCCA CAGTGATAAG CAACTCCACC
	TAAGGCATGA ATATGCGGCA GAGAAAACAG CAATAGTGAA TGAATGCAAA AGGTGCTGAG CAAATTCCAC ACATGAGTAT
	TGTGCATGAG TAAATGAATA AAACATTTGC AAAGACCTTT AGAGAAAGAG AATGGGAGCA TATGTGCGAA ATAAGATAGT
50	TGATTATGAA TAGAAGGTAG TGAAGAAAAG CAAGCTAAGA AAAAATTCTG TTTATAAAAG AAGGAAAAGA TAGTTTATGT
	TTTTAGCCTA AGTATAAGAG TCCTACAGAT GGACTGAAAA AAATCAGTCT GAGAGTATTA GTCACAATTA ATGAAATAAT
	TACATTTTAT GTATTGAGGA TGCCAAGATT AAAAGGTGAC AGGTAGATGT TAATTTCCCT AGATTGTGAA AGTGATCACG
	ACAATCACAC AACAAATAAT TAAGTGACTT GGTATGCTTT ATITAATTGT AGGGCCTGAG GTTTTCCATT CTCATTTTTC
	TAAAATACAA TITTGTTTCT CCAAATTTGA CAGCAGAATA AAAACCCTAC CCTTTCACTG TGTATCATGC TAAGCTGCAT
55	CTCTACTCTT GATCATCTGT AGGTATTAAT CACATCACTT CCATGGCATG GATGTTCACA TACAGACTCT TAACCCTGGT
	TTACCAGGAC CTCTAGGAGT GGATCCAATC TATATCTTTA CAGTTGTATA GTATATGATA TCTCTTTTAT TTCACTCAAT
	TTATATTTTC ATCATTGACT ACATATTTCT TATACACAAC ACACAATTTA TGAATTTTTT CTCAAGATCA TICTGAGAGT
	TGCCCCACCC TACCTGCCTT TTATAGTACG CCCACCTCAG GCAGACACAG AGCACAATGC TGGGGTTCTC TTCACACTAT
	CACTGCCCCA AATTGTCTTT CTAAATTTCA ACTTCAATGT CATCTTCTCC ATGAAGACCA CTGAATGAAC ACCTTTTCAT
60	CCAGCCTTAA TITCTIGCTC CATAACTACT CTATCCCACG ATGCAGTATT GTATCATTAA TITATTAGTGT GCTTGTGACC
- •	TCCTTATGTA TICTCAATTA CCTGTATTTG TGCAATAAAT TGGAATAATG TAACTTGATT TCTTATCTGT GTTTGTGTTG
	GCATGCAAGA TITAGGTACT TATCAAGATA ATGGGGAATT AAGGCATCAA TAAAATGATG CCAAAGACCA AGAGCAGTIT
	CTGAAGTCCT CCTTTTCATC AGCTCTTTAT CAAACAGAAC ACTCTATAAA CAACCCATAG CCAGAAAACA GGATGTAGGA
	ACAATCACCA GCACACTCTA TAAACAACCC ATAGCCAGAA AACAGAATGT AAGGACAATC ACCAGCCATC TTTTGTCAAT
65	AATTGATGGA ATAGAGTTGA: AAGGAACTGG AGCATGAGTC ATATTTGACC AGTCAGTCCT CACTCTTATT TACTTGCTAT
	GTAAACTIGA GAAAGCTTTT TTCTCTTTGT GAACCTCAGG TTTTACATCT GAAAATGAGA AATTTGGAAC AAAAGATTCC
	TAACTIGGTCT TICTIGTTCCC ATATTCTGTG ATTTTTCAAT ATTTAGGATT TITTGGTAATC ACAATTACTT AGTTTGTGGT
	TGAGATAGCA ACACGAATCA GAACTATTTG GTGGACATAT TTTCAAAGGA GTAGCTCTCC ACTITGGGTA AAGAAGTGAT GCNGGTCGTG GTGGCTCACG CCTGTAATCC CAGCACTTTA GGGAGGCCAA GGCGGGTGGA TCACGAGGTC AGGAGATCGA
70	
70	GACCATCCTG GCTAACACGG TGAAACCCCG TCTCTACTAA AAAATACAAA AAATTAGCCA GGCGTGGTGG CGGGCGCCTG
	TAGTCCCACG TACTCGGGAG GCTGAGGCAG GAGAATGGCA TGAACCAGGG AGGCGGAGCT TGCCGTGAGC CGAGATAGCG
	CCACTGCAGT CCCTCCTGGG CAAAAGAGCA AGACTGCGTC TCAAAAAAAA AAAAAAAAA AAAAAAAAA GTGTGTGGAG
	TAGCAGGACA CCTGCAACAA TAATATTTTT CTAAATCCCT CTGAAAAATG CTAATCAAAG GGTTTTTTTC CTAAAAATTG
	TCTTAGAAAT AAAATTTCCC CTTTGGGAGA CCGAGGCTGG CAGATCACGA GGTCAGGAGA TAGAGACCAC GGTGAAACCC

CGTCTCTACT AAAAATACTA AAAATTAGCC GGGGNGTGGT GGTGGGTACA CCTGTAGTCC CAGCTACTTG GAGGCTGAGG CTGGAGAATC ACGTGAAC-3' (FRAG. NO:)(SEQ ID NO:11873)

5'-CCC TTG G (FRAG. NO:1702) (SEQ ID NO:11084)
5'-TT TGT TCT (FRAG. NO:1703) (SEQ ID NO:11085)
5'-TCT CCC TTG GGC TCT GGC TCC TTC TC-3' (FRAG. NO:1024) (SEQ ID NO:10403)
5'-TCT CTC TCC CTC TCT CTC TGT -3' (FRAG. NO:1025) (SEQ ID NO:10404)

5'- TTT TGT TCT TCC TTG CTG CC-3' (FRAG. NO:1027) (SEQ ID NO:10406)

5°- GCC CCG CTG CTT GTC T TC CTC G-3' (FRAG. NO:1028) (SEQ ID NO:10407)
5°-CTC TGT CCC TCT CTC TCT GTB CTC CTC BGG CTC CBT CBT CTC CCT TGG GC (FRAG.NO:1029)(SEQ ID NO:10408)

Human Beta Tryptase Nucleic Acid and Antisense Oligonucleotide Fragments

GGC TCG CCB GGB CGG GCB GCB GCB GCB GCB GB GB TCB GCB TCC TGG-3' (FRAG. NO:1704) (SEQ ID NO:11086) 5- GCT CCT GGG GGC CT-3' (FRAG. NO:1705) (SEQ ID NO:11087)
5-CGT BGG CGC-3' (FRAG. NO:1706) (SEQ ID NO:11088)
5'-T GGC CTG GGG-3' (FRAG. NO:1707) (SEQ ID NO:11089)

TCC TGG-3' (FRAG. NO:1032) (SEQ ID NO:10411)

Human Tryptase-I Nucleic Acid and Antisense Oligonucleotide Fragments
5-CTT GCT CCT GGG GGC CTC CTG GTC CCT CTG GCT GTT CCC GGC CCT GGB CTG GGG CGG GGG CGG GGC CGG GGG CGG NO:11090)

5'-CT CCT GGG GGC CTC CTG-3' (FRAG. NO:1709) (SEQ ID NO:11091)

5-B TCC TGG CCB CGG BBT TCC -3' (FRAG. NO:1710) (SEQ ID NO:11092)

5'-GTC CCT C-3' (FRAG. NO:1711) (SEQ ID NO:11093)

5'-CTT GCT CCT GGG GGC CTC CTG-3' (FRAG. NO:1033) (SEQ ID NO:10412) 5'-GTC CCT CTG GCT G TT CCC GGC-3' (FRAG. NO:1034) (SEQ ID NO:10413)

TGG CCB CGG BBT TCC -3' (FRAG. NO:1035) (SEQ ID NO:10414)

GCC CTT GCT GCC CTG GCT GT GCC CTG GGG GTC TGG GTT CGG CTG T CCC CBG CBG GBC CBG TCC CBT CCB CBG CGT GTG BTG BGT BGC CBT TCT CCT GCB GCC GBG-3'(FRAG.NO:1712)(SEQ ID NO:11094)

5-T TCT CCT GCB GCC GBG -3' (FRAG. NO:1713) (SEQ ID NO:11095) 5-CTT GCT GCC CTG GCT GT-3' (FRAG. NO:1714) (SEQ ID NO:11096)

5'- TCT TCT CCT GG-3' (FRAG. NO:1715) (SEQ ID NO:11097)

5'-GGT GTG CGG GGC CTG GTG CC-3' (FRAG. NO:1036) (SEQ ID NO:10415)

5'-CCT GGG CCT CGG GTG CTG CCT GT-3' (FRAG. NO:1037) (SEQ ID NO:10416)

5'-GCG CTG CCT TCT TCT CCT GG-3' (FRAG. NO:1038) (SEQ ID NO:10417) 5'-GTC CTC GCC GGG GCC CTT GCT GCC CTG GCT GT-3' (FRAG. NO:1039) (SEQ ID NO:10418)

5'-GCC CTG GGG GTC TGG GTT CGG CTG T-3' (FRAG. NO:1040) (SEQ ID NO:10419)
5'-CCC CBG CBG GBC CBG TCC CBT CCB CBG CGT GTG BTG BGT BGC CBT TCT CCT GCB GCC GBG -3'

(FRAG. NO:1041) (SEQ ID NO:10420)

Human Cyclooxygenase-2 Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GGG CGC GGG CGB GCB TCG C TTT GGG CTT TTC TCC TTT GGT T TGB GCG CCB GGB CCG CGC BCB GCB GCB GGG CGC

(FRAG. NO:1044) (SEQ ID NO:10423)

(FRAG. NO:1044) (SEQ ID NO:10423)

TGT TTG CTG GTG TCT GCG C 5'- CCC CBB CBG BBG CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC CBT GTT TCC TGT-3' (FRAG. NO: 1722) (SEQ ID NO:11104) 5'-TTC CTG T-3' (FRAG. NO:1723) (SEQ ID NO:11105)

129

5'-CTC TTT CTG CT-3' (FRAG. NO: 1724) (SEQ ID NO:11106) 5'-CCC CTT CTG TCC C-3' (FRAG. NO:1725) (SEQ ID NO:11107)

5'- GCC CTG CTC CTC TTT CTG CT-3' (FRAG. NO:1047) (SEQ ID NO:10424) 5'- TCC CTT GGT GGG TTG GGC C-3' (FRAG. NO:1048) (SEQ ID NO:10425)
5'- GCT GGT TGT TCT GGG GTT C-3' (FRAG. NO:1049) (SEQ ID NO:10427) 5'- TTG CTG CCC CTT CTG TCC C-3' (FRAG. NO:1050) (SEQ ID NO:10426) 5'- TGT TTG CTG GTG TCT GCG C -3' (FRAG. NO:1051) (SEQ ID NO:10428) 5'- CCC CBB CBG BBG BBG CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC CBT GTT TCC TGT-3' (FRAG. NO:1052) (SEQ ID NO:10429) 10 Human Eosinophil Peroxidase Nucleic Acid and Antisense Oligonucleotide Fragments GGG GGC GGC CCT GGT TGT CTT G GTT TGG GGG TTT CCG TTG GGG TTC TCC TGG CCC GGG CCT TGC CC GGC CGT GGT GCG GTB CTT GTC GCT GCB GCG CTC GGC CTG GTC CCG GBG BGC CACCGCTCCT GTCAGCCAAC AAATATCCAT TGAGCGACAC CTGTGTCCCA GGTGCTGCTC TGGGCCCTGG GAGAAGTGCA TCAGTGGGCT TGGTAGTAGA GGGTAGGGAT GGAGTGAAGG GTAGGCAGGA AGAATGTCCC CAGGCTGGTA GGAGGTGGGG TGGGGGGGTTT CAGTCTCAAA ACTCCCATGA AAACCAGAGA GAAGTTTCAG AACTCCACCC AAGAGGCTGG GTTTCTAGGG CCCAGAGCTG CCCTCCCCCA CCCTAGAATG GGCTATAAAA GTCCCTTCCC AGCTACGTCC AGAGAAGAGC TGGAGGAAGT GAGAGGTCGG CTGGGGGTCC TCAAAGTGAG AGGGGAGCAG AGGATCCTCC CGTGCAGGCT GTGGATGTCA CTCACTTCCC AGCTGGTGAA GCCTCGCTGC AGAGATGCAT CTGCTCCCAG CCCTGGCAGG GGTCCTGGCC ACACTCGTCC TCGCCCAGCC CTGTGAGGGC ACTGACCCAG GTAATAGTCC CCTAGACAGG CAAGGAGGAG GGAGGGGAAA TGGAAGGGGA AGCACTTGGG TCTTGGAGGG GGTCTTGTGG CTTGCTGAAC CCTGAGTICCC CATCTCTTTG AACAGCCTCC CCTGGGGCAG TGGAGACCTC GGTCCTGCGA GACTGCATAG CAGAGGCCAA GTTGCTGGTG GATGCTGCCT ACAATTGGAC CCAGAAGAGG TGGACTTGGG TCTGGGGGCT GCATGGGCCT GGGAGGATCA GT TAATACCTTG TGGGGTCAGG GAGCCCATGT CCCGTGCTGA TGTTATTTCC CCACCAGGTC CGGGCTGTC CCAACCAGAT TGTGCGCTTC CCCAATGAGA GACTGACCTC CGACCGTGGC CGAGCCCTCA TGTTCATGCA GTGGGGCCAG TTCATTGACC ATGACCTGGA CTTCTCCCCG GAGTCCCCGG CCAGAGTGGC CTTCACTGCA GGCGTTGACT GTGAGAGGAC CTGCGCCCAG CTGCCCCCCT GCTTTCCCAT -CAAGGTACCT ACCCTCAGCC AATCTCCCAT GCCCTTGTGT GGCCTCCCCC AAAGGCAAGG
TGCTGGGGGT GGGGATCTGG AAGACTGGAG CACCATCCTT AAGGAGCTGC CTGTGGAGCT AGGGTATGAG ACAGAGACAC AAG CACTGTCTCC TCTTCCATCT CAGATCCCAC CCAATGACCC CCGCATCAAG AACCAGCGTG ACTGCATCCC TTTCTTCCGC TCGGCACCCT CATGCCCCCA AAACAAGAAC AGAGTCCGCA ACCAGATCAA CGCGCTCACC TCCTTTGTGG ACGCCAGCAT GGTGTATGGC AGTGAGGTCT CCCTCTCGCT GCGGCTCCGC AACCGGACCA ACTACCTGGG GCTGCTGGCC ATCAACCAGC GCTTTCAAGA CAACGGCCGG GCCCTGCTGC CCTTCGACAA CCTGCACGAT GACCCCTGTC TCCTCACCAA CCGCTCGGCG CGCATCCCCT GCTTCCTGGC AGGTCAGACA GGGAGGAAGG TGGTGTCTTC CCAGGAAACA GCCATCCCTG GGGTCCCAAC TGGGAAGCAA TGGTGGGATG TGGTGAAGGT ACATGGTTTG GGACCTCAGT ATTAGGCACA CCATAAGCAT GGATCTGTGC AC TGAAGAGATG GAGGTCCAGT GAGGGCCAGG AGTTTGGCCC ACCCCGTCTC TCCCATCCCC AGCCCTGGGT CTACCCTGGT AGAAAGACAT TTCTCTGGGA AAGGCTGCAG TAAATCTGAG CTTGGGGTTT TCAAGGTGAC ACCCGATCAA CGGAAACCCC CAAACTGGCA GCCATGCACA CCCTCTTTAT GCGAGAGCAC AACCGGCTGG CCACCGAGCT GAGACGCCTG AATCCCCGGT GGAATGGAGA CAAACTGTAC AATGAGGCTC GGAAGATCAT GGGGGCCATG GTCCAGGTAA GGAGCTCTGC ATCCCAGCAT CTTTGTATCT CCACCCACCA ATAGTAAATT AATGTTGTCA CATTTGACGT GATGACAATA AAGAATATGT CTGAGCCACC CTTTGAAAAG GCAAGGGTAT GGGTGAGTAG CCTCTGGGGA ATGTTCCTCC TGTCTTCCCT TCCAGATCAT CACCTACCGA GACTTTCTGC CCCTGGTTCT GGGCAAGGCC CGGGCCAGGA GAACCCTGGG GCACTACAGG GGGTACTGCT CCAATGTGA CCCACGGGTG GCCAATGTCT TCACCCTGGC CTTCCGCTTT GGCCACACAA TGCTCCAGCC CTTCATGTTC CGCTTGGACA GTCAGTACCG GGCCTCCGCA CCCAACTCGC ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT 50 AATTCCAGGC CCTAGGACTT TGGGGGAAA TTAGGAGCAT CCAACTA GAATTCCGTG GCCAGGACCC CTGCCAGGGC ACTGACCAG CCTCCCCTGG GGCAGTGGAG ACCTCGCCCAGGGCC CTGCCAGGGCC ACTGACCAACTA GAATTCCGTG GCCAGGACCC CTGCCAGGGC ACTGACCCAG CCTCCCCTGG GGCAGTTGGAGAG ACCTCGGTCC TGCCAGCAGTTC CAACCAGCC CATGGACCTC CTGTCCTACT TCAAACAACC GGTAGCAGCC ACCAGGACAG TTGTTCGGGC CGCAGATTAT ATGCATGTGG CTTTGGGGCT GCTTGAAGAG AAGTTACAAC CCCAGCGGTC CGGACCCTTC ATTGTCACTG ATGTGCTAAC AGAACCACAG CTGCGGCTGC TGTCCCAGGC CAGTGGCTGT GCTCTCCGGG ACCAGGCCGA GCGCTGCAGC GACAAGTACC GCACCATCAC TGGACGGTGC AACAACAAGA

GCACTACAGG GGGTACTGCT CCAATGTGGA CCCCACGGGTG GCCAATGTCT TCACCCTGGC CTTCCGCTTT GGCCACACAA
TGCTCCAGCC CTTCATGTTC CGCTTGGACA GTCAGTACCG GCCACTCGCA CCCAACTCGC ATGTCCCACT TAGCTCTGCC
TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGGGGCATCG ACCCCATCCT CCGGGGCCTC ATGGCCACCC CTGCCAAGCT
GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC CGGCTGTTTC GGCAAGTGAG GAGGATTGGG CTGGACCTGG

CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCCTTCC AGGGTACAAT GCTTGGAGGC GCTTCTGTGG GCTCTCCCAG CCCCGGAATT TGGCACAGCT TAGCCGGGTG CTGAAAAACC AGGACTTGGC AAGGAAGTTC CTGAATTTGT ATGGAACACC TGACAACATT GACATCTGGA TTGGGGCCAT CGCTGAGCCT CTTTTGCCGG GGGCTCGAGT GGGGCCTCTT CTGGCTTGTC TGTTCGAGAA CCAGTTCAGA AGAGCCGAGA CGGAGACAGG TTCTGGTGGC AGAACGAGGT GTTTTCACCA AAGACAGCGC AAGGCCCTGA GCAGAATTTC CTTGTCTCGA ATTATATGTG ACAATACCGG TATCACCACG GTTTCAAGGG ACATCTTCAG
AGCCAACATC TACCCTCGGG GCTTTGTGAA CTGCAGCCGT ATCCCCAGGT TGAACCTATC AGCCTGGCGA GGGACATGAG GCTTCTGCAG GAGTCTATCC CAAGTCTCCA ACTTTTGGAG ACAAGGGGAA GGGGAGGACC ATGAGGCTGC CTTGTCTCCC TGGAGCAAGT GCAGGCTCGT GACGCTTCTG CTGGCTACAG CTCAGAGCTG GGTTCCCCAG CCAGGAGTGA AGGCTGGGGG CTCCTATCAG CAATGGACCT TCCGCCTTGG GAGCCTCTTA GGTATTAGGC TATGAATCAG CGCCACGTGC AAAGGCTTGG GAGCCAAGCC ATGTGGTCTT GCACCCCAGG CAAGAAAAGT CAGCTGGAGG GTTTACAGCA CTTTCTACTG TTTCCCAGCC CTCCCTCCCC TCCCTCACCA TGACTAAGAG ACCACTCGGT CCTAGCCTCC AGACACCCCA CAATACTCCT CTGAGCCTGA GGCCAGGCAG CATGCTCTGC TTCTACCAAT AAAGCACTGC CGGAATTC-3' (FRAG. NO: 1726) (SEQ ID NO:12377) 5'-CACCGCTCCT GTCAGCCAAC AAATATCCAT TGAGCGACAC CTGTGTCCCA GGTGCTGCTC TGGGCCCTGG GAGAAGTGCA TCAGTGGGCT TGGTAGTAGA GGGTAGGGAT GGAGTGAAGG GTAGGCAGGA AGAATGTCCC CAGGCTGGTA GGAGGTGGGG TGGGGGGTTT CAGTCTCAAA ACTCCCATGA AAACCAGAGA GAAGTTTCAG AACTCCACCC AAGAGGCTGG GTTTCTAGGG CCCAGAGCTG CCCTCCCCA CCCTAGAATG GGCTATAAAA GTCCCTTCCC AGCTACGTCC AGAGAAGAGC TGGAGGAAGT GAGAGGTCGG CTGGGGGTCC TCAAAGTGAG AGGGAGCAG AGGATCCTCC CGTGCAGGCT GTGGATGTCA CTCACTTCCC AGCTGGTGAA GCCTCGCTGC AGAGATGCAT CTGCTCCCAG CCCTGGCAGG GGTCCTGGCC ACACTCGTCC TCGCCCAGCC CTGTGAGGGC ACTGACCCAG GTAATAGTCC CCTAGACAGG CAAGGAGGG GGAGGGGAAA TGGAAGGGGA AGCACTTGGG TCTTGGAGGG GGTCTTGTGG CTTGCTGAAC CCTGAGTCCC CATCTCTTTG AACAGCCTCC CCTGGGGCAG TGGAGACCTC GGTCCTGCGA GACTGCATAG CAGAGGCCAA GTTGCTGGTG GATGCTGCCT ACAATTGGAC CCAGAAGAGG TGGACTTGGG TCTGGGGGCT GCATGGGCCT GGGAGGATCA GT-3' (FRAG. NO:)(SEQ ID NO:11852)
5'-TAATACCTTG TGGGGTCAGG GAGCCCATGT CCCGTGCTGA TGTTATTTCC CCACCAGGTC CGGGCTGTCT CCAACCAGAT TGTGCGCTTC CCCAATGAGA GACTGACCTC CGACCGTGGC CGAGCCCTCA TGTTCATGCA GTGGGGCCAG TTCATTGACC ATGACCTGGA CTTCTCCCCG GAGTCCCCGG CCAGAGTGGC CTTCACTGCA GGCGTTGACT GTGAGAGGAC CTGCGCCCAG CTGCCCCCCT GCTTTCCCAT CAAGGTACCT ACCCTCAGCC AATCTCCCAT GCCCTTGTGT GGCCTCCCCC AAAGGCAAGG TGCTGGGGGT GGGGATCTG AAGACTGGAG CACCATCCTT AAGGAGCTGC CTGTGGAGCT AGGGTATGAG ACAGAGACAC AAG-3' (FRAG.NO:_)(SEQ ID NO:11853) 5'-CACTGTCTCC TCTTCCATCT CAGATCCCAC CCAATGACCC CCGCATCAAG AACCAGCGTG ACTGCATCCC TTTCTTCCGC 30 TCGGCACCCT CATGCCCCA AAACAAGAAC AGAGTCCGCA ACCAGATCAA CGCGCTCACC TCCTTTGTGG ACGCCAGCAT GGTGTATGGC AGTGAGGTCT CCCTCTCGCT GCGGCTCCGC AACCGGACCA ACTACCTGGG GCTGCTGGCC ATCAACCAGC GCTTTCAAGA CAACGGCCGG GCCCTGCTGC CCTTCGACAA CCTGCACGAT GACCCCTGTC TCCTCACCAA CCGCTCGGCG CGCATCCCCT GCTTCCTGGC AGGTCAGACA GGGAGGAAGG TGGTGTCTTC CCAGGAAACA GCCATCCCTG GGGTCCCAAC TGGGAAGCAA TGGTGGGATG TGGTGAAGGT ACATGGTTTG GGACCTCAGT ATTAGGCACA CCATAAGCAT GGATCTGTGC AC-3' (FRAG.NO:_)(SEQ ID NO:11854) S'-TGAAGAGATG GAGGTCCAGT GAGGGCCAGG AGTTTGGCCC ACCCCGTCTC TCCCATCCCC AGCCCTGGGT CTACCCTGGT AGAAAGACAT TTCTCTGGGA AAGGCTGCAG TAAATCTGAG CTTGGGGTTT TCAAGGTGAC ACCCGATCAA CGGAAACCCC CAAACTGGCA GCCATGCACA CCCTCTTTAT GCGAGAGCAC AACCGGCTGG CCACCGAGCT GAGACGCCTG AATCCCCGGT GGAATGGAGA CAAACTGTAC AATGAGGCTC GGAAGATCAT GGGGGCCATG GTCCAGGTAA GGAGCTCTGC ATCCCAGCAT CCCCC-3' (FRAG.NO:)(SEO ID NO:11855) 5'-CTTTGTATCT CCACCCACCA ATAGTAAATT AATGTTGTCA CATTTGACGT GATGACAATA AAGAATATGT CTGAGCCACC CTTTGAAAAG GCAAGGGTAT GGGTGAGTAG CCTCTGGGGA ATGTTCCTCC TGTCTTCCCT TCCAGATCAT CACCTACCGA GACTTCTGC CCCTGGTTCT GGGCAAGGCC CGGGCCAGGA GAACCCTGGG GCACTACAGG GGGTACTGCT CCAATGTGGA CCCACGGGTG GCCATACAGG CCTCCCTGG CTTCCAGGC CTTCATGTTC CGCTTGGACA GTCAGTACCG GGCCTCCGCA CCCAACTCGC ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGTGACCAGG TTTTCCAGGG GGCAAATGGG GGTGAGGGTG GGGAGCATGC CCTCCCCTAG GTGG-3' (FRAG.NO:_)(SEQ ID 5'-TCCAGCTGCT TCATGTCTCT CCAGAACTCT GTTTCCTGAC AAACGTTACT AACATACCCG ACTGGCTTGT CCAGCTCTGG GCTAGCTTGG CATCATGTGA TAACCCAAGT AGCTTCCCAG AGGCTGGTCC AATCTGTGCT GCTCACATTC CCTGCCACCA GGGGGCATCG ACCCCATCCT CCGGGGCCTC ATGCCCACCC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC CGGCTGTTTC GGCAAGTGAG GAGGATTGGG CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCCTTCC AGGTGAGGGG GCTGTCCACC TCTTCTCCCA GCTTTGCTCG GGCCAGGCTG CTCAAGGGGT TCTGGGAAGA CCCTGGTACC-3' (FRAG.NO:_)(SEQ ID NO:11857) 5'-CGACTGCCTG GTAGGTTCTG GTGGCAGAAA CGAGGTGTTT TCACCAAAAG ACAGCGCAAG GCCCTGAGCA GAATTTCCTT 55 GTCTCGAATT ATATGTGACA ATACCGGTAT CACCACGGTT TCAAGGGACA TCTTCAGAGC CAACATCTAC CCTCGGGGCT TTGTGAACTG CAGCCGTATC CCCAGGTTGA ACCTATCAGC CTGGCGAGGG ACATGAGGCT TCTGCAGGTA AGGGGAGGCC ACCTCCAGCA CCCTGGGCTG GTTAAGCCTC ACATCCTTCC CTGGATGGAT GGCTGAGTCC TCTTAGGTCT CTAAGCAGAG AAAACAGAAC TTGTCACTAG GTACTCTTTC CAAGTGGCTT CCCAATGTGC TAGTTTCTGG GCTGACAGTC AATTCCAGGC CCTAGGACTT TGGGGGGAAA TTAGGAGCAT CCAACTA-3' (FRAG.NO:_)(SEQ ID NO:11858) 5'-GAATTCCGTG GCCAGGACCC CTGCCAGGGC ACTGACCCAG CCTCCCCTGG GGCAGTGGAG ACCTCGGTCC TGCGAGACTG 5'-GAATTCCGTG GCCAGGACCC CTGCCAGGGC ACTGACCCAG CCTCCCCTGG GGCAGTGGAG ACCTCGGTCC TGCGAGACTG
CATAGCAGAG GCCAAGTTGC TGGTGGATGC TGCCTACAAT TGGACCCAGA AGAGCATCAA GCAGCGGCTT CGCAGCGGTT
CAGCCAGCCC CATGGACCTC CTGTCCTACT TCAAACAACC GGTAGCAGCC ACCAGGACAG TTGTTCCGGC CGCAGATTAT
ATGCATGTGG CTTTGGGGCT GCTTGAAGAG AAGTTACAAC CCCAGCGGTC CGGACCCTTC ATTGTCACTG ATGTGCTAAC
AGAACCACAG CTGCGGCTGC TGTCCCAGGC CAGTGGCTGT GCTCTCCCGG ACCAGCGAG CGCCTGCAGC GACAAGTACC
GCACCATCAC TGGACGGTGC AACAACAAGA GGAGACCCTT GCTAGGGGCC TCCAACCAGG CTCTGGCTCG CTGGCTGCCC
GCCGAGTATG AGGATGGGCT GTCGCTCCCC TTCGGCTGGA CCCCCAGCAG GAGGCCGAAT GGCTTCCTTC TCCCTCTTGT
CCGGGCTGTC TCCAACCAGA TTGTGCGCTT CCCCAATGAG AGACTGACCT CCGACCGTGG CCGAGCCCTC ATGTTCATGC
AGTGGGGCCA GTTCATTGAC CATGACCTGG ACTTCTCCCC GGAGTCCCCC GCCAGAGTGG CCTTCACTGC AGGCGTTGAC
TGTGAGAAGGA CCTGCGCCCA GCTGCCCCC TTCATGCCCC CAAAACAAGA ACAGAGTCCG CCAACCAGTC AAAACAAGCA
TGACTGCATC CCTTTCTTCC GCTCGGCACC CTCATGCCCC CAAAACAAGA ACAGAGTCCG CAACCAAGATC AACGCGCTCA TGACTGCATC CCTTTCTTCC GCTCGGCACC CTCATGCCCC CAAAACAAGA ACAGAGTCCG CAACCAGATC AACGCGCTCA CCTCCTTTGT GGACGCCAGC ATGGTGTATG GCAGTGAGGT CTCCCTCTCG CTGCGGCTCC GCAACCGGAC CAACTACCTG GGGCTGCTGG CCATCAACCA GCGCTTTCAA GACAACGGCC GGGCCCTGCT GCCCTTCGAC AACCTGCACG ATGACCCCTG TCTCCTCACC AACCGCTCGG CGCGCATCCC CTGCTTCCTG GCAGGTGACA CCCGATCAAC GGAAACCCCC AAACTGGCAG CCATGCACAC CCTCTTTATG CGAGAGCACA ACCGGCTGGC CACCGAGCTG AGACGCCTGA ATCCCCGGTG GAATGGAGAC

```
WO 02/085308
                                                                                                                                                     PCT/US02/13135
            GGGCAAGGCC CGGGCCAGGA GAACCCTGGG GCACTACAGG GGGTACTGCT CCAATGTGGA CCCACGGGTG GCCAATGTCT
           TCACCCTGGC CTTCCGCTTT GGCCACAA TGCTCCAGC CTTCATGTTC CGCTTGGACA GTCAGTACCG GGCCTCCGCA
CCCAACTGGC ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGGGGCATCG ACCCCATCCT
CCGGGGCCTC ATGGCCACC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC CGGCTGTTTC
GGCAAGTGAG GAGGATTGGG CTGGACCTG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCCTTCC AGGGTACAAT
            GCTTGGAGGC GCTTCTGTGG GCTCTCCCAG CCCCGGAATT TGGCACAGCT TAGCCGGGTG CTGAAAAAACC AGGACTTGGC AAGGAAGTTC CTGAATTTGT ATGGAACACC TGACAACATT GACATCTGGA TTGGGGCCAT CGCTGAGCCT CTTTTGCCGG GGGCTCGAGT GGGGCCTCTT CTGGCTTGTC TGTTCGAGAA CCAGTTCAGA AGAGCCGAGA CGGAGACAGG TTCTGGTGGC
           AGAACGAGGT GTTTTCACCA AAGACAGCGC AAGGCCCTGA GCAAAATTTC CTTGTCTCGA ATTATATGTG ACAATACCGG
TATCACCACG GTTTCAAGGG ACATCTTCAG AGCCAACATC TACCCTCGGG GCTTTGTGAA CTGCAGCCGT ATCCCCAGGT
           TATCACCACG GITTCAAGGG ACATCITCAG AGCCAACATC TACCCTCGGG GCTTTGTGAA CTGCAGCCGT ATCCCCAGGT
TGAACCTATC AGCCTGGCGA GGGACATGAG GCTTCTGCAG GAGTCTATCC CAAGTCTCCA ACTTTTGGAG ACAAGGGGAG
GGGAGGACC ATGAGCTGC CTTGTCTCCC TGGAGCAAGT GCAGGCTCGT GACGCTTCTG CTGGCTACAG CTCAGAGCTG
GGTTCCCCAG CCAGGAGTGA AGGCTGGGGG CTCCTATCAG CAATGGACCT TCCGCCTTGG GAGCCTCTTA GGTTATAGGC
TATGAATCAG CGCCACGTGC AAAGGCTTGG GAGCCAAGCC ATGTGGTCTT GCACCCCAGG CAAGAAAAGT CAGCTGGAGG
GTTTACAGCA CTTTCTACTG TTTCCCAGCC CTCCCTCCCC TCCCTCACCA TGACTAAGAG ACCACTCGGT CCTAGCCTCC
AGACACCCCA CAATACTCCT CTGAGCCTGA GGCCAGGCAG CATGCTCTGC TTCTACCAAT AAAGCACTGC CGGAATTC-3'
            (FRAG.NO:_)(SEQ ID NO:11859)
           5'-TC GGC CTG GTC CCG G-3' (FRAG. NO: 1727) (SEQ ID NO:11109)
5'-TGG GGG TTT CCG TTG-3' (FRAG. NO: 1728) (SEQ ID NO:11110)
5'-TG GTC CCG GBG BGC -3' (FRAG. NO: 1729) (SEQ ID NO:11111)
- 20
            5'-GCG CTC GGC CTG GTC CCG G-3' (FRAG. NO:1053) (SEQ ID NO:10430)
            5'-GGG TCT CCT CTT GTT GTT GC-3' (FRAG. NO:1054) (SEQ ID NO:10431)
5'-TTG CGC CTC CTG CTG GGG GT CC-3' (FRAG. NO:1055) (SEQ ID NO:10432)
            5'-CTC TGT TCT TGT TTT GGG GGC-3' (FRAG. NO:1056) (SEQ ID NO:10433)
            5'-GGG CCC GGC CGT TGT CTT G-3' (FRAG. NO:1057) (SEQ ID NO:10434)
            5'-GTT TGG GGG TTT CCG TTG-3' (FRAG. NO:1058) (SEQ ID NO:10435)
            5'-GGG TTC TCC TGG CCC GGG CCT TGC CC-3' (FRAG. NO:1059)(SEQ ID NO:10436)
           5'-GGC CGT GGT CCC GGC TTC GTT GC-3' (FRAG. NO:1060) (SEQ ID NO:10437)
5'-CCT GTC TCC GTC TCG GCT CTT CTG-3' (FRAG. NO:1061) (SEQ ID NO:10438)
           5'-GGG CCT TGC GCT GTC TTT GGT G-3' (FRAG. NO:1062) (SEQ ID NO:10439)
5'-GCB CCG TCC BGT GBT GGT GCG GTB CTT GTC GCT GCB GCG CTC GGC CTG GTC CCG GBG BGC -3' (FRAG. NO:1063) (SEQ
            ID NO:10440)
            Human Intercellular Adhesion Molecule-1 (ICAM-1)
            Nucleic Acid and Antisense Oligonucleotide Fragments
            TCT CCT GGC TCT GGT TCC CC GCT GCG CCC GTT GTC CTC TGG GGT GGC CTT C GCT CCC GGG TCT GGT TCT TGT GT TGG
           GGB CCB GGB GTG CGG GCB GCG CGG GCC GGG GGC TGC TGG GBG CCB TBG CGB GGC TGB G-3'
                                                                                                                                                       (FRAG. NO: 1730) (SEO
            ID NO:11112)
           5'-GGG GGC TGC TGG G-3' (FRAG. NO: 1731) (SEQ ID NO:11113)
5'-T GTC CTC CGG CGT CCC-3' (FRAG. NO: 1732) (SEQ ID NO:11114)
5'-G CCB TBG CGB GGC TGB G-3' (FRAG. NO: 1733) (SEQ ID NO:11114)
            5'-CTC TGG GGT GGC CTT C-3' (FRAG. NO:1734) (SEQ ID NO:11116)
           5'-GCG CGG GCC GGG GGC TGC TGG G-3' (FRAG. NO:1064) (SEQ ID NO:10441)
           5'-GGT TGG CCC GGG GTG CCC C-3' (FRAG. NO:1065) (SEQ ID NO:10442)
5'-GCC GCT GGG TGC CCT CGT CCT CTG CGG TC-3' (FRAG. NO:1066) (SEQ ID NO:10443)
5'-GTG TCT CCT GGC TCT GGT TCC CC-3' (FRAG. NO:1067) (SEQ ID NO:10444)
            5'-GCT GCG CCC GTT GTC CTC TGG GGT GGC CTT C-3' (FRAG. NO:1068) (SEQ ID NO:10445)
            5'-GCT CCC GGG TCT GGT TCT TGT GT-3' (FRAG. NO:1069) (SEQ ID NO:10446)
            5'-TGG GGG TCC CTT TTT GGG CCT GTT GT-3' (FRAG. NO:1070) (SEQ ID NO:10447)
5'-GGC GTG GCT TGT GTG TTC GGT TTC-3' (FRAG. NO:1071) (SEQ ID NO:10448)
            5'-TGC CCT GTC CTC CGG CGT CCC-3' (FRAG. NO:1072) (SEQ ID NO:10449)
            5'- CGG BGC CTC CCC GGG GCB GGB TGB CTT TTG BGG GGG BCB CBG BTG TCT GGG CBT TGC CBG GTC CTG GGB BCB GBG
```

50

CCC CGB GCB GGB CCB GGB GTG CGG GCG GCG GGC GGG GGC TGC TGG GBG CCB TBG CGB GGC TGB G-3*7? (FRAG. NO:1073) (SEQ ID NO:10450)

Human Vascular Cell Adhesion Molecule 1 (VCAM-1)

Nucleic Acid and Oligonucleotide Fragments

CIT TIT TCT TC GTC TIT GTT TTC TCT TCC TTG CTG BGC BBG BTB TCT BGB TTC TGG GGT GGT CTC GBT TTT BBBB GCT TGB GBB GCT GCB BBC BTT BTC CBB BGT BTB TTT GBG GCT CCB BGG BTC BCG BCC BTC TTC CCB GGC BTT TTB BGT TGC TGT CGT-3'(FRAG.NO:1735)(SEQ ID NO:11117)

TGC TGT CGT-3'(FRAG.NO:1735)(SEQ ID NO:11117)
5'-C TGT CGT-3' (FRAG. NO:1736) (SEQ ID NO:11118)
5'-TGC TTC CTC-3' (FRAG. NO:1737) (SEQ ID NO:11118)
5'-TGC TTC CTC-3' (FRAG. NO:1737) (SEQ ID NO:11119)
HSVCAMIASI: 5'-CCT CTT TTC TGT TTT TCC C-3' (FRAG. NO:1074) (SEQ ID NO:10451)
HSVCAMIAS2: 5'-CTC TGC CTT TGT TTG GGT TCG-3' (FRAG. NO:1075) (SEQ ID NO:10452)
HSVCAMIAS3: 5'-CTC TGC TTC TGC TTC TCC C-3' (FRAG. NO:1076) (SEQ ID NO:10453)
HSVCAMIAS4: 5'-CTG TGT CTC CTG TCT CCG CTT TTT TCT TC-3' (FRAG. NO:1077) (SEQ ID NO:10454)
HSVCAMIAS5: 5'-GTC TTT GTT GTT TTC TCT TCC TTG-3' (FRAG. NO:1078) (SEQ ID NO:10455)
CTG BGC BBG BTB TCT BGB TTC TGG GGT GGT CTC GBT TTT BBBB GCT TGB GBB GCT GCB BBC BTT BTC CBB BGT BTT
GBG GCT CCB BGG BTC BCG BCC BTC TTC CCB GGC BTT TTB BGT TGC TGT CGT(FRAG. NO:1079)(SEQ ID NO:10456)

Luman Fradathalial I autocute Adhasian Molecula(FI A M. 1)

Human Endothelial Leukocyte Adhesion Molecule(ELAM-1)

Nucleic Acid and Antisense Oligonucleotide Fragments

5-BBG TGB GBG CTG BGB GBB BCT GTG BBG CBB TCB TGB CTT CBB GBG TTC TTT TCB CCC GTT CTT GGC TTC TTC TGT C GGC CGT CCT TGC CTG CTG G CCTGAGACAG AGGCAGCAGT GATACCCACC TGAGAGATCC TGTGTTTGAA CAACTGCTTC CCAAAACGGA AAGTATTTCA AGCCTAAACC TTTGGGTGAA AAGAACTCTT GAAGTCATGA TTGCTTCACA GTTTCTCTCA GCTCTCACTT TGGTGCTTCT CATTAAAGAG AGTGGAGCCT GGTCTTACAA CACCTCCACG GAAGCTATGA CTTATGATGA GGCCAGTGCT TATTGTCAGC AAAGGTACAC ACACCTGGTT GCAATTCAAA ACAAAGAAGA GATTGAGTAC CTAAACTCCA TATTGAGCTA TTCACCAAGT TATTACTGGA TTGGAATCAG AAAAGTCAAC AATGTGTGGG TCTGGGTAGG AACCCAGAAA CCTCTGACAG AAGAAGCCAA GAACTGGGCT CCAGGTGAAC CCAACAATAG GCAAAAAGAT GAGGACTGCG TGGAGATCTA CATCAAGAGA GAAAAAGATG TGGGCATGTG GAATGATGAG AGGTGCAGCA AGAAGAAGCT TGCCCTATGC TACACAGCTG CCTGTACCAA TACATCCTGC AGTGGCCACG GTGAATGTGT AGAGACCATC AATAATTACA CTTGCAAGTG TGACCCTGGC TTCAGTGGAC TCAAGTGTGA GCAAATTGTG AACTGTACAG CCCTGGAATC CCCTGAGCAT GGAAGCCTGG TTTGCAGTCA TICAGIGGAC ICAAGIGIGA GCAAATIGIG AACIGIACAG CCCIGAGCAT GCAAGCAGC TICAAGCAG ATGAGACCA
CCCACTGGGA AACITCAGCT ACAATICTTC CTGCTCTATC AGCTGTGATA GGGGTTACCT GCCAAGCAGC ATGAGACCA
TGCAGTGTAT GTCCTCTGGA GAATGGAGTG CTCCTATTCC AGCTGCAAT GTGGTTGAGT GTGATGCTG GACAAATCCA
GCCAATGGGT TCGTGGAATG TTTCCAAAAC CCTGGAAGCT TCCCATGGAA CACAACCTGT ACATTTGACT GTGAAGCAGA
ATTTGAACTA ATGGGAGCCC AGAGCCTTCA GTGTACCTCA TCGGGAATT GGGACAACCA GTGAAAGCT GTGAAAGCTG
TTCAAGACTG ATGCGCAAGACT ACATTCACACAC TGTAAAGCTG
TTCAAGACTG ATGCCACACACTG ATGCCACACACTTCAAAACTCG
TTCAAGACTG ATGCCACACACTTCAAAACTCG
TTCAAGACTG ATGCCACACACTTCAAAACTCG
TTCAAGACTTCAAAACTCG
TTCAAGACTTCAAAACTCG
TTCAACACACTTCAAAACTCG
TTCAACACACTTCAAAACTCG
TTCAACACACACTCCAAAACTCCAACACTTCAAAACTCG
TTCAACACACACTCCAAAACTCCAACACTCCAACACTTCAAAACTCG
TTCAACACACACTCCAACACTTCAACACTCAACACTCAAC TGACATGCAG GGCCGTCCGC CAGCCTCAGA ATGGCTCTGT GAGGTGCAGC CATTCCCCTG CTGGAGAGTT CACCTTCAAA TCATCCTGCA ACTTCACCTG TGAGGAAGGC TTCATGTTGC AGGGACCAGC CCAGGTTGAA TGCACCACTC AAGGGCAGTG GACACAGCAA ATCCCAGTTT GTGAAGCTTT CCAGTGCACA GCCTTGTCCA ACCCCGAGCG AGGCTACATG AATTGTCTTC CTAGTGCTTC TGGCAGTTTC CGTTATGGGT CCAGCTGTGA GTTCTCCTGT GAGCAGGGTT TTGTGTTGAA GGGATCCAAA AGGCTCCAAT GTGGCCCCAC AGGGGAGTGG GACAACGAGA AGCCCACATG TGAAGCTGTG AGATGCGATG CTGTCCACCA GCCCCCGAAG GGTTTGGTGA GGTGTGCTCA TTCCCCTATT GGAGAATTCA CCTACAAGTC CTCTTGTGCC TTCAGCTGTG
AGGAGGGATT TGAATTATAT GGATCAACTC AACTTGAGTG CACATCTCAG GGACAATGGA CAGAAGAGGT TCCTTCCTGC CAAGTGGTAA AATGTTCAAG CCTGGCAGTT CCGGGAAAGA TCAACATGAG CTGCAGTGGG GAGCCCGTGT TTGGCACTGT GTGCAAGTTC GCCTGTCCTG AAGGATGGAC GCTCAATGGC TCTGCAGCTC GGACATGTGG AGCCACAGGA CACTGGTCTG GCCTGCTACC TACCTGTGAA GCTCCCACTG AGTCCAACAT TCCCTTGGTA GCTGGACTTT CTGCTGCTGG ACTCTCCCTC
CTGACATTAG CACCATTTCT CCTCTGGCTT CGGAAATGCT TACGGAAAGC AAAGAAATTT GTTCCTGCCA GCAGCTGCCA
AAGCCTTGAA TCAGACGGAA GCTACCAAAA GCCTTCTTAC ATCCTTTAAG TTCAAAAGAA TCAGAAACAG GTGCATCTGG
GGAACTAGAG GGATACACTG AAGTTAACAG AGACAGATAA CTCTCCTCGG GTCTCTGGCC CTTCTTGCCT ACTATGCCAG ATGCCTTTAT GGCTGAAACC GCAACACCA TCACCACTTC AATAGATCAA AGTCCAGCAG GCAAGGACGG CCTTCAACTG
AAAAGACTCA GTGTTCCCTT TCCTACTCTC AGGATCAAGA AAGTGTTGGC TAATGAAAGG AAAGGATATT TTCTTCCAAG
CAAAGGTGAA GAGACCAAGA CTCTGAAATC TCAGAATTCC TTTTCTAACT CTCCCTTGCT CGCTGTAAAA TCTTGGCACA
GAAACACAAT ATTTTGTGGC TTTCTTTCTT TTGCCCTTCA CAGTGTTTCG ACAGCTGATT ACACAGTTGC TGTCATAAGA ATGAATAATA ATTATCCAGA GTTTAGAGGA AAAAAATGAC TAAAAATATT ATAACTTAAA AAAATGACAG ATGTTGAATG AIGAAIAAIA AIIAICCAGA GITIAGAGGA AAAAAAAGAC IAAAAATATI AIAACTIAAA AAAATGACAG AIGTIGAAIG CCCACAGGGCA AATGACAGGA AGGTTACTA TGGCACAATTT AATCACTTTC ATCCCTATGG GATTCAGTGC TTCTTAAAGA GTTCTAAAGG ATTGGATAT TTTTACTTGC ATTGAATATA TTATAATCTT CCATACTTCT TCATTCAATA CAAGTGGTGT AGGACTTAA AAAACTTGTA AATGCTGTCA ACTATGATAT GGTAAAAGTT ACTTATTCTA GATTACCCCC TCATTGTTTA TTAACAAATT ATGTTACATC TGTTTTAAAT TTATTTCAAA AAGGGAAACT ATTGTCCCCT AGCAAGGCAT GATGTTAACC AGAATAAAGT TCTGAGTGTT TTTACTACAG TTGTTTTTTG AAAACATGGT AGAATTGGAG ACTAAAAACT GAATGGAAGG TTTGTATATT GTCAGATATT TTTTCAGAAA TATGTGGTTT CCACGATGAA AAACTTCCAT GAGGCCAAAC GTTTTGAACT ATAAAAGCA TAAATGCAAA CACACAAAGG TATAATTTTA
TGAATGCTT TGTTGGAAAA GAATACAGAA AGATGGATGT GCTTTGCATT CCTACAAAGA TGTTTGTCAG ATGTGATATG
TAAACATAAT TCTTGTATAT TATGGAAGAT TTTAAATTCA CAATAGAAAC TCACCATGTA AAAGAGTCAT CTGGTAGATT
TTTAACGAAT GAAGATGTCT AATAGTTATT CCCTATTTGT TTTCTTCTGT ATGTTAGGGT GCTCTGGAAG AGAGGAATGC CTGTGTGAGC AAGCATTTAT GTTTATTAT AAGCAGATTT AACAATTCCA AAGGAATCTC CAGTTTTCAG TTGATCACTG GCAATGAAAA ATTCTCAGTC AGTAATTGCC AAAGCTGCTC TAGCCTTGAG GAGTGTGAGA ATCAAAACTC TCCTACACTT CCATTAACTT AGCATGTGT GAAAAAAAA GTTTCAGAGA AGTTCTGGCT GAACACTGGC AACGACAAAG CCAACAGTCA
AAACAGAGAT GTGATAAGGA TCAGAACAGC AGAGGTTCTT TTAAAGGGGC AGAAAAACTC TGGGAAATAA GAGAGAACAA
CTACTGTGAT CAGGCTATGT ATGGAATACA GTGTTATTTT CTTTGAAATT GTTTAAGTGT TGTAAATATT TATGTAAACT
GCATTAGAAA TTAGCTGTGT GAAATACCAG TGTGGTTTGT GTTTGAGTTT TATTGAGAAT TTTAAATTAT AACTTAAAAT ATTITATAAT TITTAAAGTA TATATTTATT TAAGCTTATG TCAGACCTAT TTGACATAAA ACTATAAAGG TTGACAATAA ATGTGCTTAT GTTT GATCAAAATT TTTACCTATT ATGCATTTGA TATATAAATA AGTATATAAA TGCACACACA GACACAGCAA TGATGGTGAA CAGTCTTCAT ACAATTATAT GGATGAATCT CATAAAATGC TGAGTTAAAG AAATCAGACC AAAGAACATA
TACTGAAAGA TTCTCTCAT ATACAAAGTT CAAAAATAGG TGGACCAATT CATGGTGGTG TTAGAAAATCA GAAGAGAGGC
TACCTTTGTG GGGAGGGGAC AGTTTAATGC CCAGAAGCGG TAAATAAGGA ATCCTCTGGG GAGTGGTAAT GATCTGGATG
CTGGCTACAG GATGTGTTGG TTGTAAAAAT GCATTTTTTT ATATCTAGCT TTTTCCATGT GTATATTATA CTTCAAAGAA GTTCAGTTAA TAATTTCTCA TGTCACTGTA GAGTAGCTCA GTTAGCCCCA GCAAGCCTCT GGCTTAATCT TGTTTTACCT TAAGCCATCA GTCATTTACA AGTAGGAAAA TTCACAGGGA AAGTTAGAGT ATAAAATCCA GAATGAAGGT TTACTGGGTA AGAGTCTCTC CATITTCCAA AGCCCGTTTA TTTCTTGATT CCAGTTCTTA AGAAGTCTCA GCATTGTGTC TTTTTCATGT ATCTTACAAG AAGACAGCAT GTGCTTCTAA CACCTGATAC ATTGTATCTA CCAGCACTTG GTAAACAGAA AAGAACCACA TTTTTCTTGT AGGAGAAATT TGGTGCCTAT TTCCTACCAG GCACCAATAA GTGGGACCAA TAGGTGGGAT TAAAGATACA GTAGAAAGTA TTTAAAACTT GCCAGGGGGC AATAGTCTGA AAATAAGTAA ATTGGTGCTA TAGAATGGAA GTTACAGGCT TCTTTCTTT TTCCCACAAG ATCTGCTCCT TGAGCCCCTA GAGACTTTTC TGTCTGTTAC TGTTTCTTCA TTCCTCATCT GCAGAGCCAG CCCTGAGAAG TGCAGACCAA AGCCAGGGAA GGCTCTGCAA AGATGTACAA ATGGAAGTCA CCTTAATAAC CTCTGACTGC TGCGCATAAT ACATTTCACT CAAAAGAGGG GTTAAACAAT GGAACAGAAT ACAGAGGCCA GAAATAATGC TGAACACTGA CAACCATCTG ATCTTTGACA AAATCCACAA AAACAGCAA TGGAGAAAGG ACTCCCTATT CCATAATGGT GCTGGGATAA CTGTCTAGCT ATATACAGAA GATTGAACCT GGGCCCCTTC CTTACATCAT ATACAAAAAA TAACTCAAGA TGGAGTAAAG ACTTAAATCT AAAACCAAAC ACTATAAAAA CCCTGGAAGA TAGCCTGGGA AATACCATTC TGGACATAGG ACCTGGCAAA GACTTCATGA CAAGACACCA AAAGCAATAG CAACAAAAAC CAAATTGACT AATGAAACTCT TTAGTTGTAC AACAGATAGT TTATCTGTAC AACAAAATAA ACTATCAACA GAGTAAACAA CCTACAGAAT GGAAAAATTT TTTGCAAACT ATGCATCTGA CAAAGGTCTA ATATCCAGAA TCTATAAGGA ATTTAAACAA ATTTACAAGC AAAAAAATGA CCTCATTAAA AAGTGGGCAA AGGACATGAA CAGATGCTTT TCAAAATAAG ACATTCACAC ATCCAACAAC CATATGAAAA GATGTTTAAC ATCACTAATC ATTAGAGGAA TACAAATCAA AAGCATAATA AGATACCATC TAATACCAGT AGGAATGACT ACTATTAAAA AGTCAGACAA TAACAGATGC TGGTGAAGGT TGTGGAGAAA AGGGAATGTT TATGCACTGC TAGTGGGAAT GTAAACTAGT TCAGCCATTG TGGAAGAGAG TGTGGTGATT CCTCAAAGAA TGTAAAACCG AACTGCCTTT CAATCCAGCA

	THE RESIDENCE OF THE PROPERTY	~~
	ATCCCATTAT TGGATATACA CCAAAAGGAA TAGAAATTGT TTTACCGTAA AGGCGCATGC ATGCATATGT TCATTACA	
	ACTATTTACG ATAGCAAAGA CATGGAATCG TCTAAATGCC CATCAGTGGT AGACTAGCTA AAAAAAAAA AATGTGGT	
	ATATACATCA CAGAATAGTA TGCAGCCATA AAAATGAACA AGATCATCAT GTCCTTTGCA GCAACATGGA TGTAGTTG	
	GGCCATTATC CTAAGCAAAT TAATGCAGGA ACAGAAAGCC AAATACCACA TGTTCTCATT TATAAGTGAC AGCTAAAT	ΑT
5	TGAGTACACA TGGACACAAA GAAGGGAACA ATAGACATGG GACCTACTTG AGAATAGAGG GTGGGAGGAG GGTGAGGA	TC
	AAAAAGTACC CATAGGACAC TGTGCTTATT ACCTGGGTGA TGAAATAATT TGCACACCAA ACCCCTGTGA CACACAAI	TT
	ACCTATATAG AAAACCTGTG CATGTACCCC TGAACCTAAA AGTTAATGGT GGGGGGGTGG GGTTAAGCTA CTTTGTGG	
	TAAATCTGAG CATTCATATI AAAATAAAAT ATTTACCTCA TAGAGTAAT TAACATTAT TAAGCAAAGA GCCAAGTA	
10	TTACACACAT GATGTTTAAT CTCACAATGA TCTTTAATCT CATAACAACC GTCCATTGTA TGTACATATG TGGAAATT	
10	GCCTTGGAGA GATTAAATGC ATGGGGCATG CCATTTGACT AGAAACTGGA AGCATCAGGA TTTAAACTCA GTTCTGAA	
	GTTTTGTAGG CTTTGTTTTT TCCACATTAT AGCATGGCCT GCCATGAAGA ACAGGTCCTT TCTGGTGTTT GTCTTGTT	TG
	GTTTAAGTGA AGCAAATATT TATTTAAATA TTCAAGATAT GCTGTTAAAT TTTTACTCAA AAATTTGAGT ACAGTATG	GA
	TCTTCTGAAG CCAAATAACT CTTATTCAAT GCTTAGTTGA GAAATTTTAT GGAGTAGTTC TCAATTTTTA TGTAGTTC	CA
	CTGCAAAGGT AAGTCTTATG GAAAGATTCA CTGTAATTTT TTTTCCTCAT TTGGACATCA GCTTTTTCTT TTCCTCAG	
15	CCGCTGAAAG ATAATITITA AAATAAAAAC CITGITITTA TATCAAGTGG GGACATITIT TCCAAATGAA AACCGTGT	
13	TCATTTTATA TGATAAAATC AATGTTATTA TTTTTAAAAAT TTTGATTTAA AAATCATTAA AAATAAATTT TCAGATAT	
•	CCTGAAATTC TACCATCCAG AGATAATAGT GCTTAAAGAT TTGATATATA GACACACAC CATATATACA TATATATC	
	CCTAAACTTC TTTGTATAAA TGTATATAAA GTTTTTAATA AAAACTAGGA GATTAATGCC CTTTGAATGA AAATAAAT	
	AATGTGTATG CTTTAACATC TTGCCTTTAC TTTATAACAT TTATCACAGC AGTCATGAGA TAATGATTTA CATGGTCA	\TT
20	GTTAGTAAGC TAATAGCTAA GTGCATGAAC TCTGGAGCTA GCCTCCCTGG ATTTTAATCC CAGATCTGTC ACTGACCA	.GC
	TGAGCAATAC TAGGTAAATT GCTCTTGTTC CTTAGTTTCT TCATCTGTAA AATAGAGATA AAAATAATAT CCACCTCA	TA
	GGATTGGTGT GAGCATTAAA TGAGCATACG TATGTAGGCC ACTTAACAAC AATGCCTTCA CATACTGAAC ACAAATAT	
	GAGCTGTTGT CTTATTGGGC TCATGTTTTT CCTACCACTA AGCCGCATGC ATGCAAGGAC CATGTTGGTT TTGTTCCA	
	TTGCATCCCC AACCTGGTAT ACAGTGTGCA TTCAATAGTT GTTGACTATT ATTACTAGTG GCATTTAACA AATATCTC	
25		
23	AAATGAGTGA AGAAATACCC ATTTACTGCA AGTGTGTCTA ATATTGATGG CATAATGGGG GAAACTCAAA CTCTGGAG	
	AAACAGGTTT TAAAACCTTA TTCCCTCATC CTCAGITATT GACGTTTTTT TTTTGGCAGG TGTGTGTGTG GGACAACT	
	TIGAACITIT CTGAATITCC AGCTICGCAT ATATAAAATA GAGATAGTGA TICATICTTG CAATGTATGG ATITGAGA	
	ATTGTGTAAG TITATCAATA AATAGTAGCT ATTTTTGTAT AAGTATTACA TATAATATCC AGGCCACTGC TITGCATA	.AC
	CCAAAAGGGG CACCATTCAT GCAGAATACA ACATAAATGG TGTCCCTGGA GCAGTGCAGT	CC
30	TACAGTATAC TITATAGTTC ATAGATTACA AATTATCCCT TTATCAGAGT CTCTCAAGGT TGGATGTATT TGAGGTCC	
	AAGAGCAATT TAGGATTAAC AGTAGCTGCA GAAACCATCT GCAGTGATAT TCTCATTTTA AATCCGCGGG AAAGAAGA	
	GCTATAAACT TGGGACCTGG GTTTAAGCAT TTTAAATGCC AAGTTCACCA TTTTCTAAAA CACAACAAAT ACCCAGTG	
	AGAGGGAGAA GGGAAGTAAA TGCCTCTGAA TAAGCAAGTT AATGTCAGTA GTTGTACTGT ATGCATATTG ATGAACAA	
25	GAGGAACCAA TGTCCAATCA GATGAGCAGG ATATTTGGCA ATAACAAGTT GCCTTTGAGG AAAAATGATT TTCTTGGC	
3 <i>5</i>	GTTCTTTATC AGCATTACAA AGCTAAAAGC TACGCTTATC ATCACTTATA CTAGCATACC CTGTTGTGCA AATGCTGT	
	GTGTTTGCAT CTGCTATTGT TGATGCCTGG TGCATGAATC AGGACTCCAG CCCACAAGTT TTCCCAGAAC TTTCTTAT	
	CCATCATCTT TAAGTGTCTG GTGAACAGTC ATAGTTTGGT ACACAAAAGG GTCAACCTGG GGGATGGCTA GGGTTTGA	LCT
	CAGTCGTTAC ATTTCAATAG AGCAGGAAGG GGAAATGGTG GCCTGTAACC TCAGGGAATT TTGCCAGTTG GTCCACCC	CA.
	CTCTCTCTC CCTGCTCTGA GGAAGTGGCA CAGCCTAGAA CAGCACCACA GGTGAGAGAA ATGCAAACCC TAACCAGA	GA
40	AGCAGACTCT TIGCCAGTAG TAATAGTTCA GGACCACCAC CAGCTTTTAT TAAAATTTTT AATAACACTC AAGTATTG	
	AGAAAGAAAT AATCTTGGGT TAACTATAAC TAGAATATTG ACTCTTCCTC TGTGGAAGAA TCAGCCAATC ACATTTGT	
	ACATCAGTTC CCCTGAAGAA GAAAAATACA CTGATGTTGC AGCAAGACAA ATTTAAGCTA GATGTAAATA ACTTCCTT	
	GCCTGTAATG CTAGGCTAAT TACATATTGG AACTATTTT TCAGGGAAGA ATTGTGTAGG GTTTCAGGGA AGAATTCT	
	AGAAAATATA GAGCTGAAAT GATCTTGCAG CTCACTGAAA CTGCAGGGTT TAGATCCACA CTGATACTCG TTCTATTA	
45	ACTGTAATGA AGGCTGATGG AATAAGTAAA AATGTTTTGT ATTAGTATGT TTTTACACTT ATTTGCAAGG CATAAATA	.GG
	TTAGGTTTTG ATCTTAATTT AATTCTAACA TGTATTGTGC ACAAGCTGTG AGCAGTTTTC AGGAGTTAGG TATCTGGC	CA
	TGACTGATTT TTCAGGAGTT AATCATCTGG TAGAAGGGTC ATACACAATA GGAAGATGTG TGTGACAGGT TGTGATCA	TT
	ACTATAATCA CACAGAGAGC TGTAGAATTT TAGGCTGGCA GGGTGGCTCA CGCCTGTAAT CCCAGCACTT TGGGAGGC	CA
	AGGCAGGCGG ATCAAGAGGT CAGGAGATGG AGACCATCCT GGCTAACACG GTGAAAACCCC GTCTGTACTA AAAATACA	
50	AAAAAAAAA AGCCAGGCGT GGTGGTGGGC GCCTGTAGTC CCAGCTACTT GGGAGGCTGA GGCAGGAGAA TGGCGTGA	
50	CCGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	
	AAAAAAAAA AAAAAAGTC ATGTTAGATC CAGAGGGGTA GCAACTGGGG CTGGGCTGTC AGTCAACTCA GTCAACTC	
	TCAACTCTGC TCCCCCACAG GAGATGCCAG TGATGCATTT TCATGGCCAA CATTGTCAGT CAGCATCATT GAATTACT	
	TGATTATAGA GACACAGCTG CAAACGATTC CCCATTAAAT ATGATGTTTC TTGCAATGTT TGGAAGGTAC TCCTTTTT	
55	TAAGGGAAAT CCCCTCTTCT GGCTTGCTGA AAGTTTTTTC TTTCCATTTT AAAAATCGTG AATTCCTTTT TGCAATAT	
	AGGTGGTTAT ATGGTTTCTC TTCTCTAATC TGTTAATATG GTGATTTAAT GGTTAGAAAT TTTCTAATGT AAATTCCA	CT
	CATATTGCAG AAATAAACCT AAACTGAGCA TGAGGCTATA TTTTTTATTT GCTTCTATAT TTGGTTGCTA TACAGTAT	TA
	TGTTTAAGAT TTGTTCACAT ATATTTGTGA ATGGGATTGG ACTATTTTTC CTTCTTGCCG ATTTTTATCT GGTTTTTA	
	TTAAGGATAT TTTAGACTTA TGAAATATTT GGCAAACAAT CCTTGGCAAG TAATTTTTTG GGGAATTTGT TTTGGCTA	
60	TTGAGTATTA CCCAATATAT TITAATTAAG TTATTCITAA TGTTTTCTTA ATTAAAAAAA TTACCTACTC TAGAGATA	
00		
	CTITATGTAC ICCAGATITI GICTATITAT ACCACTITIC TITITITCCIC GATGAGIGIC ATAGATGITC ATCTATTI	
	TTATCTTCTT TGATCTTCTC TTATTCCTTG TTTCTATTAA CTTCTGAAGT TTATTATTTT CTTTTTTCCA CTTCCTTA	
	GTTTATTCTT TCAATTTTC TCTAACTTCT TAAGTTGGGT GTTTAATTTT TAGCTTGCTT TGCTTTTTTA GGATAAGC	
	TAAAACTACA AATTTTCCTT GTTATTCTTT TGCTGCACCC CAAATTGTTG ATATTTCTAT TGTCTAATTT CTATTCAA	TT
65	AGAATACTIT AAAGTITCIT TITGGTTITT AAAAACTAAC TITITAAATT GACAAATAAA AATTGIGTAT ATTTATTG	
	CACAGCATAT GGCTTTGAAA TATATGTACA TIGTGGAATG GCTAAATTTA GCTTATTAAT GTATGCATTA TCTCACAT	
	TTATCATTTT TTGTGGTGAG AGCTATGTGA CTTTTGAACT TATGAGTTAT TTAAATATTT TTAAATTATT AAGCATAT	
	GGATTITAAG TAATTTACCI TITTATTATT AACTTATAAC AAGTAGAACA GTTAACCIGI ATGATICTAC ATCATIGA	
	TITATTGACA TITGCTTCAT AGTCTATTAT ATGGTCTACF, TITGTTCATG TTACATCTGT AGTAGAATTG GCTAATAG	
70	GAGTAAAGTA CACATATGTC TATGAAATCA AGTGTAATCC AGAGAAAAAG AGAAATTTAC TGAATATATT GTTCTAGG	
	CTATTATATG TTGTCATGTT TAATCCTCAC CACAATTGTA TGAGGCAGCC ATAATTAATT CCACTTTACA CATGAGGA	
	CTGAGGGTTA AAAAAAAAGC TAGCTCTACT ATTTGTAAAG AATGAAGCAA AGATACAAAT GAAGGCCCAC ATATCCTA	TA
	ACTAGATATT TAAGCATTIT AATICAAGCT TTAAAACTGC TAAATAAAAT GTGCTCCAAT TTCTATATTG ACAGACAT	AC
	CTTCCTAATG AGCTGGGGTT CGAATTTAGA AATCTTTGAT GCTTCAGAGT CCACACTGAA ATGTGGAGGC ACATAGTG	AG
75	TIGGTCCCCA GCCTTCAGTC CACCACCTT CTCTTTACTA AATCACCTTT CACATACAT	
	CAUCIC CONTINUE CONTINUE AND	~~

	ACTION LACE CTA	AACAAAA TOOO	LOLOGO TTOTOGLEL	0 1010101010	1 CCCC 1 TCCT	0100111100	TOCALACTO
			ACACCC TTGTGCATA				
			GGGACG GTTTCAGTA				
			AAAGG GTGCTGGAG				
_			GAAGGG TACTAGAAT				
5			ATAACT ATTACCAT				
			CATGTA TTATACAAC				
	CCATTTTACC GAT	GAGAAAA CTGG	CATAAA ACGTTTAAC	T AACTTGTCCA	AGTTACAGAG	CTTAGTGAAG	CCACAATGTT
	GCTCAATTTG CTC	TCAAACT TCAAA	GGGAT GGGAAGGAC	A CCTAAGTCAT	AGAGTCTTTA	AGAATCAGAG	CTAGAAGGAA
	TCTTAGATGT TAT	CTAGTCA GCCT	CCTCCC ATTACAGTO	C AAGAGAAGAT	GGCCCTGAGT	TACTTGTAGC	TATTTTTGCA
10			TCTACT GAAGATAAA				
			CAGAAC AAGAAATC				
			TTCTTC TGTAATATT				
			TTCTAA AGGGATAGI				
			CATCAA CTATACATT				
15			CATCAA CIAIACAII				
13							
			ACTAAA CTCAGATTO				
			TCCTAT TCCCAGTCT				
			ATTAA ACAGCTAAG				
			GCATAA GTCATATT				
20	GTTACACCTC CTC	CCAGCCA ACCC	CCCCC TCCCTGACC	C CAACTAGTCA	GAGACCAAAG	CCTTCACAAT	GGTTTACACT
	TGAACCTTCC TGG	SCCCCACC CTCA	TCATCA CGCCTGAAT	A ATTACATTCA	CTGACTGGTC	TCCCCTGCTT	CCGTTTATCT
	CCACTCCTAA ACC	CCTCTGAC ACCT	TAATCT TCCCAGAA1	A CCATTGTGAT	CCTGTTCCAC	TCTTGCTCAA	GTTTTCCCAG
	AAACTAGAGT ACA	AAACTTTA TAAC	CTTTAG AGTTGAAAG	C CACTCTATCT	CTTTTTCATC	CCCAGGTCTC	TGCCAAGGCA
	GTATAACCTG TCC	CAACATCT CTAA	CTTCAA TACCTTTGT	C TTAGATACTA	GACTCTCCTC	CTGGTTTCTA	ATTAAACCTG
25	ATCTAGGATC TAA	ATTITIGCC TCTG.	AATTCT GTTGCCCTT	GCCAAGTGAT	CTCTTCCTCC	TCTGAGCCGC	AGCATCTCTG
			AGCACA CACAGCCT				
			TCTGCC CTTATGTGT				
			AGACAA CTGTCCCAT				
			ATTITE TICCIGACAI				
30			GAGTGA TITTGTTGT				
30							
			TATTCTA AGTAATTT				
			CAGAC ATTCAGTAA				
			AATTT AAAATGAGG				
0.5			TCTCTA AAATCCAGA				
35			AATTT CATGCTCAC				
			ATGGC TATTTCTTCA				
			AATACA GGTCTGGGT				
	GAGGAGGAGT CAT	TGCTGTTT AAAT	CCATAC TAGTCCCCA	G AGGCCAGGCT	GCTTCTGCCA	CCCCTACCCC	TCCCGCCACA
	GAGCTCTTCA GCT	ITCTCACA TTTC	TAGTTC TICTCTCTC	T ACTITCATTA	CCTTCTCTCT	TTTTTTTTT	CTTCTCATGT
40	GCTCACGGGA GCA	AGAGAAAA TTA	ACTCCTC TAAGTTTTC	T TAACACAGAG	TGCCTTAATT	ACATATTACT	ATTGTTTGAG
	TTCCTGCCAA CAC	TACGTCT GTAG	GTCAC ACCTGCTAT	A TTAGAGGCTT	ATCAAAAAA	GATAGCTTTC	TCCTAAAAAG
	GGATTTGGAT GCC	CTACTAAG ATAA	CTGGAT GCCAAGAT	AA GTTTAACCTA	ACAAACTTTA	TATTATTAT	TATTATTATT
			CACCCA GACTGCAGT				
			CTCCC TGAGTAGCT				
45			TTGTAT TGCCCAGG				
			GCATG AGCCACAGC				
			CTACC AGTGTTAAA				
			GTCAG ACCTCTGAG				
			ATGGCCG GTTCCTGC				
50			TGAAAT TCCTTCCCC				
50							
,			CTTTGA CTGTAATTT				
			GACTC AACCTGCCTC				
			CATGT GACATTTGG				
			ATGAG AAAGATCCA				
55			GTGGCC TCTTTTAC				
			CAATCT CTCCCTTCC				
			AACTCC AGCACTGGT				
			CACCCA CATTTCAGA				
			GGGTG GCAAGCACC				
60	GTACCCCCCA ACC	CCCTTCTC TCCA	TGTCTC CACCCTCTC	T TCTCTGGGCT	TGCCTCCTTC	ACTATGGGCC	ACCTTCCACC
	CTCCATTCCT CCC	TTTTCTC CCTTA	GCCTG TGTTCTCAAC	AACTTAAAAC	CTCTTCAACT	CACGTCTGAC	CTAAAACCTA
			CGCTT GACCCCAATA				
			TAAAT AATTCTTGTC				
			CTAGTC TCTGTTCCC				
65			GTCGCT GAGTCTTTC				
			CGCTCC CCGCCAGGC				
			CTCCTC ACACCTGGT				
			GTGGCT GGAGCTAAA CTTTTT TTCATCAAA1				
70			· · · · · · · · · · · · · · · · · · ·				
70			CCCAGA GGGGCCAGA				
			AAAGTT AGACTCCGC				
			CAGCCA AGTAGCAA				
			AAGAAC TTCAAAATG				
			GAAATC TGGCCACTG				
75	GTTCCATCTG TGTC	GGGACCC CACTO	GAAAT CGGACTGTC	C AACTTGCCCA	GCACCCACTC	CCAGAGCCCC .	TGGAACTCTG
				125			
	•			135			

	GCCCAAGGCT C	TCTGACTGA	CTCCTTCCCA	GATCTTCTTG	GCTTAGTGGC	TGAAGACTGA	TGCTGCCTGA	TCGCCTCAGA
	AGCCTCCTGG A							
	GCTACCCACT C							
	TTCTAAACCC C	TTAAAACTC	CCCAACTCTG	GTGCCGATTT	AAACAACATT	CTTTTATACA	CITCITITA	GTTATCCCCA
5	CCTGCCCAGT TO	CCCTTATTA	GGCTGAGACA	TTTTAACCAA	ATTATTTGCT	TCCCTGACTA	TTCCTGGACT	ACAGCCACAT
	CTCATTGCTG CO	CCTTCTTCC	CAACCCAAAA	GTGGCAACTC	CTTTGCCACT	TCCTCTCATA	TCCCCCTACC	TTAACCCACA
	GGTATGGGAC A	CCTCTACTC	CCTCCCTGGC	AACAAATCAC	ACCCTCATTA	CTATCCCATT	AAAACCTAAT	CACCCTTACC
	TGGGTCAACG C	CAGTATCCC	ATCCCACAAC	AGGCTTTAAA	GGGATTAAAG	CCTGTTATCA	CTTGCCTGTT	ACAACATGTC
	CTTTTAAAGC CT	TGTAAACTC	TCCTTACAAT	TCCCCCATTT	TACCTGTCCA	AAAACTGGAC	ATGCCTTACA	GGTTAGTTCA
10	GGATCTGTGC C	TTATCAACC	AAATTGTCTT	GCCTATCCAC	GCCATGGTGC	CAAACCCATA	TACTCTCCTA	TCCTCAATAC
	CTCCCTCCAA A	ACCCCTCCA	TAACCCTTAT	TCTGTTCTGG	ATCTCAAAAC	ATGCTTTCTT	TACTATTCAT	TTGCACCCTT
	CATCCCAGCC TO							
	CAAGGCTTCA TO							
	CATGAAAACA C	ACGTGCTCT	CCCTGCTGAT	CATGTCCAGC	TAATCTCCCC	AACCCCAGGA	CTGGCAAATT	GACTTTACTC
15	ACATGCCCCA A							
	GGGCCTAAGA A							
	GTCTGATAAT G							
	CCCCTTACCG TO							
	CAACTTAAAA A							
20	CAGCCCATTT A							
	TGCCCCAAAA A							
	TGCCCTTTTT TA							
	ACCCTTAAGT CT							
	ATTCTTTACT TT							
25	ACTATCAATC TO	CACTCACTC	TCTCCTAGCC	ATTTCTAATC	CTTCTTTAAC	AAACAATTGC	TGGCTTTACA	ATTTCTCTTT
	CCTCCAAAAT CA							
	TTACCTAAAT CA	ATCTGGCC :	TGGTATATGA (CAACATAAAA	AAAACTCAAG	GATAGAGCCA	AAAACCTTGC	CAACCAAGCA
	AGTAATTATG C	TGAACCCCC	TTGGGCACTC	TAATTAGATG	TCCTGGGTTC	TCCCGATTCT	TAATCCTTTA	ATACCTGTTT
	TTCTCCTTCT CT							
30	CATTCTATAC GA	ACAAATGTT	TTAAGGGAGG	AGACCACCCC	TCATATTGTC	TTATGCCCAA	TTTCTGCCTC	CAAAGAAAGA
	AGTAAAAATG AA	AAAGGCAGA	AATGAAATCC	ACAGGCAGAC	AGCCTGATGC	CACACCCTGG	GCCTGGTGGT	TAAGATCAAC
	CCCTGACCTA AT	TCAGTTATG	TTATCTATAG	ATTACAGACA	TTGTATGGAA	AAGCACTGTG	AAAATCCCTG	TCTTGTTCTG
	TTCCTCTAAT TA	CCAGTACA	CGCAGCCCCT	AGTCATGTAC	CCCCTGCTTG	CTCCCCCTGC	TTGCTCAATC	AGTCATGACC
	CTCTCACGCA GA	ACCCCCTTA	GAGTTGTAAG	CCCTTAAGAG	GAAAAGGAAT	TGTTCACTCG	GAGAGCTCGG	TTTTTGAGAC
35	ATGAGTCTTG CO	CAATGCTCC	CAGCTGAATA	AAGCCCTTCC	TTCTTTAACT	CAGTGTCTGA	GGGGTTTTGT	CTGTGTCTTG
	TCCTGCTACA G	TTTCATCTA	ACAACCCCAT	AATATCACCC	CTTACCACAA	AATCTTCCTT	CAGCTTAATC	TCTCCCACTC
	TAGGTTCTCA CC	GCCACCCCT .	AATCCTGCTC	GAAGCAGCCC	TGAGAAACAT	CGCCCGTTAT	CTCTCCACAC	CACCCCCAAA
	AATTTTCACT GO	CCCCAACAC	TTTACCACTA	TTTCGTTTTA	TITITCTIAT T	CAATATAAGA	AGATAGAAAT	GTCAGGCCTC
	TGAGCCCAAG CO	CTGCACGTA	TACATCCACA	TGGCCTGAAG	CAAGTGAAGA	ATCACAAAAG	AAGTGAAAAT	GGCTGGTTCC
40	TGCCTTAACT GA	ATGATATTC	CACCATTGTG	ATTTGTTCCT	GCGCCACCTT	GACTGAGGGA	TTAACCTTGT	GAAATTCCTT
	CCCCTGGCTC AC	GAAGCTCCC	CCACTGAGCA	CCTTGTGACC	CCCACCCCTA	CCCACAAGTG	AAAAACCCCC	TTTGACTGTA
	ATTITCCACT AC	CCACCCAA	ATCCTATAAA	ACAGCCCCAC	CCCATCTCCC	TTTGCTGACT	CTATTTTTGG	ACTCAGCCCA
	CCTGCACCCA GO	GTGATTCAA	AAGCTTCATT	GCTCACACAA	AGCCTGTTTG	GTGGTCTCTT	CACACCGACA	CGCGTGATAA
	TTATTATATT AC	TTTTAACT A	AAAACCCTTT (CAGAGTCTCG	CAGGGAAGGC	TGTATATATC	TCATAAAATG	TTGGGGCCCA
45	CTGGATCAGA CA							
	TAAATGGTGG G	TAGGCTGTT	ATGGTGATGG	CAGATTTTCT	TTCCATAAAA	TGTCCATAAT .	AGGACATTTG .	AACAGAAGGG
	AAAAATCAAA TI							
	ATGGGAGGAA G							
	AGCCTCTTTC TT							
50	AGGACTACAG G							
	ACTACAATAA TA							
	TGACAATTTC AT							
	AAGATAATGG G	ATCCCCATT '	TCATAAATAA	ATCTGAAGTT (CAGAGAGAGT	AACAACTGGC	CAGGGTCACA	TCACGGAGAC
	AGAGGCAGGG T							
55	AGCTGACCCT GT	IGCAGTGAA	AATCTGAGGG	CTGAGTTCCT	ATTGGAACAC	AAGTGAAAGA	CTTCCTGGCT	TCTAATCTCA
	GGATAAGGAC TO							
	ATTTGAGTGA GC							
	CAATAACCCT GT							
60	CAAGGTTTCT GO							
60	CCTAGAGCTT GA							
	GGCCCTGATG TO							
	GGGGATGTAC CO							
	GCTTTTGCTA TA	ATACAGAA	TCIGAGAIGI	CITIGAGAAA	GAAAAGIGTA	ATCATTACCA	AAAAATTATT	CTCATAATGT
C 5	GTGCAAATTT GT							
65	CATAAGAATT CA							
	TATATCAGCA GT	IGCACIGIA	TGCTCTTTCT	GATTTATTIG	AACATTCATT	TATTGAGTGT	CAAGTAATGC	ACTAGATACT
	CCAGGGATCT GA	ACACAAACT I	CIUCCUIGAA	GUAUCATGTA	AIUICAUTGO	UUAUAAAACA	AAACATATGA	TAATTICAAA
	ATAACAAACT AC	UUCAAACTA	GITAACACIT.	AAAAAGCAGG	CITTATTCAA	ATGCAAAATT	GCATGTTACA	GGGTAACCTT
70	TCAGTAAGAA GC	LAGGAAGA	GGAGCTCATC	AIGGGTTGGA	TIAGTAAAGG	ACTAGITATA	AAAGAAGTGG	TGGGGTTGAG
70	GGAGGCCTGA GA							
	ATTTCATTGT GA							
	ATTTCAGTGA TO							
	GGAAACAGCA A	AACCCCCAA	ACIAAAAAAC	AGCGCAGGC	ATTOTOTOT	COCACCOTT	IGCITGGCAC	1CATGAGATG
75	CTAGGTGTGG AA							
, ,	CCAATTCACA GA	ACCOCCOAGG	CIACAGIGCA	TIDADDALIA	THUMACTIG	AGCAGGACCC	CATTACTICA	CIGGAGITAG

AAAGAAAGGA GAGCGTAGAC: TTTTTTGAACT TTCTATAAGA GTGTACCTCC ACAGTATACA GAAGACGACG TGAAATTTGA TCTGCAAGAA AACTGAGTCC ATATTCACAT ATGTATCAAA TTTGCACTTC ATTTAGAAGT GTCTGTCATC AAGTACAGCA CTGAATTGAA ACTGAAAACA AGAGTCAAGA AAGAGCAAAG TCAGCCATCT TTATATTCCA CATGAATCCT TTCCCTTTAT GGTCTTATTT GTTTCTCCTC AGAAAAGACA AAAAGCTGAG CTGTATAAAC ACCTGTGGGC TGGGGGTTGA GGGATAAATG AGGGGCGAAA TGGAAGCTGA AGGAACTGTT GGTCAGGTAG AAATCTTCCC AGATGCACTG AAGGAAACAC ACTTCATGTT TGACGTAGGA GGTGCCACCA CACAAAACGT TTCATGGAAG GATTTAAAGG ATCTCATGAT TTTTAGTATT CCAAGAATTT TCTTTCACCA AGGGCGATTT AATATGGGTC ATTCATACTG AAAGAAAAAC AAAAGATAAT AAGAGTTTAA AAATTGCAAA ACTTGGAGTG TTAGTAGTAA AGGTAAATAT TCATTAGAGA TGAGAAGAGG AGCAAGGAAA TGCTTTCAGC TGGAAATCTC AGACAAGAGG CCAGGCTTTA GGAACCTCTG AAGATGAACA AATGTAAGCA AACCCTAGTA GCAGCACTTC TCAGATTTTC ATGTGCTTAC CACTCAGAGA TGGTGTTAAA ATGCAGACTC TGATTCAGTA GGTCTGAGTG GAGCCTGAGA TTCTGCACCC CTAACAAGCT CTTTAGTGAT GCTTATGCCA CTGGCGCACA GACCCCACTT GGAGAAATTT TTGTGGTGCA TACGGTCTTT GTCTCCAGAT CTAATGAGTC TGAAGGACAG TGTAGATTGA TTTTTTAAAT TTATGTTTAT TTTAATTTAA TTTAATTTAA TITATTATT TATTTATTT TGAGATGGAG TCTCACTCTG TTGCCCAGTC CGGAGTGCAG TGCCACGGAG GCAGCTCATG
CAACCACGGC CTCCTGGGTT CAAGCGATTC TTCCGCCTCA ACTTCCTGAG TAGCTGGGAA TACAGGCACG TGCCAGCACA
CCCAGCTAAT TTTTGTATTT TTAGTAGAGA TGGGGTTTCA CCACATTGGC CAAGCTAATC TCAAACTCCT GACCTCATGA
TCCACCTGCC ACGGCCTCCG AAAGTGCTGG GATTACAGGC GTGAGCCACC GAGCCCAGCT GTAGATTGAT TTTGAGCAGT GGAAAGTCAA GGAATTAGAA GGCATGCTA AATGGAAAGT GAAATTGGAG AAAATTTAAA CTCATGAAAT AGTGGTGGTT
ATAAACTCGT GATAAATTAT ATCCTGGGAT ATAATTTAAT GAGATGGTAA CACATTTAGT TTAAAGAAAT AATGGACACT
TTTTTTGTGT GACACAACTG TCTTATTCTT GGAAAGGACA AGGAGGAAT GAAATTGGT ATGTCTTCAC AGCACCTTTC
AAAGGGAGAA CCAGATTCTG AGGAGCTGGT CTCATGATGA ACTGTCAGGG TAAACCACAG TTCAGCAGCT GCAAATGTGC TTGCCAAAAT AGAGACAAAA AAATGTTTCT GAAAACAAAA TTTCACATAT GCCCTCCTCT GAGGTTGGCA TCATATCTTC CTGTGTATCT TGGGTGTAGC TTCTATCCTG CCAGAATTTA GACAGTAGAA ACCAAATGAG GTGATAAACA GAGTCATTTT GCAGAAGAGT CAAAATAACC CAGCAAGAAA TGAAACCACA AATGCCCAAG GAGTCATTCA TTCACCATTC AAAAGCTAAT AGAAATGAAC ACAAACTACT ATGAAAATTC ACCCAAGAAC TTAAAAAAAA AAAAAAAGGC TCATGGTGTT TAGTGTGATA GTATTCATTT TACCTTTGAC TTGTTCTAAA AACACACCAT ACTTCTACCC CACCCTTCCT CAGTGCCGTC ACACAATGGT TTCAGTGTGA AAAAAAAAC CACGTTACTG GAAAAGGAGG GTGCCTGGGA CTTGCCACTC TAAGCTGGTA GTCAAGGGTC TTGAGTTCTA AAAGCATACG CGTTAAGAGC ATGATTCCTG GATCCAAATG AGTATGGATC TCAGCATTGC CATTTATTGT GACCTCAGGC TATTITATIT CTCTGTGCCT GTTTCTTTAT CAGTAATGAA GATGTTCATA GACCCTTCTC CCACAGACTT AAAGGCATAT TTCATGATTT AAGACATGTA AACCATTCAT AACAGTATAC AACATGGAAT TAATATTTGA TAAAGGTTTA AAAGGCATAT TTCATGATTT AAGACATGTA AACCATTCAT AACAGTATAC AACATGGAAT TAATATTTGA TAAAGGTTTA
TGATTATTGT AACTAACTCT GTCACTTGCT CAAGGCCTAT AGAAAACTTA CTTAATTAGT TCAACTACAA AAAGAGTTTG
AATGTGATAT CCACCAAGAT CATATTCAGA CCTAGAATTC TGTGATTCTT ATGAATTAAT ACAGCCTTGG TCAATAAATG
AGACCTGGGC AAAAAATTCT TCTTTGCTAG GCCTTTCTAG ACCACTCGGT GAAGCATTCA AGACTTATGT TATTGGGGCC
AGCCTTCCTT TCCAACTTCA ACTCCACAAC TCCTCAATAA GCCATGGGCT CAAGAAAGTT CTGCTCAGTG GCCCCTGAAA
AATGCTTTCA TAGTCTCACT ACCATACCAC TGCTTACACA ATTTCCTTCC TACAGACTGC CTTCCTTTCC TGCTTTTCTC
CATATACCTA AATCCTATCT ATTCTTCATA AGCAACCTTC TTTATAACAT TTTCTATAAC CACCAAGCCA AATGACCTTT
TCCTTCTTAAA ATTAAGCAC CATTGGCCAT TACCATGGGCT GACTCCTCTTT GCTGTCTCAA
CAGAAAATG TCCAATAAAATG TTCAATAAAC AACTTATAAT TGACTGATTA TAAAAAATCA GTGAACCATT AAACTTAATA CAGTITCCAA CACAAAAATG TICAATAAAC AACTATTAAT TGACTGATTA TAAAAAATCA GTGAACCATT AAACTTAATA TAGCAATTTG CITTAGCATGG TAATTAAGCIT TITTGCTAATA TICTTCCAGC CAGTCTCTCC TCCTGTGCCT CAAGGACATC TIAAAAAAAA AAAATCTAGT TGATCTGCTT CCATCTAGTG GCAATTAAAA CAGGTGGTTC CGGTAGCCAG AAAACAGCTC TGGGTAGATT GTGCCAGAAA ATACTTTCAC TCAGTAGGTG CGAGTTTGAA AGAAATCTTC ACATCTGTGG GTTTCCTGCC ACAGACATAG GGAGACCAGC CCAGAGAAAG AAGCCTTTCC TCACTAGACT CCATTTGCAC TAGTAAAGAG AAGACAGAGT AATTAAAAAG AATAAAAAGA ACCTCCACTG ATCGTACATC CTCATCCAGT TACCCCTGCC CCACTTCTCC TTCACAGCCA AACATITIAA AAGAGATGAC TGCTTGTTCT GTCTCACTT TCTCATCCTC AGTAATGCTC AATGCTTGCC CGTCTGACCT CTGTCTTGAT GTCTGCACTG CAAATAGTCT CCCCACTGAC ACCCTTGTTG CATCCAGGGG ATACTTACTG GTTCTCTTGG CAATGTTTGA AACCGTTCCC CTTTCTTTGT TTCCTTGGCA TTCATTACCC CACACTCTTT CTCCTCTTCC TTCTCCCTGCCAGGACACAT CTTTTCATTT CTCTTTCCCT TAGGTGACTT ATTAGATAAT GATGTTCCTC TGGCTCCCAT ACTCTCTCCC AGGTCCTCTT CCATTCTTAA AGCACTCACA CCCTCCCTGG ATGATAGTAC CCACTCCTGA GATGGCAGTT ACCTCCTGAA ATGTGAGGGA CCCAAATCCA CTTCTCCTGC CATAGCCTCT GTGCTTTGGA TAGGTCCAAT GAGCCACAGT GAATGATGTG CATACACCCA AAGCTCAGTA CAAAACTGAA CCCATGATCT TRACCTCCAA AACCTCTCAT TCTTTTAGT TCCCTTCTCA
GAAGTAAACA GGACTACCAT CCGCCAGTTT CCAGGTGAGA AAGATGATAA TTTGATTCTT CTCTCTCACT TTTAGCCAAT
TAACAGACAC ATTCAGTTAA TATCACCTCC TCTTATTTCA TGAACCCATT CTTACTACTA GTTCCCTAGA CAGGCGCCAT
CGGTTTTAAT CTAATAACTG CAAATGCCTC CAAAACAAGT CTCTTTGAAT CCAGGCTCAC CTGTCTCCCA CACTTGCCAT
ACTGCTCTGC AGGGTGACCT TATAAGATGC CAGAGGTAAG GCTACTCACT GTTTAAACCC CTTTAGTGAT ATCCCAAAAG ACCTCAAGAT AAAGCCCATA TCACATGGCT TATACATTAG TITATGATCT GGCTTCTGGT GCCTCATTIT TCCCCACTTT
TTCCTTTGCA TTCTAAGCAA TGGCCCATAC TAAGTTTGTG ATTGGTAGGA TGGTTGCCCA AACCAGCATC CAATCCCTTC
AGAAATCATC TCACTTCATT TCTAGCATTT TAAAGGAAGC TCAGTTGTCC AGCTGGGTAC TGAATATGTC ACCAAAGTCC
TCCTTTCATA GTTTATTTTA CTTAAACTCT CCTTCCTAAA ATTCCAGAGC AAGTCACTAA ACCCTAGATA CTGAGAAATA TTTTTCCATC TTCATTTCTG CCAGGTGGGC CATCAACTTT CACATGTCTG CATCTCCTCC CACTGTGCTA TTTCTCCAGT AGAAGAAATT TGAGCTTCAA GACCAAACTG AAAAATACTT GCCTCCTTGG GGAAGCTGTA GGTAGAATTC ATGCTCCCTA TCTTTCCCAC ATTTCTGAAG GACAATGCCT GITAGAGCAA TTGAATGCAA ATAGTCAATT GAATAAGCAT TTATTCATTT CTCAATAAGT GCTTGTTCAA TTGAATATTT CTTAAATAAT ATATTTAAGA ACAAGAAGAA CACACCACAA TGTTTTTAAC CCTCAGAAAA AATTCTGAGG TAATCAGAAA AATCTCCCTT TACATAAACT GCCCTTTTCT AATAGGGATT ACTTGTTCGT TCATTCATTC ATTCAGCTCC ACTAGCACCA AAAAGCACAG CTCTGAAAGG AAGCTAGTAG ATTTATCACC TTATCTGGTC ATTTGGATGA GGACCCCAGG TAAATAAACT ACTATGGGGT TAATGTGTCT AGCTAGAGCA GGAAGTAACT TAAGGAAGTA GAGAATGAAT CAGCAGATGT GGAAACTCCT CGCCACTAAT AAAACTTACC TICTCTTGGA TITCTTGCCT GAAAATAGAA AATAGAGAAA AGGCATTAGC AAAAATTAGA CAATTTAAAG TITTTCAAGT AAGGGAGAAG GAAGACTCCC ACTCTCAAAA CTGTCTTTTG AAGTATATTA GGTATTTGTT AGGTGGACCC TATCTGTGTC AAAGGAGATT TGAGGAACTG GCTTAATAAA CAGTGGTAGA CACTAATACA GAACAGACAT GTTGATGCAG ATGCCTCCTG AGGTTCCATT CCATTCTCCG TGCTACTCAA GAAGACAGAA TIGCTAAATT GCCTGGTGGC AAGACCCAAT ATGTCCATTC AAGTGTTTAT CCCTTCCCAA TCTGCCATCT CATCCTACCT GCAGATTCTT CCCTTGAGGG ACAGCTGCTA ATACTGTAAA ACTATGTGCC ATTACAGCTC ACAGCATCAT CTCTATGAGA ATCCACAAGA GAATTTCACT TTGGTCTTGT TGGTAGGAAT TGTGCAGCCT CATCTGAGTA ACTAATGTGT TTTTATCTTA CAAACACAAG GAATATCACA TGGTTCTCCT TTGACTGGCT GTAAGGAAAC TCAGAGCTAG ATCTGAGACC CTCTCCTACC AAGTATATAA AACTTTGTGA CATACATTTT TGTGCCATAA CTTCAACCTT GGTTCCAAAT GATTTTTGTA CCCTAAGTTT AAATTTGGCT TTCTTTTTT TTTTTTTGTA CTCAATAAAA CATCAAGCTC ATTTATTATT GCGAAGAGCG

AAACAACAAA GCTTCCACAG CGTGGAAGGG GACCCGAGTG GGTTGCCCAA ATTGGCTTCT TTTTCTTACT TTTTAATTAA TTITAATTTG CTATACTGAA CACATTTTGT ACTGITCTCA CATTCTTTTT GAAAAAAGCA GAATATAAAT AAGTAGATAA CTTAAAAAAA ACTCITTGAG CAGAAAGAAT CATTTGGGAG GCAATATATT TCAGTGGCTG TAAAGTGGCA TTCTAGAATC ATCCTACCCA GGTGAAAGCC CTATTTTGCC ACCTGTAGTG TAGGTGTGTAT TTGAACAGCT ACTTCTTTT CTAAACTACA
ATTCTTCAT CTGTTAAAGA GGCATAATAA TTGTATCATC CTCATTGGGT TGATAAAATA AAATATTTCC AAGTATTTAG
TTCAGGTCCT AGCACGTAGA CAGTGTTGCA TTACTGTTTT AATCCTTTAA AGTATTAAAG ACTACTATTT GAAATCTTTT
CTTCTAAAAAT TCAGCCTGCT GATGACCAAG TGCACTTGAG CAGGGGGAAT CAAATCTGAA TTAATTTCAG ATTCTGGTTA GCTTCACATA AATATTTTTT TTAGGGATGA TGAACCTAAC AGCAATAGAT GAGTAAGAAT CTGTTCCTAC TGAGAGAGTT TCATTTTGAA GAAAAAGGAA CTAAGGGGGC ATGTGTTCAG TTCAGATGCCC TGGTCTAACC CTGTGTGTG GITCTGGTGG
GAAATTCTTC CAACCGAGGA AAAAACCAGT TCACAAATCT GAAGACCAGT GATTTTAGAA GATGTATCTG GACTGGAGTC
TAATCTCTGA CTCTGGGTCC TGCTGATATG GTATTTTTGA GATTTTGCCT AAAACATCAT TGCCCTGGTT TCCTTATTTA
CCAAACAGGG CCAATGGTAG TGACTAATCA GAAAATGATA ATGCCTGGTG CACAAAATGT GTCTAGATGA GCCCATGCAC GACTITITAC TITTATCCTT GTAAATGCCA TTAACTATAT TITGTCTTAG ATITAGCCTG GGAATGTAGC CATTATTTCT ACCATTGCCT CCATAGGAAA AATACTCTTC ATGTTTTAAA GGACCAACCT ACAACTAAAA TCTTTGGAAA GCAGAATCAT TITGTAAGTTG GTGAAAATGG AAGATGTTGT TITATAAAATG AAGACTTTTT TTTTTTTTTT TTTTTGAGACA GGGCCTCACT CCTGTTGTGGA GTGCAGTGGT GCTGTCATGG CTTACTGCAG CCTTGACCTC CTGGGTTCAA GTGATCCTC CACCTCAGTC TCCTGGGGTAG CTGGGACTAC ATGTGCATGC TACCATGCCT GACTAATTTT TTGTATTTTT GTAGAGATGT GGTTTCGCCA TCCTGGGTAG CTGGGACTAC ATGTGCATGC TACCATGCCT GACTAATTTT TTGTATTTTT GTAGAGATGT GGTTTCGCCA
TGTTGCCCAG GCTGGTCTTG AACTCGTGGG CTCAAGTAAT CCTCCTGCCT CAGCCTCCAA AAGTGCTGGG ATTAGAGGTG
ACAGCCAAGG TGCCTGGCCC ACAGATGAAG ACTATTTAAT GTTATCTTAA AGATACCCTA AGCTTCCTAC CAAGCCAGTG
ATCTTTTGGG GCTTCTGTTT TCTTTGTTGG CATAACTGTA ACTAGCCTAA CTGCCCGTTA TCTGTTTCCT GTTTGCCCCA
CACTGATTCC CACAGCAGTT TTCAAGTTAT CGGTTTGAGA TCTTGTACAG AAATGACTCC AAGGTAAAAA ATTTAAAAAC
AACCCCTCTA ATTTTTTTAC CCTTGCTTAT AAAACAGCCT TAGCCAGCTA ACCCCTCACT ACATGCAAAT GAGTTTGATT
CTATTCTTTT GATTCTACAA ACACTTATTA AAAGATTTTA GAATTCGGAA ATAAATAGCT TCCTTATTAA GGTGACTTAC
AGCCCCAAAG TCCTTAAAAT TATTTAGACA ATAGCCACCT TATCCCAGGG GGCAGTGTGT AATAACCCAC CCTGGTTCTCT
ATCCGTCAGT TCTGCCATCA TCGCCCAAGG TAGGAAGAAA GACAGGACAA CCGGGTCAA GATTTGAAGT TCCAATGGAA
AGAATAATCA GTGGTTGGAG AAAACTGTCA TTCTTCTTTT GCCTTAATGC AGTACTTGAT ACTATATCT AGGACTTAT AGAATAATCA GTGGTTGGAG AAAACTGTCA TTCTTCTTTT GCCTTAATGC AGTACTTGAT ACTTATACTT AGTACTGTAT AGTACTTAGT ACTGTATAAT ACTATAAGAT AGTGAGATTC AATCAGCACA GAATTTCTAA TAGCAAGGGC AGAGACATTT TAACTGCTCA GTGCTCTCAG GTTATACATA GCTAATGAAG TTCTTGCATA TCAACAATCC CCACCCCCCT CACACACTTT GTCTTTCTGG ATTGGTTAGA AAACTTACCT AGCGCCCACT ATTCTCAAAT TTAAATGAAA GATAAGATCA GAGTGGCACG CAATTAGGGA CTGATAAATA ATATTTTTGT AATTGCCAGT GTAAATGGAC AGGGGGCAAC CTTTACATAC CATATTCAGT TTGAATGGTT CTTCCAGGTG AGTTTGGCCA AATGTGGCAC CATACACCCA AGGCCTGCTG CAGGCTAGTG GGTTGCTCAC ACTTTAAAGC TGAGACACAC TCATGCCTTA AGGTAAAGG AGTGATAATC TGGGCAGCAG ATGTTAACTT CTCAAGGCAG GCTTGGCATC CTGCTTGTGT TGAATCTATC ACATTAATT TCCTGTGGGT TTCTTTTTTT TTTCTTTTTC ACTTAAAGT
TGTGTTCTTT TCATGTGAAG TTAAACTCAC ATACCTTTT TTAATCTCCT TGCCAGCCAA ATGATAAATG CCAACCCAGA
GAATGCAGTA ACCATGACTG CCACTGGAAT GAAGAGGGGG TTATAATCAC CCTCCTTAAT CATTGAGAAA CTTTTGTCCA
ATTCTGAAAG AGAAATCAGT AAGGCACATA GCATGAGACC ACCAGCATTA TTTCCTTAGT CTATCTCATG ATATTTGACT TITTTCCTCC TTACATCTCC CAGTAGTAGC CCATTTGATG CCATTTGACA GATGAGGAAA CTGGCATGGG AAGGCCCCTG ATGAGTCTAC AGCATAGGC AAGACTGGAC CAGCCTTGCT AGTCTAATGC CTACAGAATC TCAATGCCCA GATTTTTGGT
TCATAGAGTT CCTGAAAATG CACCTAAAAA TGTTGGCAAG AATGGTCATC GTTGTATTTA GCTCCATGGA CTTGTACAT
GACTGGAACT CTGAAACACA GAGAAGAGCT AAAAGCCTAA TACAACTTCA GGAAAAATA AAGCCAATGA TCTGAACTGG
ATAATTCACC AGTCAAAGGA AATCATTAAT GCTTTTACTT TAAAGCAGTT GTGCAAAAAT AAGCCATGA TTTTTACATG
CCAAGGACCT GCACTAATTT CTTTCCAATG CAGTAGTTAC CACTTCCTCT TACTTCCTTC ACGAATAAGT AAAAGACTCTG
TTTTTAGAAATA ACTCTTTTTAA GTGTAAAACTA CTTTTTACATG
CTACCTGATA CTAACATTTG AAGGAATCTA CTTTTTACAA CTTTTTTACATG CCCACTA CTTATCCCACTA CTTCTCCCCACTA CTCTCCCCACTA CTCTCTCCCACTA CTCTCCCCACTA CTCTCC TCTCCTGATA CTAACATTTG AAGGAATCTA CTTTTTTACA TATTGGCAGA GGGTCTGATT CTATCCTTAG TTCTTCCCAT
TACTTTGATG AACCTTTTCA AGGTGATTTG ATCCCCACAC CCAAATATAT GATTGAGAGA AGGCTCAAGT TCCCAGGAGC TCCAGACAGA AGGTACCTGT TGGCTTGATG AAGATGAGGA GGAAATGAAC ACTAGCTAGG CCTTAAAGGG AAATGTCTCT GATAGGCCTA ATACACAGTC CTCTGCTAAA GGCCTCCCTG CCTCTCTCTG CTCATCCACT CTACTCCCTG GCCCTGGGCA CGCAGCACAC AGAGATCAGC ATTICTGACA GCTICTGTAG ATCCTACCAT TTAAAGACTT TTGTCATCCA TGCAGATAGT CTCAGGAGCA GACACAGGTA GCTATTCTTT CACATGCTAG CTTAACATGC ATTTGCTTTA GCACCTATTG CCAGGCACTG TGTCAGGTGG AGGGTATACA AAGATGAACA AGACATGATT CTTCTCATAT ACAGATAGAT TTTGGAGGCA TTAGCTTAGT GATGATTCAG GAGTATCCAT TATTTGGGGA AGTAGGTGGT CATTAGTGAC CTTTTACAGG CATTTCAATG GGCTAACAGA GATGTTAGAT TGTAGTGGAA TAGAAGAATG GGTAAAAAGT AAATCAGTGA GTTCAGATTT TAGGAGTTAA GATGGCAAGA GGTGAGAACA AAAAAAGGAA ATGATTGTCA TTAAAGGAGG AGGAAAGACC AGCCAAAGAT TTTACAGTGA GTTAAGCATA CAAATTTATT TCTAGGCCAC ATATTCTTAG CAAAACAACA TGTAAATGTT TATGTATGTC TTTCCTCATA TCTGCTCATC CATCAGCTCC ATCGTTAAGA TTTCAGTTTT CCAGGACAAA CTTACTCACT TTGACATATT GGACTAGGAT TTGACCAGAT

TCCAGATGAT TCACAAATGG TITTCTTCTT CCCAATTAAC TCAGTTCCTT CTGAGCAGAT GAAGGTACAT GCAGAGGTAA AGCTGAAGCT GGCCAGGGGA TGGCTACAGT TCATGATCCC CAAATCTGGT GCTGATAGAG GCTCACACTG AATCACTTCA
ATGAAAAAGA AAAAAAAAA AAAGACAAAA CAGTATTTCT GAGTAGAGAC CCTCCCTTGA GCAAAGGATT TTTAGCCAAA GCTGCCTGAC TACATTACTT GTGATATTGC TTCCAGGCTT TATTTTCTTG AGAATGATGG TGGGTGGTGA ATGAGAGATG AAGGCAAGGA AGCATTGAAA GCTGTGGGGA GAGGAGTAGC TACTCCAGGC TGCTGCCCTA GCTAAGGTGA CCCTCCCCTT CTGCTGGAAG TACCATGCCA TATGGCCTCT GCATCAAGGG CTCTTATGGG ATATTCTCAG AGAATCTCTG CCGTTTCATC TGTTCTGATA TCTACCCAAG CATTTTGAAA AACATCCCAA TTCACTGAAG CAAGTCCAAC TTCCGTAAAT TCCAGTAGGT GGGTTGACAG TTTTATAATT TCAATAAGGG ATTTTGATAG CACTTCTAAG AATTAAACTA CTTAAACTAA TGCATCAGGA GCATACTTGT AGAAAAGTTA ACCAAAACTT CGTAAGTTCA GATGACATTG GTTTTCTCCC ATATGGAGAT AAGGTTGGCA GTTAAAAATG AAAAAAAAA AAAAACCTAC CTTATTTCAA ACTTGAAAAG ATCAAGAGAT TGTGTTTTTG TTTTTCAGTT GTTAAAAATG AAAAAAAAA AAAAACCTAC CTTATTICAA ACTIGAAAAG ATCAAGAGAT IGIGTTTIG TITICAGIT
GTTAATCTCC TAAAAGTTTA TGCATGAGGA AAAGTAAAAG TGATTTTAAG AATAAGCCAA ATAAAACAC CAAGAAAGAC
CTCCACTACC CTGGGAAGGA AACTGGTTGG TATTAAGTAG GACACCACAT AAAACAGGTG TTATTGAGAG GAGAAGACC
AAAATGTAAC TGAGGTTCAA CAAGACATTA TTTATGCAAT GGCAATGAGA AAAATAAAAA ACACAGTATA ACCATGCTGT
ATTGCTATAA GTCATGTTAC ACACTGGGAG ATGGCTTCAG GGGTATTTGG TTTTTACTTT TTGTTTGGGA GGTTTTTCAA
AAAAATTTAG TTAGAATAAG TCCTTTGAGA AACATCACAG TAGGTTAAAC AAAGTTAGGT TAAATTAGGC TCCTAAGTTT
GACTTCTCAG CAAACTTCTA CTGAATGTTC TGACTGTAAG CCCCAGGATTG CATGACAAAA CCTCTAGTCT GAAGTTACTC ACCTTGACAG GTTGGTTCTG GAGATGACCA GTTTCCAAAT GGTCCACAGG TGGTTTCTTC AATCCCAGTT AAGTTTGTTC CTTCAGAGCA GCTGAAGGCA CACTGTGAGC TGAAGCTGAA GTTTCCCAAA GGGTGAGTAC AGTCCATGGT ACCCAGCTCT GGGGCCTCCA AAGGCTCACA CTGAATCACT TCAATAGGGA AAGAAACAGT ATGGGGAAGA GTTAAGAGGA ACTGACGCCT GGATTTGAAT CCTAGCCCTG CCACTTGATA ACCATGTGCC TTTAAAACAAG GTTACTTGAA CCCTCCAACT TCAGTTTCTT CATCTATATA AGAGGAATAA TGAAATTGTG TTATCTTTAT CAAATTGATA TGGAAACTAA ATGTAATTCA ATTAGCATAA GTCAAGGACC TTAGAACAAA GCCTGACTCA TCAGAAATTC TAAGTAAACA TTAGCTAGTC TTCATATTAT TATCTTCAGC ATTATCTOTA GTGAGAATCC TTAAAGCCAA ATAGGTGTAA CTGGGAATGA CCAGCTTAGT CGGGAAATAA CTATCACATC AGAGCCCCTG AGTCTACTAG AGTATTGGGA GCAAGATGTT CAGAGAAAGA GTGGGTCTCC ATAATAAGCC TTCTTTGCAA GGAGAGAATA TAAAAGTCTA GGAAGCATTT TGACCTCAAT TCTGTCTTCT ATTCTAGCTC AGTTCCAGAA TTTTAACTCT TCAAATTTAA GCCATTATTG CTACCTTGCT CTAGAGACTT CAAGGAAGAA TGGACTCAAG GAATCAGAAG AATTTTTGTA
TTTGGAAACT ATATGAGATG AGATTAGGGA GAAACATGGG AACTAAGAGA AAATGTTATC TTTTTTCATT GATTTAAAGA GTATCTATTA TATATCAAGC ATTACTCTGG GGCTTGAAGA GCTTAGATTT CACCCTGTAG GACAAAATGG TAGGTAGAAAA
TTAATGGGTG GATTGTCATG TATGTGTGAT GTGTTTTAAT TGCTTTTAAT TGATCAGTCT CCCTGTAGTA TGAATAATGT
ATTTGAGGGG AGCTAATTTA AAATTGTGGA ACTCATCTAA TAAACTATTG CAAGAATCTA GAAGAAAGAT AATGACGGCA ATGGTAGTAG AGTTGACAAG TGGAAGACAA ATTAGAAAAA CACTAAGTTG TAAAAATTGG TAGAATGTTA CCCTGCATAA ATGTTGGGGG AGTTAAGAGA GTCTCATACC AGGGTGCCCA TGTAAATGGT GATTCCACAT ACTGAGATAA GAAATACGAA GAGAAAAGCT GACTGGGAAC AATTGGTTTT ATAGTCTTTT AAACATCCCA AAGGACATCC TTAGCATATT TGAGTTCAGA GCTGGAGATA GGCTTATCAG TCCAAAGATC ACATAGATTT GTGAGTCCGC AAAAGTCAGT AAGTTTGACC AAAGGATACA TGTAGATTAG AGTCAGAAGA GCAATATACA AAAGACAAAA GCTGAGAAAT TATAGTAGTT TATGGTCCTG GATAAGTGCT CATGAAGGAT CTCAGGAGAA ATGATCACAG GTAGAAAGAA TGAGAAAAGA GTGATATGAG AGAAACCAAG ACAAAGAAAA GTAAAATGTT AAAAATGAGT GAAATAGGCA TACCAATAAT TAAAAATGAG TAAAATAGGC ATACCAATAA CATAAGGGTT AAAAAATAGA GTTCAAAAAT GGGGTGAGGG TAAAGTATTA GGAAGGAGTC ATGGCCCAGG GATCAAGTGA AATGAGTTAG
ATCTATAGAT CTATTTCAGT TGGTTGACAT TTAAATGTAT TTTGGTTTTA ATTCTTTATT GTTTACAAAC ATTGCTTTTT
TAAAAAAATTA AATTGTCCAA TTCAATTCAG GCTCACAAGC AAGTGCCTCA TATATACAGG CATTTTGTGG ATCCCAAAGA TGCAATGATA AATAGGACAC TTACTGATCT CAAGAAGTTT TCAGTACCAG AGGAGACGGA CAAGTGAACA GATGACTTCA ACATAAGTGG GAGAAATGAG GAAGAAATAT GTGGAGCTAT CAGAACTAAG AAAGCTTCCT AGAAGAAACT GTCTTTGAAC AATGTCTTAA AGATGACATG TTTTTTGGCC ATGTGCAAAA TGAGAGAGAA GGCCACCAGC AAAGTCAGTG TGCTACAGAG CACATGTGTT AAGTGTGGAG AACTGCAAGA AGGAAAAGGAA CTACTAOAAG GAAAAAGCAA GATACTTTCT GGGTAACTCA ACCCCACATE ACAGTIGAG GIGIAATTAT IGAIGATTE TACACATIC CATGGCCAC IGCATGACCA GGGCIGGCAA
AACCTTTAA GGAGGTCAGA AAAAAATAT TITAATGTGA TIACATTTTA GTACTCAAAG TCATTTCTT AGACATAGAT
AACCTTTTGT CTGAGATGAT TTAAATAATC AGGAAAGGTT TATTTGTTAAA TTCATAGCAT AAAAATCATA TGCTAAAATT
TTTACGTATA AAATACACTA AGCATATAGT CATAGGCATT TATTTGCTTT TGGAATGAAA TTACCAATAC TAATATTCTG
TAACACTTAT AGGAAACTTA GTGGCATACC TTGAAACTCT TGAAATTACT TGTTTTTAAT GAGTGAGAAG GTTAAATGAT
GACCTGACCT CAATCATTTC TGCATGCAAT TATTTCTTGG CAATCCCTTT CTTTATAGAA ATCAAAGATT AAAAAGTCCA
AATTTGCTAA AACGGTAGAG TCCAATTTAT AAGAGACCAA ATTAACTATG GTTCATTATT AAAACATCAC TTGGAAAATG CTGGCTGTTT TGGAATTGTA GAAGATTTTA CAGAAATATT CATACACCAA AGATAGTGCA ATTTTTATAT AAAATTATAT AAGGTTAGAC CAAGAAGGAA GCACGCAGCA CCACACTCTC TACTTCACAA TGTGAAAACT GAGGTGATGT GAGCCTAAGT TTCCAACTGG CCCCAGCTGT CAGCTTCTCC TCCCCTGCCT TATTATCAAA GGCACTGATT GTCTAGCTCT TCCTCTGTAC TTCCAACTGG CCCAGGTGT CAGCTTCTC TCCCCTGCCT TATTATCAAA GGCACTGATT GTCTAGCTCT TCCTCTGTAC
TTCCTACGTA GATCTATCAT TTTGATGTAA CTTGATTTAG GGGTATAGCT TTTGTAGAACTG GGGACAAAACT TTACACACCC
AAAATTCTTA GGAGTGACAC GATGCAAGAT TATATAGAGG GCTAGATGTA TTTTAGAATG AACCAGAAGC TGTTCTCATC
CCCCCACCTT TCCATGGGGT AAAATCTGAGT ATTCTCTTAA CCGTGGCCCT TCCTGAGTCT GAGGCAGCAT AGCCGTCTTG
TCACTCCCTA CCTGTGTAAC AGAGGGCTGC CTTTAGTTTG TGGCAGGCGT CATCGTTCCA TTTGCCTGCA TCTTTGTTTC
TCTTGATATA GATCTCCACG CAGCCTCCT TGTTCTTCTT GTTGTTGGGC TCACCACTCT CCCAGTTCTC TGCTTCTTCA
GTAAGAGATT TGTTGGTTCC CACCACGTC CATATTCCTC CTATCTTCCG GATTCCTATC CAGTAGTAAG AACGACTGAA
AGGCAGAGTC TTCTCCAGAT ACCAATTTC CGCCTTGTTT TGTATGGCAA CTAAATCTG GTAATTGTC CAGGAAATC
TCTAGCCCT TTGCCAGTTC ATGCAGACTT ACAATAATGTT ACAGCCTAAAA AGGACCTAGC CATCATCTCAG GCTGAGCTAG GCAAGACATC AGTGTGACCT ATGCAGACTT ACATAATGTT ACAGCTAAAA AGAACCTAGC ACTACTCCAG GCTGAGCTAG ACACTTAGAG ATGAGGAAAC AGAGCCTAAG AGTGTATGTG ACCATCTCAG GATCACAGAA TAGTTGTTTG CAGATTTGAA GTAGAACCTA GACCTTCTGG CTTGAATATA AGATGCTTTT ATCTAAGGTT CTATTTGAAA CAAATTTAGT GGTTTTCTAG GTTTATTTC TTATTAATTT TTTTCTCAAA ATTATTTCAG GTGAAATTTA ACCAACATAT TTTAGACATT CATATTTCTT TTTCTTTGTA GCTGTTAATG ATTTACAACT AATTACCGTG TAATATCATA TAACTATACA ATTTACGTAT ACTTTTTAAT CCTGGAATCA TTTCTTGAAG GCCAACACAT ATGTACCTAT GGGAGAAGCA TAATAAGGAC AGGAAGAACA GTGACATACT

TTTAAGTAAC CTCTTTTACA TAAAAAACAT TTTATTTTAC CATAGGAAGA ACTGCTTCTG GAAAAGCCCA ATATACCACT CAACTCTTAT ATATCTAACT GTATAATTIT TAAAAAGAAC AATITACAAA GCCAAATGGT ATAGGATTAT GAAATTCATT AGATCATGTT CTATACACAA AGAGACTCAA CTGATGATGT TTAATAAACA TATGGACCCA TCAAATATGA GGGCTTTGAA ATGAGCATTC CACTAGAATG CAAGTTCTAA GAGGGAAAAA ACTGTTGTGT CCACTGCTGT ATCCTTAGTG CCTAGCATAA ATTTCACACA TTGTAGGGAC TCAGAAAATA CCTGTTGTAT GAAAAGAGCA CTAAGTTTCT ATGTGACACA GTGCAGACAT GGCATAAGGA ATGTGTGAAC GGGAGAGTTA GCATGTTTGC TTGGCTAGAG CTGAAAATCC AGGCTAGGGA GAAAGAAGAC ATTAGTTTAC TTAGGAAATG AAAAACCAAG TTCAAAGCTA TTGCTGGAGA GTCTTCAAGA ATCAGATATA AAATTTGTCA CAACAATGGG AGAAGGACCA AAAAATGATA AACCCCCGTC CCTTAATAAG CTCGTATTGT AATTGTAGAA ATGACATTAA TGTACACTGA ACTATGAATA AAAAATGATA AACCCCCGTC CCTTAATAAG CICCIATIGT AATTGTAGAA ATGACATTAA
TGTACACTGA ACTATGAATA AAAAATAGAA AATGAGGTGC TAAATATTTG GTACAGATTG TAAGTACCTT AACAGAGATT
TCTTAATTAA CATTATTCCT TATAATTGA GGGATTTTGT GGGGTTATTG GGATTTGAAC TCTACAGCAT GGGCTATTAT
AGGTTAAAAAA TAGTGTTCAG GAGTTTCTGG GGAAGAACTA AAGGTAAGAA GAAAAGAGAT GTTTACAGAA GGGATAGAAT TAACAGCTCT GTGAAATAAT TTTCCCTTAG ACTATGTATA ACTAGTGGAT ATTTAAGAAA AATGAATATA AGTAAAATAG ACTTAGCGAT ATATAAATAT CATAACATAC CACAACAGAG CATTGTCCAC CCCCACAACT TGAAGATGTT CCATAAGTCC CTCTGGGTGC TCTGACATT CCATGGAAAT ATCTGCAAAT GAAATACAAA ATTATATTA GATGTATACC CTTAAACCAC ACATITATAG CCTITGAGGT GGTGCTTACA ACTITCTTAA TAATCAGAAT AAAACACATA TGTCTACTAA CCCTGTCTGA GGTAACAGGT TTCTCAGACA TAGATGAAAA ATTACTTCAA ATTTACATCA GAACTGATGC ACAGTTTTGT TTTGTTCTAT
TTTATTTTTA CGCTTTAGTC TCAAGTTGCT AATCGGTACT GCCCTGAATT TTTTCTATGG TTTGGTAATT TTTATACCTG
CTTTTCTGCT GAGCTATTAG ATAAAACTAT TTAATATTTA CTATGTATAT TTTTTAAAGT ATTGTTGCTG CTTAATTAAC TATTGATGCT TATATTTAAT GTTATAGCCT CACTCTTGAT CATAATGGGT CAATGCCTCA AATACCTAAA AAAAAAAAA ATTAGATAGC CAGACACCAG GAAAGAAAAG TATTTCTTTT TTTAATAAAA AGAAATACCT TTTTGAGCAA CTGAAATGAC AAAGTCACAA ATTTCCTGCA CACCITAAAA TATACTTAAT GTAAATGACG AGTTAATGGG TGCAGCACAC CAACATGGCA CATGTATACA TGTGTGACAA ACCTGTATGT TGTGCACATG TACCCTAGAA CTTAAAGTAT AATTTTAAAA AAATTCTATC TTCCAAAGCA TATCACTTCT CAGGTAGACA CAGTGTTTAT TGCAAAAGAT CTGATTTCAA TAGTATTTCT TCAAGAGTCT GGACTATAAA ATGAGATGGT TTTATAAGAC TGCATGTGAA ATTAGGACCC ATATGATGAA GGACAATAAA AAGGAAGACC CACTGATGTG AGTCAATGAG TCAAATGCAA ATCAGATTTG CATTTTTAGG AAAATAATAA TAACAACAAC AAAAACTCTG AAGCTCAGCG CCCCATATTT ATTATATTGT TTAATCTTTA TAACAGCTCT CTGCTATAGA TATGATTATT ATCCCCATTC
TAAAGAGTCT CAAAGAGGTT AAGAAACAAA TTCAAAAACT AGCGAAAGAC AAGAAATAAC TAAGATCAGA GCAGAACCAT AGGAGGTAGA GACACGAAAA AGCCTTCAAA AAATCAATAA ATCCAGGAGC TGCATTTTGA AAAGATTAAC AAAATAGATG GACCACTAGC TAGACTAATA AGAAAGAAGA ATCAATAGAC ACAATAAAAA ATGGTAAAGG GGATATTACC ACTGATCCCG TAGAAATACA AACTACCATC AGAGATTACT ATAAACATCT TTACACAAAT AAACTAGAAA ATCTAGAAGA AATGGATAAA TTCCTGGACA CATACACCCT CCCAAGACTA AACCAGGAAG AAGTCAAATC CCTGAATAGA CTAATAACAA GTTCTGAAAT TAAGGCAGCA ATTAATAGCC TACCAACTAA AAAAAGCCCA GGACCAGATG GATTCACAGC CAAATTCTAC CAGAGGTACCA
AAGAGGTGCT GGTACCATTC CTTCTGAAAC TATTCCAGAG AATAGAAAAA GAGGAACTCC TCCCTCACTC ATTTTATGAG
GCCAGCATCA TCCTGATACT AAAACCTGGC AGAGACACAA CAAAAAAAGA AAATTTCAGG CCAATATCCC TGATGAACAT
CATTGCGAAA ATACTCAATA AAATACGGCA AACTGAATCC AGCAGCACAT CAAAAAGCTT ATCAACCACA ATCAAGTTGG CTTCATCCCT GGAATGCAAG GCTGGTTCAA CATACACAAA TCAATAAACA GAATCCATTA CGTAAACAGA ACCAATCACA AAAACCACGT GATTATCTCA ATAGATGCAG AAAAGGCCTT GGATAAAATT CAACACCCCT TCATGCTAAA AACTCTCAAT AAACTAGGTA TTGATGGAAC GTATCTCAAA ATAATAAGAG CTATTTATGA CAAACCCACA GCCAATAGCA TACTGAATGG GCAAAAACTG AAAGCGTTCC CTTTAAAAAC TGGCACAAGA CAAGTATGCC TCTCTCACCA CTCCTGTTCA ACATAGTATT GGAAGTTCTG GCCAGGGCAA TCAGGCAAGA GAAAGAAATA AAGTGTATTC AAATAGAAGA GAGGAAGTCA AATTGTGTCT GTTTGCAGAT GACATGATTG TATATTTAGA AAATCCCATT GTCTCAGCCC AAAATCTCCT TAAACTGATC AGCAACTTCA GCAAAGTCTC AGGTTACAAA ATCAATGTGA AAAAATCACA AGAATTCCTA TACAGCAATA ATAGACAAAC AGAGAGCCAA ATCATGAGTG AACTCCCATT CACGATTGCT ACAAAGAGAA TAAAATACCT AGGAATCCAA CTTACAAGGA ATGTGAAGGA CCTATTCAAG GAGAACTACA AACCACTGCT CAAGGAAATA AGAGAGGACA CAAATGAATG GAAAAACATT CCATGCTCAT GGGTAGGAAG AATCAATATC ATGAAAATGA CCATACTGCC CAAGGTAATT TATAGATTCA GTGCTATCCC CATCAAGCTA CTACTGACTT TTTTCACAGA ATTAGAAAAA AACTACTTTA AATTTCATAT GGAACCAAAA AAGAGCTTGT ATAGCCAAGA CAATCCTAAG CAAAAAGAAC AAAGCTGGAG GCATCATGCT ACCTGACTTC AAACTATACT ACAAGGCTAT AGTAACCAAA ACAGCATGGT GCTGGTACAA AAACAGATAT ATGGACCAAC GGAACAGAAC AGAGGCATCA GAAATAACAC CACACATCTA CAACCATCTG ATCTTTGACA AAGCTGACAA AAAGAAGCAA TTGGGAAAGG ATTCCCCATT TAATAAATGA TGTTGGGAAA ACTGGCTAGC CATATGCAGA AAACTGAAAC TGGATCCCTT CCTTACACCT TATATAAAAA TTAACTCAAG ATGGATTAAA GACTTAAATG GAAGACCTAA AACCATAAAA ATTCTAGGAG AAAACCTAGG CAATACCATT CAGGACGTAG GTATGGGCAA AGACTTCATG ACTAAAACAC CAAAAGCAAC AGCAACAAAA GCCAAAAATTG ACAAATGGGA TCTAATTAAA CTAAAGAGCT TCTGCACAGT AGAAAAAAA AAACTATCAT CAAAGTGAAC AGGAAACCTA CAGAATGGGA GAAAATTTTT GCAATCTATT CACCTGACAA AGGGCTAATA TCCAAAATCT ACAAGAACT TAAACAAATT TACAAGAAAA AACAACAAC ACCATCAAAA AGTGAGTGAA GGATATGAAC AGATGCTTCT CAAAAGAAGA AGTTTATGCA GTCAACAAAC ATATGAAAAA AAGCTCATCA TCACTGGTCA TTAGAGAAAT GCAAATCAAAA ACCACAATGA GATGCCATCT CATGCCAGTT AGAATGGCGA TTATTAAAAA GTCAGGAAAC AACAGATGCT GGAGAGGATG TGGAGAAATA AGAATGCTTT TTACAGTGTT GGTGGAAGTG TAAATTAGTT CAATCATTGT GGAAGACAAT GTGGCGATTT CTCAAGGATC TATAACTAGA AAAACCATTT GACCCAGCAA TCCCATTACT GGGTATATAC CCAAAGGATT ATAAATCATT CTACGATAAA GACACATGCA CACTTATGTT TATTGAGGCA CTATTCACAA CAGCAAAGAG TTGGAACCAA CCCAAATGCC CACCAATGAT AAACTGGATA AAGATGATGT GGCACATATA CATCATGGAA

TACTATACAG CCATAAAAAA GGATGAGTTC ATGTCCTTTG CAGGGACATG GATGAAGCTG GAAACCGTCA TTCTCAGCAA ACTAACACTG GAACAGAAAA CCAAACATTA CCCATTCTCA CTCATAAGTG GGAGTTGAAC AATGAGAACA CATGGACACA GGGAGGGGAA CATCACACAC TGGGGCATGT CAGGGGATGT GGGGCTAGGG GAGGAACAGC ATTAGGAGAA ATACCTAATG TAGATGACAG GTTGATGAT GCAGCAACC ACCATGGCAC ATGATATACCT ATGTAACAAA CCTGCACGTT CTGCTCATGT
ATCCCAGAAA TTAAAGTATA ATTTAAAAAA AGTTTAAAAA AAGAAAGTTG CCTTAGTCAC ATAACTAGTA AGGACATGG
TTGGGAATTT GAACAGAGGC CAATCAGTTC CAAATCCATG CTCTTGATCA TTAAGCTGAA CTTATGGCAG GAACTTGGAA
GACATGGTAA AATGGGGAAA AACGTGGAGC CAGGGAGACT TGTGAAAGTG CCAGTGCTCC CACTATACCC TGAAAGAAGT ATCTAGACTT ACTITITICT AAGTCCTCTC CTCTAATTCT CTCAATCTCT CTCTCTTTT CTCTAAGAGA TGGGAATGCT GCTCTGTCAC TCAGGGCTAGA GTGCAGTGGT GCGATCATAG CTCATTGCAC TCAAGGAATC CTAGGGTCTA GTGCCCCTTC ATATTGCGGG ATTTTTTAAG AAATCAGAGA GACCGATGGG GTTCAGGAGG ATATTTATTA TTTAGGTGCA CTGGCCAAGT CAGATTAACA TCCAAAGGAC TGAGCCCTGA ACAAAGAGTT AAGTTACCTT TTAAGCATTT TGTGGGGTGG GAGAGAGGGG TATCTGTGCA GGGGGAAGCA TACTACAGAA GTGAGAAATA AAGACAGTTA TTCAATTAAT TGAGACATGC ATTACATCAT TTCTTACTTT TCAAGAAGAA ACATGTTTTG CGACTTGAGT TTATCTGTCT AGTGACCTTG CAGCTGCACA GCTAGAGAAA CAGGGTCTTC ACAATGCCTG GGAAAGGAGG AGAGGTAAGT CTCACTAGCC ACAGAAAAAC AGGCAGTTAA TTTTTAAAGG GCTCCAGCTC TTTCTCTTTC TCAGGGGGAG TIGGGTTTTG TTACATACAA CTGAGTTTCC GCTTACACAT TATTTAATTT CTTTTAATTC CTGTTCCAAA AGAAGCCAGA TACAAAAGGT TACATGTTGT CTGATTCCAT TTATATGAAA CATATAGAAG AGGTAAATCC ATAGAGACAG AAAGTAGATT AGAGGTTCCC AGGGGCTGAG GAAGAAATGG GGACTAACTG CTTATAGGGT ACAGAGTITT CTTCTGATAA AAATATTIIG GAACTAGATA GACATTIIGT TAGGCCATTC TIGCATTGIT ATAAAGAATT ACCTGAGACT TGGTAATTTA TAAAGAAAAG ATGTTTAATT GGCTTACACT TCTGCAAGCT TTACAGGAAG CATGGTGCCG ATATCTGCTC AGCTTCTGGT AAGGCCTCAG GAAGCTTACA ATCATGGCAG AAGGTGAAAG GGGAGCAGGC ATATCACATA GCAAAAGCAG GAGCAAGAGA GGGATGTGGG GAGGTGACAG TCACTTTTAA ACAGCCAGAT CTTGTGAGAA CTCATTCACT ATCATGAAGA CAGTACCAAG AGGATGGTAC TAAATCATTC ATGAGAAACC CCACCCTCAT GATCAAATCA CCTCCCACCA AGGCCCACCT CCAACACTGG GGATTACAAT TTGACATGA ATTTGAGTGA GAACACGGAT CCAAACCATA TCAGAGATGG
TGGTTATACA ATGCGATAAA CGCCACTGGA TTGTACACTT TAAGATGGTT GTTTTATGTT GTGTGAACTT CACCTCAATA
AAAAAAAAATA TTTAATGTAC ATTCAGCCAA AAGAAGATTT GGAATAGGAA AGGTCATGGA GATATATTAA CAGCCATTTG
ATGGGTGGTA AGGAAAAGCC TGGAGAGAGG ACCCAGTGCT GAAGAACCGT TTGCCTGCCA TAGGACATGA GGGAAGTACC
ATAAAAACCAT CACAAAACCC TGGAGAGAGG ACCCAGTGCT GAAGAACCGT TTGCCTGCCA TGAGAACTGA GGGAAGTACC AGTGAATGCC ATTGAAAGCA GCATCCCTGG GTCCAAGGGA TGGTCAAAGG ACCACTACCC AACCCTTCCC TAGCCTACGC CTCCATTACA GATGACCGCA AGATTTATTT GCTCATTGCT GCCAACCAAG GCTGCACTCA CTGCAGTTGC TATCAGTTTA
TCATGGGTAA AAGGAATGTG CAGTAGAGAA CTAACTAACT GCCCACCTAC CTCCACAATC CTATCAGGAC AAATCACCAT GGCTCACATT TCCTTACATT TGGCATGTAA GCCCCTCTTA CTGTCTGCA TCTATCTCCT ACACAGTTCA CCTAAACTGT TCTCTCCTGA CCCAAACTGT ATTTCATCC CAAATGCTTC CTGGCATCT CTGGCATCT CTGCCTACC ATCACCAAAC TCCCCTCAAT CTTCCAGTT CCTGTTCAAA CTTTTCTCCT ACCTCCTTGC TTTGTCATTA GCCCGACTGC CTCCCTAGGA CATCACTTCC CCTGCAGATC TCTCAAGATG ACAATATTTA TTCTCCACAC AGCACATACT TCAGGGTTGG AAGGCAGGGG CAATCTTCTC CTTTATAATG AGTGCCTCTT ATATATGTTT ATTCATCTGC CCTCTTGTAA AACACACAC CACACACACA CAAAGAAGAA ATAAAATAAC TCTGCTTCTT TGAAGCTTGT GACACTGAGA TAAACCATCT CACTGTCCTC ATTGTAGTGA CCTCTCAACT CCTCATGCAA GATTGGCTTT GGCACCTAGT TCCTGATCTT CCTTTCCCTG TAAGCACTTC TCATAGTCTT ACGGGACTTC ACCATCCATG GCACAACCAA TACCACAGCC CAGATCCTCA GCTCTCCAAT GACATTTTCC TCCACTAGAC TTGAGCTACC TCCTTCCCTA GGCACAGCCT CAACCTCGAC ACACCTAAG ACTGTACCGT CTCTAAAGTC ACATGTTCAA ACACTTCACT CTTTAACCAC TGTCTCCTAT TCTTGCAAGT GTATTGCTCA AGTATCTCAT TGCAATGCTT TTTACTTCTA CCTCATTGAA CCTCCAGGCC ATTAAACATT TCCTTATTTC TAACCATCAG GTTTCTCCTT ACTTGTTTGT TTGTTTATTT CTTAACATGC ACAAGGACCA TTTTCCACAC CGCTATGATT GCATCCCAAC CAATCAGCAG CAACCATTCC TCTGCCTGCC AAATTATCCT TGAAAAATCT TAGCCTTAGA ATTTTGGGGG AGGCTGATTT CAGTAATAAC AAAACCCCGG TCTCCCATTT GGCTGGCTCT GCATGAATTA AATTCTTTCT CTATTGCAGT TCCCATCTTG ATAAATCACC TTTATCTGGG CAGCAAACAA AAGGAACCCA TIGGACAGIT ACACIGITGG CAGATATATC TIGCTTCCAA AATTGATTT TIGTTTAATG AATTTATICT GTITTCTIGA TATTTACAAC IGTGAATGIT GTGTCIGAAT TCTCTTTATT TCTTGTTGAA AAGAACTATA TTGCTACAGC CAGTACATAC AGATGGATAG CTAATTACTC AACACGGGGG GATGTGACCA TCACCGCACT GTGCAAATGA ATGTTACCCA TTGTCCACTT TTCCCAAACT ACATAGTGTT ATATGGTATA TGACCCAATC AACGGTGGCA AAGCTCCAGA AATACCACAT

	TGGGGTTTCG CCAT	GTTGGC CAGGATGGTC	TTGATCTCTT	GACCTCGTGA	TCCACCCGCC	TCCACCTCCC	AAAGTGCTGG
	GATTACAGGC GTGA	AGTCACC ATGCCCAGCA	CTTGTGTGGA	TGTTTTAAGC	TCCCAGGTGA	GTGAATACAA	AACTAGATCT
	TICCCTTCTG TAGC	CATCTGT ACTGTTTACT	CTATGCATCT	CAATATTTTT	TCTTTTAGTA	TCTTTCCTTT	TTCTCTCTTA
	TTACTTCCTC TTGT	GCTATT TTTACACCTC	CTTTTTTAAA	AAATTTTTTC	CCTTTTATTT	CTATTGACCT	TTAGCCCTCA
5	CAATGATTCC TACA	AGCCCC ATTTCTGTAA	ATGGGGATTG	AAATAATTGC	TGGACTTTTG	AGAGATAGAT	TTAAATT
	GCAAACTGGC AGTA	AGTGGGG GCAGTTGAT.	A CATAACTAGO	TTTTAAAGTC	TAGCCTTCTG	AGACCACTCA	TICCATITGT
	GAAAAGTGAT TCTA	ACTICIT ATTATGAGCC	AAAATATGCA	TTCATTCACC	CATGCATTGA	TTTATTCATT	CAATAAATAT
	TTGTTGGATG TCCA	CTCTGT ATCAGGAATG	TGCTAGGTTC	TGGGAATACA	GCAATGAACA	AGGTAATTT	TCCCTACCCC
	TAAGGAACTT AGAG	GTTTAGT GGGGAAGACA	GACATTAAAC	AAACAATTGT	GCAAGTAATA	ATCTATAATT	ATTTATTACA
10	ATTAAAGGAA GGAA	AGAGACA TATGGATTAT	GAGGGCATTA	AAGAGGAGAC	CTAGTGTAAG	TAGCCAGTTC	TCGTGAAGGG
	ACATGTATTA GTTG	GAGTTC TCCAGAGAAA	CAGAACCAAT	GGTGTGTGTG	TGTGTGTGTG	CGTGTGTGCG	TOTGIGIGIT
	GGGGTGTGGG GGTC	GTGGTAT TTTTATAGA	AATTGTCTCA	CACAATTATG	GAAGCIGAGA	AGICCCAIGG	CCIGCIGICI
	ACGAGCTGAG AACC	CAGGAAA GCCAGTGGA	A TACITCAAAG	TCCAAAGGCC	CIGGAACCAA	GAGIGCCAGI	CCCTTCCATC
1.5	AGGAGAAGAT GGG	TGTCCCA GCTTAAAAA	G ACAGIGAAII	CACICITITI	GCICIACAIA	TOGALATACT	CTCACAGACA
15	ATGGCCACCC ACAT	ITGGTGA AGGCAATCC IGTTTTA TCAGGGTGAT	CITAGICIAC	TOGACTTAAA	CAATGGTGAT	ACCTCTACAA	TCACATACAT
	CACIGAGAAA IAAI	GTTTTAT GGAAAGTGAG	TTTTATCTAA	ATAAAATTTC '	TAAGAAAGAG	ACTTAACACA	GAGATAAACA
		GTCAAC CTTTATAGTG					
	TTATAAAATA TTTT	AAGTTA TAATTTAAAA	TTCTCAATAA	AACTCAAACA	CAAACCACAC	TEGTATTTCA	CACAGCTAAT
20	TTCTAATGCA GTTT	ACATAA ATATTTACAA	CACTTAAACA	ATTTCAAAGA	AAATAACACT	GTATTCCATA	CATAGCCTGA
20	TICIANIGEA GITT	CTCTCT TATTICCAG	ACTITITICIC	CCCCTTTAAA	AGAACCTCTG	CTGTTCTGAT	CCTTATCACA
	TCTCTGTTTT GACT	GTTGGC TITGTTGTTG	CCAGTGTTCA	GCCAGAACTT	CTCTGAAACT	TTTTTTCAA	CACATGCTAA
	GTTAATGGAA GTGT	TAGGAGA GTTTTGATTC	TCACACTCCT	CAAGGCTAGA	GCAGCTTTGG	CAATTACTGA	CTGAGAATTT
		TCAACT GAAAACTGGA					
25		CTCTCT TCCAGAGCAC					
		CCAGAT GACTETTTA					
		ATATCT GACAAACATC					
	GACATTCATA AAAT	TTATACC TTTGTGTGTT	TGCATTTATG	CTTTTATTAG	TTCAAAACGT	TTGGCCTCAT	GGAAGTTTTT
	CATCGTGGAA ACCA	ACATATT TCTGAAAAA	A TATCTGACAA	TATACAAACC	TTCCATTCAG	TTTTTACTCT	CCAATTCTAC
30	CATGITTTCA AAAA	ACAACT GTAGTAAAA	CACTCAGAAC	TTTATTCTGG	TTAACATCAT	GCCTTGCTAG	GGGACAATAG
	TTTCCCTTTT TGAAA	ATAAAT TTAAAACAGA	TGTAACATAA	TTTGTTAATA	AACAATGAGG	GGGTAATCTA	GAATAAGTAA
	CTTTTACCAT ATCA	TAGTTG ACAGCATTTA	CAAGTTTTTT	AAGTCCCTAC	CACACTTGTA	TIGAATGAAG	AAGTATGGAA
		CAATGC AAGTAAAAA1					
		STGCATA GTAACCCTCC					
35		AACATCT GTCATTTTT					
		GACAGC AACTGTGTAA					
		AAGATT TTACAGCGAG					
		AGAAAA TATCCTTTCC BAAGGCC GTCCTTGCCT					
40	AGICITICA GITO	ATAGTAG GCAAGAAGG	G CCAGAGACIII	CALCIAITOA	T ATTTTTTTT	GTTAACTTCA	GTGTATCCCT
40		IGCACCT GTTTCTGTAA					
		ACCTTCT AACACAGAC					
		TACATAT TATACCTCTG					
		GAATAA TAATGTATCA					
45		GTGGGGA GATATGTTG					
		AAAAATTTTT TAATTT					
		AATTTTA GAACCAGAC					
	CAATTTACTT AACT	TTCTCTG TCTCATTTTC	TTCATCTGTG 1	GATAAGAAA	TAAAGTAACA	GGCCAGGCCC	AGTGGCTCAC
	GCCTGTAATC CCAG	CACTTT GAGAGGCCAA	GGCGGGTGGA	TCAGGAGTTC	AAGATCAGCC	TGGCCAACAT	GACGAAAAA
50	TACAAAATCT CTAC	TAAAAA TACAAAAATI	AGCTGGGTGT	GGTGGCAGGC	ACCTGTAATC	CCAGCTACTC	AGGAGGCTGA
		CTTGAAC GCAGGAGGT0					
		ГСТСААА АТТАААААА					
		GAAAAAT TCCCAGAATA					
		CAATAAA GCTAGATCO					
55		TCTCCCC TGCTCCCTCC					
		CATAAC CATTTGTGAT					
	TGGTAGCTTC CATC	TGATTC AAGGCTTTGG	CAGCIGCIGI	GGAATACATG	AGAACACTAG	CCTCCCACCA	ACAAATTTCT
		AATATGT GGAATGTTC					
60		AAAGACA AACAACCAT AGTGTTG CAAACTCGAT					
00		AAAGTGC ACAGCCATC					
		CCCAATT TTTCATGAGA					
		AATGTTT TAAGTACTCT					
		ACTOTO AATTTAAGOO					
65	GTGCTCATCA TGGC	CAGTTCC ATTGCACAAT	TCCGGGAGGC	ATCATATAAT	TCAACATGAA	TAGCACCCCC	TGGAGTTGTA
	CAATATTAGG CACC	GACTAAC ATTTTTATTI	CCTGAAACAC	TTCCCACACT	GAGTTGTACT	ACTAACTCTT	TTCTTAATAC
	TTCTGCTTAA TTAT	ACTGCA TITTATCCAG	ATTCTAATTA	TTGTTTAAAT	CAGTAAGCAA	GACCATGACT	TATCAATGAG
		TTCAAAA ACATITTIGA					
	GGAGAAATGG TGCT	TAATGTC AGGAGGGAG	GTCCAGCAGC	AGAAAGTCCA	GCTACCAAGG	GAATGTTGGA	CTCAGTGGGA
70	GCTAAGGAAG TAAG	GAGACGA AGAAAGGTC	A TGAGGAAGA	A TTGATGTTA	A AGTCTCTCCC	TCCTGTCCCT	TTGGCCTTTT
,,	TTCTGTACAT TCAT	TACTAG GAGCAGAAGA	GCTATCTAGT	TTAATACAAG	AAGCAGAGAT	GTGGCATTAC	AGGCCTTTGA
	GATCTGCTCC AAGC	CACCTT TGAAGCTATT	TCCACCATTG	GCAGGCAGAA	CTCTAACTTG	CCAAGCTCGT	TCACAATACC
	ACACCACACC TTGG	GTTAATA AACACTGCA	C TTGCTTGCTC	TCTTGCTCTC	ACTCCCTCTT	GTTTTCCATT	TCCCCTTTCT
	CCTCTCCTCT CTCT	GTCTCC TTTTTCCAGT	TGTCAGAATT	CTACCCTTTC	CATCAACATG	CAACTTCTGT	TTTTTCTCTA
75	TCCCCATACA ACTT	TAATATT CACAACTTGT	CAACCTGGGC	GAACTTTCTG	GTTTGGATAT	AATGAATAGT	TGATTACTGT

```
AACAAGATAG CTCCCCCTTT TTCTTTTAA TCACCAGACA ACCACCATCA ATCAATGCAT CACCTTCACA GGTAGGTAGC AGGCCAGACC AGTGTCCTGT GGCTCCACAT GTCCGAGCTG CAGAGCCATT GAGCGTCCAT CCTTCAGGAC AGGCGAACTT
  GCACACAGTG CCAAACACGG GCTCCCCACT GCAGCTCATG TTGATCTTTC CCGGAACTGC CAGGCTTGAA CATTTTACCA
  CTGCAAATGT TAGGTACACA GGCAGAGTTT CAGAAAAATC TACTGGAAAA CTTCCAAAAC TTGCTTAAAA GTCAACAATG
  AATGTAAAGT GTAAGCGCTA CTTAGTTTTC AGCATGTAGG AAATTAGGAC CAAACCCCTT TGGGGCAATC TAGGTTCAGA
   AACTITATGA AGTATITIGAC CTGTACCCTA AAAAAGTCTG CACTCAATTC TACCTTGGCA GGAAGGAACC TCTTCTGTCC
   ATTGTCCCTG AGATGTGCAC TCAAGTTGAG TTGATCCATG TAATTCAAAT CCCTCCTCAC AGCTGAAGGC ACAAGAGGAC
   TTGTAGGTGA ATTCTCCAAT AGGGGAATGA GCACACCTCA CCAAACCCTT CGGGGGCTGG TGGACAGCAT CGCATCTCAC
  AGCTGGAACA CACGAGAGAG CACTITAGAA GTTTGTTTGC ATCTCCAGCA ATACGTTTCC CAAGGTAACC AAGTTCCCAA
 GCTCTTCAAT AGTTCTTTTT ATCTTAAAAT AAAATAAAAA CAAAGACTGT ACCTTCACAT GTGGGCTTCT CGTTGTCCCA
CTCCCCTGTG GGGCCACATT GGAGCCTTTT GGATCCCTTC AACACAAAAAC CCTGCTCACA GGAGAACTCA CAGCTGGACC
CATAACGGAA ACTGCCAGAA GCACTAGGAA GACAATTCAT GTAGCCTCGC TCGGGGTTGG ACAAGGCTGT GCACTGGAAA
GCTGAGACAT CAAAATGATG GTCAGAAAAT ATTGCAGTGG AACTAGAGAG TACTTGGCGT TTGTTGAGTG AACCCAGTTC
GTCCAAGTTT GAAGATGGTT GTTCTTTAAG AAAGTATAAA TCGAAGGATC TCAAGCTTAC CTTCACAAAC TGGGATTTGC TGTGTCCACT GCCCTTGAGT GGTGCATTCA ACCTGGGCTG GTCCCTGCAA CATGAAGCCT TCCTCACAGG TGAAGTTGCA GGATGATTTG AAGGTGAACT CTCCAGCAGG GGAATGGCTG CACCTCACAG AGCCATTCTG AGGCTGGCGG ACGGCCCTGC
 AGGICACIÓN AGGICAGO AGGICAGO GOARTOGIO CACCIOLAGO GOARTOGIO CACCIOLAGO AGGICAGO AGGI
 GCTTCCAGGG TTTTGGAAAC ATTCCACGAA CCCATTGGCT GGATTTGTCA CAGCATCACA CICAACCACT GAGGATITIA
AAGAGCACCA TGAATTITAC AGAAGAATGA TCTTTTCACT TCCTATTGAG CTGGGTGCCT AACAGAGTGA GGAAGCTGCC
TTCAAAGGGT AGATCCCAAA GTCCTATGTC AATTCTTAGG GACATCACAA AGCTTTTAT TCTTTTTCAT
GGATATTCTA TCTTTTCTGA TTTCCACTTT GCCTATGCTG AGTGGTCTCT AATCTATGTT ATCATTTACG TGAGGTAAAA
ATTTAAAAAA AATAGATTCC AGATTAGGAG TTATGACTAG TACTGACATA CGTAGGCTAT TCATTTATTT TAGCCCATCA
GAGCCTGAAG AACTGATTTT TCTTTTTTTG GCCTCTGGTT CAGAAAGATA AAATTAAGAG AGAAAAAAGAGA ATACTAAGAC
TGCTTGACTA TCATGGTCTT AAGTTAGTCC CATGGCTTGG AAAAGTTAAA CAGGGAAACA AGATGAGAAA TCCATTGAGA
TTTCTAGAGC TTTATTGTTT TATGGTCTCC CTTACAAAATC ACCAGAGCCT CAGAAACACAC CATTTCAAGC ATAGAATAAA
AAAAAAAAAAA CTTTCCCTGA AGTTTGAAA ATGTAAGTTG AACTAAAAAAA CAGAAGCAAT GAGGGAATAA TACAATTAAA
  AAAAAAAAA CTTTCCCTGA AGTTTTGAAA ATGTAAGTTG AATCAAAAAA CAGAAGCAAT GAGGGATGAG TTACAGAACG
 TTCTGTGCAT TCTCAGAGGG ATTTACCATT GCAGGCTGGA ATAGGAGCAC TCCATTCTCC AGAGGACATA CACTGCATGG
  TCTCCATGCT GCTTGGCAGG TAACCCCTAT CACAGCTGAT AGAGCAGGAA GAATTGTAGC TGAAGTTTCC CAGTGGGTGA
 CTGCAAACCA GGCTTCCATG CTCAGGGGAT TCCAGGGGTG TACAGGTTCAC AACTGAAAA GAAACCCAAA TCAGTTCTGC
TCATCTCAC CCTTTAACAG ATAAGAACAC TGGAAACTAG AACTACAGTT TGGTTTTTTT TTTTTTTAGT TTAAAAATTT
ATAAAATTTC TAATGGAATT TGTAAAAATTG ACTGTAATTC TACCCCTTTT CTTTTATTCA AGAAAAATGCT GATCCATAAC
AACAACAACA AAAAAGCAGT GATGACAACC ATAAAAAAGA AATATTGAGT GATATGGGGA GAGTAGTGTA ATTGTGTTTA
 ACACACACA AAAACAGI GAIGACAAC AIAAAAAAA AAIAIIGAGI GAIAIGGGA GAGAACTI CACCACAACTI CACCACAACTI CTTCTACAAC CCTCAAAACT GTTCAAAATT ATGAACAAA CACAGCAAAC TTAGGTACCA CACAAACTT CTTGTTACTT TTCTCACAAC TGCTAAAAAT ACTACAGTAA GCTTCCAACC AGGATGAGAA CCATTCACAA AGCTATATTT CAAATTTAAACTTG AATTCGTTGA AATCAAATA CATTTAAAAT TCAGTTCCTC AGTGTCACCA GCCACATTTC AAGTACTCAA TAACCACATG
 TGGCTCATAG GTACACACTG GAAAACACAG CTATGGAACA TITCCATTAT CACAAAAGCT CTACTGCACA ACGCTGTGCT AAGGAATCTT GGAGAGAAGC TCATCTAACT CTCTTAATGT ACAAATTTAG GAACTGAGAC CTCATTTCAT TCAAGTGACT
AAGGAATCHT GGAGAGAAGC TCATCTAACT CTCTTAATGT ACAAATTTAG GAACTGAGAC CTCATTTCAT TCAAGTGACT
TGCTCCATGC TACACGGCTA GTCATTACAG AGCCAGAGGC CAGAGCATGA ACCAAGATAC CCTGGACTCT GTAACTCACT
CATTTCTACT GCAACGTCTT GTTACCACCT AGATGAGGTG AGTACATGTT CCTCGCAGGG ACACGAGATT ACAGTTTATT
GAATGTGTCC TGTGTGCCAG GCACCATGTA ACCATGAGCC TATGAAGTTC ACACTATTAT TATCCTCATT TTACAATGAG
AAAACTGACA TAGAGAGTTA AACTATCTTG TCAAGGTGCC AAAATAAATA ACTGGTGAAT CTAGGACTCA AACCCAGCAG
GGTCTGACTT CATAGTCTCA GCTCACGATC ACCATCTCAA GTGAAGAAAG AGGCAAGAAC CAGACTTACT TTGCTCACAC
CTAAATGCCAAC CTAGAGCCTG GGTCAAACTTAC CAAGTGTAAT TATGATCCT CTCTAACACTT TAGACCTCC CAAGTGCACACTTCACACCT TCAACCTCACC TATGACCACG GTCAAACTTACC CAAGTGCAACTTACT TTGCTCACACC
TTGAGTCCAC TGAAGCCAGG GTCAAACTTAC CAAGTGTAAT TATGATCCT CTCTCACACT TAGACCCACC CAAGTGCACACTTCACACCT TTGCTCACCACT TCAACCACTTCACACCT TCTCACACACTTCACACCT TCAACCACTTCACACCT TCTCACACACTTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACACTTCACACCT TCTCACACACTTCACACACTTCACACCT TCTCACACACTTCACACACTTCACACCT TCTCACACACTTCACACACTTCACACCT TCTCACACACTTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACCT TCTCACACACTTCACACCT TCTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACACTTCACACCT TCTCACACCT TCTCACACTTCACACCT TCTCACACCT TCTCACACCT TCTCACACCT TCTCACACTTCACACCT TCTCACACCT TCTCACACCT TCTCACACTTCACACCT TCTCACACTTCACACT TCTCACACCT TCTCACACTTCACACT TCTACACCT TCTCACACTTCACACT TCTCACACTTCACACT TCTCACACTTCACACT TCTCACACTTCACACT TCTCACACTTCACACT TCTCACACTTCACACT TCTCACACTTCACACT TCTCACACTTCACACT TCTCACACTTCACACT TCTACACTTCACACT TCTACACTTCACACT TCTACACTTCACACT TCTACACTTCACACT TCTACACTTCACACT TCTACACTTCACACT TCTACACTTCACACT TCTACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACACTTCACA
 TTGAGTCCAC TGAAGCCAGG GTCACACTTG CAAGTGTAAT TATTGATGGT CTCTACACAT TCACCGTGGC CACTGCAGGA
TGTATTGGTA CAGGCAGCTA CGGAAAATAC AAAGCATGAT GAGGAGGACT ATTACTGTGC TTATACTGAG TGCCTTTGAT
TTTAGAATCA ACAGTGTGCA ACAGAGACAT CAGCAGTCCT ACAGAGTGCC ATAGACTTTA ACTGAAGTGT TTTACAAAGT
TCCAAATCTG AGTTTCAGGC CCACCTATCC TAAACCTTGA TGCTAATGTA TAGCTGTGGC TGGCACCTAC CGTAGAAAAT TTACTTCTTC ACAAACTCTG AAGACAGTTC CCCTACCACA AATAAACAAG TAATTAAAAT ATGTATTGTG TGTGTGCATT TTTATATGTA AAGAACTACA TATTTGCCTA CAGTATTTAT ATATATTTTA TATATATACA TACACACATA TATGTGTGTA TATGTGTGTA TGTATATATA TAAAATGTAT ATAAATGCTG TAGGCTATAT ATATATACAC ACACACATA ATGTGTGTGT
AAGACCAGGC TCCACTCTCT TTAATGAGAA GCACTAGTGG GAGAAAAAGA AAAGAAATGG TAGAGTTTGG TACTGTTGTG
 GTTTAACTCT GACAACTGTG CTTTTTATTG TCTTATTTTT GGCAATGTTT GTGACATGGC CCAGACTTTT CTCATCTTTT CAAAAGTAAG AAGTACGTAT GAAGAAACAG CGACTTATTG TTTATCTCTT TTGTGACTGC CACCCACTAG GTACCTTATC
 CACACTCACT CACAACATTA TAGTATACCC ATTTTGTAGT AGAATAATAA TCAGAATAAC TAAGCTTTAT TGAGCACTTA
```

```
GTATGCACCA AGAAGCACTG TATGAGGTAC TTTCCATGAA CCATGCTATT GAATCCTCAC AATGCATCTG GGAAATAGGT
 CATTATGATC CACACTITAC ACTTAAGGAA AGGGAGACAC CAAGAGGTAA AGTAAATGAC CCCAAGCCCA GGGAAGAACA
CATTGCAGGT AGAGGTCAAG GATGCTGCCA GATATCCTGT GCAGGACAGC CCCAGACAAG CAAGGATATT TCAGTCTGAA
ATATCTATAG TGCGAGAATG AGAAATCTTG GTCTAATGGC ACTGACTTAC CCAAAGTGAG AGCTGAGAGA AACTGTGAAG
CAATCATGAC TTCAAGAGTT CTTTTCACCC AAAGGTTTAG GCTTGAAATA CTTTCCTGGG GAGATAAAAC ACAAAATGAA
TTAAAGAAGG AAATCGTGGG TAGCTAGTTA CATTATTCTA CCATGATGTT TAAGGCAGGA TCCTAAGATT TTGGGCAAAAG
CAACATGATGT CAATAATCT TATTTCACAC TTTAATCAAA AATTTAAACA ACTTTCAACATT TTGGGCAAAAG
 TCAGGTGGGT ATCACTGCTG CCTCTGTCTC AGGTCAGTAT AGGAGTTTTG ATGTGAAGTC AGCCAAGAAC AGCTGAACAC
 TACTTCGGCT GAGGCCCTTT TATAGGAGGG ATTGCTTCCT GTGAATAATA GGAGGATATT GTCCACATCC AGTAAAGAGG
 AAATCCCCAA TGGCATCCAA AAACTTTCCC GGGAATATCC ACGATGCTTA AAATTACAAT GATGTCAGAA ACTCTGTCTC
TTGAAGCTAC TTCACCTTTG TCCATGCCTT TATATCGTAT ATGCAATTTT ATTAATATGA CAAAAATGCA TGATTTTTAA
 TTATAATAAC ATAAAGTCTA TGTCTTTAAA AAGTTGTAAA ACTTTGCTTG TTAGTAGTGT CTCTCATGTA GTTGTGGTAG
TAATTAGAAT TTCAGAAACA GAAGGAAACC AAGAATAGGT TTGTCATCCA TAGTCTACTA CCTTCAATTT CTCATTCATA
 GCTGTGGATA ACCAATCACT ACTCATTTT TCTTCCTTTT TCACCTGCCA ATTCAACATA TTTAACATGC ACTGTCTCAC AGAGGAATGA CTCACAAGGT AGATATTAAT CTTCAGATTT TGCACGGCAG TTATGCCTAA ATTAAAATAT TATCTAAAAA
 TAATATCTAA CACTCAAATG GITAAAATAA TGCCITATTI TAAAAAAAGA AAAATGGGAA ATAGATATTI ACATCTGGGA
AAGTTTCATG GITTGTTCAG TGAAAAAAAT AAAAAGGAGG CCAGGCACAG TGGCTCACGC CTGTAATCCC ACCACTTTGG
 GAGGCCGAGG CAGGCGGATC ACCTGAGGCC GGGAGTTCAA GACCAGCCTG ACCAACATGG AGAAACGCCA TCTCTACTAA
 AAATACAAAA TTAGCTGGGC ATGCTGTAA TCCCAGCTAC TCGGGAGGCT GAGGCAGGAG AATCGCTTGA
 ACCCGGGAAG TGGAGGTTGC AGTGAGCCAA GATCACGCCA GTGCACTCCA GCCTGGGAAA CGAGTGAAAC TCTGTCTTAA
 ΑΛΑΛΑΛΑΛΑ ΑΛΑΛΑΛΑΘΑΑ ΑΛΕΛΑΛΑΘΑΑ ΑΛΑΛΑΛΑΤΑΛΑ ΑCGGAAAACT ΑΤΑΤΑΤΑΤΑΤ ΑΤΤΤΑΑΤΤGG ΤCAAAATTTT
 GITTAAAATT TTTGAAATGT TAATGTGCAA AGAATAAAAA TTCTTCCACA ATGTTAACAG TGACTAACTC TGGATGGCAG GATTTGGGAT AATTTTTATA TCCTTCATTA TTATTTTCAG GATTTTAAAG TTTTTTTCAA TTTCCCTTT TTTCACCTTT ATAGTAACAA GAATACAGTT TAAAGAAACT TGTCTCTAGG CCAGGCATGA TGGCTCATGC CTGTAATCCC AGCACTTTGG
 GAGGCTGAGG TGGGTGGATC ACCTGAGGTC AGGAGTTCCA GACCAGCGTG GCCAATATGG TGAAACCCTG TCTCTACTAA
 AAATACAAAA ATTAGCCGGG GTGTAGTGGC GCATGCCTGT AATCCCAGCT ACTGGGGAGC CTGATGCAAG AGAATCGCTT
 GAACCCAGGA GGCAGAGGTT GCAGTGAGCT GAAATCACAC CATTGCACTC CAGCCTGGGC GACAGAGCAA GACTCCATCT
 CAAAAAAAA GAAAAAAAG AAAAGAAAAG AAAAGAAATT TGTTTCCAAA TGCAACAGAA GGAGATGTAT GTGGTATCCT
 ATATTCCTGC TCTTCATTTT GACATTTCTT CTGGGTGATT GTATACATTC CCCATCTCTG CATCITACCC TATCTAAATG ATGGTAACAG TAAATGGGGA TCATTTAAT TTCCATATTC TGTAGGTTTT CAGAGCTCAA GTCAAGCTAA TATTCTATAT
 CTACAGCCTT TCAAAATAGG AGGTCTATCT AAAAATGTAC TGTCAGCAGA CCTGAACGAG TAGTGGTAAA AGCCTCGTTT
 TTCTCTTTAC TTGTTAGCAC TGGTCTTTCT GTGTTCATAA AGATGTCAAG ACCCAAAAAA AAAACAAGAA AAGAGAAGAA
TTCTCTTTAC TTGTTAGCAC TGGTCTTICT GTGTTCATAA AGATGTCAAG ACCCAAAAAA AAAACAAGAA AAGAGAAGAA AAATTCCAAA AAAGACAACT GATTAGAAAA AAATTAACTTA ATTAACGAAT TTAATTCAAC CCCTATCAAA AAGCATAGAA TTTATTCCACT CCACCTTACC ACCCTCTTAC ATGATCCAGA TACTGACATT ATTCCAATTC TTTATCCCAC TTTACTTAGC TCAATGTGGTT TGTTGCTTCA ATAAATTCAG AAGAGTAATC ACTCATATAG TGTTTATTTA GATTTATGGC CAGAATGTCA AGTTGGGTTA ATACATTATC TGTATGTATT TATTTTTAA TAAAGTATGA ATACATAATC TGCTATTTTT AAAAAGCATG GTCAAATGTA TAGAGTAGCC AAATCTTAAAA AAACAATTTA TCTTCGGATAT CAATAAAGTA CCTAAATAATT ATATTGCTAA TAGAAATTAG TCCCCCTTTTT AAAATTAGTT CAAAGATAC CCCTAGATAA CTAACATTTAT TATTGCGAAT TTTTCATAAC TAAGTTTATA GTTTTATCTCT TCCCCTTTTT AAAAATTAGTT CAAAGATAC TAAAAATAGC CCCAGTGGTG ATGAAGTTTC TATTTTACTT ACATATATAT GTCCTGGACC CCCAATTATA ATCCTCAACA TITATTGAGT GCTTACTATG TGCCAGGCCA TATTCTGAGC ATTTTGTATG TCACCTATTT GATTATCAA ACCCAAGAAA AGCACAGAGC TAAGGGTTGA AACCAGGCCA TTGATATCCA GAGCCCACTC CCTTACCTGC TACTCCAAAAC CATGATTTCT TTTGTTGTTTA TGCCCCGAGA TTCCTTGTTC TACCCAAGTT TCCTGTACTC CCTTTACCT TACCCAAACT TCCTGTACTC TACCCCAAGTT TCCTGTACTC
CCTTACCTGC TACTCCAAAC CATGATTICT TITGITGTTA TGCCCCGAGA TTCCTTGTTC TACCCAAGTT TCCTGTACTC TTCTTGCCCT CTTCTTCCTG AGACATCCTT GACCATCACA GCTCTCCACT GAGATAACTG TGTCCTGGGT TCTGAGACAT
 GGGGGCTGGA AGGGACCCCA GGGACAGTGA GCAGTAGGGA GAGGATGCAG TGAGAACAGA CCCTGGATCC CCGGTGCATA
 GGCAGGGAGA AAGTGGACAA AGGAAAAAAC AAGCAAGGCA GGTGGAGCCA TGCCTAGGTA AAGTTGATCC CTAAGCCACA
 GTTCCCAGAA GTTCCTGATT CAAAAGCAAA TTTTCTCTAA GGTCAAAGGG CAAACTGATT ATTCTAAATT CTAAACTGAT
TATITCTAAA TIGAGAAAGC TICAGGGAGA GATCCCAATA TICGAAGGAT AAGAGAAATG AGGAGTGGAA GAGATAGGTG
 CCCTCTTCAA ATAATCCAAA ATATACCCCC AAGAAACAGG CTGATTAGAG GTGCTTCAAG GCTCCACTGA ATCTCCCAAG
CTCTGAAGAT GTAGCTAGCT GTTACCGGAT TGCCGGTTTT CAAGCCTCGC CTCACATGGA CCCTCTTGGC AGTTTCTCGC
 ATGGGGGAAG CATCCGCTAC ATAGATGGGA ATGAAAAGAG GAAAGAAGAC GGTGCAAACT CAGGCACACC CCGGTGTCTG
CCACCAGTGC TATTTAATCT CTGAGGTGTC ACCCTTCCTG GCTTTATTGT CTCTTCCTG AAGTCTCTTG TCCTCTCTC CACACCCCTTT AATCAGGCAT CAAAGACTTT AACCAGTTTT GCTGTGCC CAGGCCCACT CATTCTCACT TTTATGGCAA AGGAGTGGG AGACAGAGAA ATAGCCAGAA AGAAGAGTT GGGGACCCCA AGACAAATGT TAGAATTTTA ACCAAGGCCA
ATACAAACAT GGTATTTCTT GCATTCCCAA AATTGTGAAA GAAAATGTGT ATCACCACAG TAGAGAATGG CATTTTTTGT
```

	TTGATCAAAA CCTAAATATA TTTGATGAAA ATGTGTCTGG TTCTAAGTTT ATTTCCCAGA AAGCCATGTT TACTCACTTG
	GAATTTATAG ACATCTTATA ATATCTGAGT CGAGTAGGAG CTCCGGGCTC TACCTCACTC TTTTCTCCCA CACCCAGGGG
	GAAGTGTAGG GTTCTCAGAC TTTAGAATAA AGAGGAATCA CCTGGACAAC TCACCTAAAA TGCACATCTT CAGGTCTCAT
	ACTCAGAGGC TCTGACTCAA CAGGTCTGGG TGGCGCCCAA GAATTTGGGC TTTAAATGAG TATCTCAGAT GATTCTAATA
5	CAGAATGIGI AAGATGACCA GATCCTATCA CACTTAGATG TATTGGCCTA GGGCCACCTA ACTTGGAGAA AATGTTAGTA
	AGACCCCGTG GTTGGTGCTC AGCTATAGGT ACCAGAATTT TGATCAAAAT TTACTATCAT TGTGACACTT CTCTTCGGAA
	CTGGAAGGCC AGAACCCCAC TTGTAAAGTG CTGGGAAAAT ACAAGGAAAA TTTAGGGTGA GTAGCATTTT GAATTCTTAC
	ACATGGAAAG TAAATGTATA AGAATTCTTA CCAATAAAAA AAAAGCAAGA GAGAATAGCT GCTAAAGAAT TAACACAAAT
	ATGTATATAT TAGTTATTCT CITTTCTCCT CTGATTCCAG AGGACTTTGT AATTCCACTA ATTCTTCTTG AGCTTCCAGG
10	ATGATCTGAG ACTTGAATTT TTCATGTGCT TTTTGCTTCC TATTTGGCAG CATCTTATCT TGAAGTTTCC GCTTTCTGCT
	TGGGGACCTA AAAACTAACT AATGGGAATT TCTTCAAAAT GAGCAAACTC TGGTGAATTC CCAAAGCGGA AGAAACAAGT
	GAGGATCGGG CTGGTTAATT AAGAGAACTT TTCCTGAATG TAGCCAGACT GTTTGCCGAC TGTTGTTAAC ATGAGGGAAG
	AAATACCCCI GGATTITAGA AGAGCCCCTI GITTGTITIC CTTGGCCATT TGTGCTGCTT GTTTTGTAAG TCAGAAATTT
	CCTGAAGGAC TATTATTAGC TTTGTTCTCA CGTCAGAAAA CTTCTGCTCT GGCCACTTTT AAACATATAA CTTGGATTTT
15	ACTGTATTAG AAAATGTAAC AATTACAGAC AGCACTAAAA GGACACCAAA GGGCAAAGAA AATGGGTAAC TITTTTTTCT
	TCCCCAAATC TAAAATAGGT GATTTTGGAG AAGTAGGAGA AAAACCTGGA TTTTCTAGAT CTCTTTAGAG CTCAACAACT
	GATATAGITA ATTATGTAAG TCTTTGATAT TTGGAAATGA TTGGATTAAC CGGATAACAA TGAATATTTA AATACAGTGA
	TTTGGCCAGG AGCAGTGGCT CATGCCTGTA ATCCCAGCAT TTGGGGAGGC TGAGGCGGGT GGATCACCTA AGGCCGGGAG
	TTCCAGACCA GCCTGGCCAA CATGGTGAAA CCCCATCTCT ACTAAAAATA CAAAATTAGC CAGGCGTGGT GGTGCAAGAC
20 .	TGTAATCCCA GCAACTCGGG AGGCTGAGGC AGGAGAATTG CTTGAACCCG GGAGGCAGAG GTTGCAGTGA GCCAAGATCA
_ •	CGCCATTGCA CTCCAGCCTG GGCAACAAGA GCGAAATTCC ATCTCAATAA ATAAATAAAT AAATACAGTG ATTTAACACA
	AGAGATTTCT ATTTCACACT AATGAGCTCT GTCACTGGGG CAAGCTTCTT TGCCTCATTA AGTCTCAGAT TTCCCGAGAG
	CTTATTTATT TATACCAAGA GTGCTTTACT ACCGTCTCTG CTAGCTGTGA CATAATATGA CAAAAGGTAT AAATATGGGA
	AAAGGCACTA ATITATATCA AAGCGTTCTT CGTTTTTCCT TGCTGTGAAG TTTTTAGCTA ATAATTCATA AGAATATACC
25	ATATTTAGAG TGTTTACTAT GCATGGGCCT GGCACTTCAC ATACATTGCT TCTTACAAAAT TTTACAAAGT GAAAGGTAGA
23	
	TATTAATCTC ATTITATGGA GGACAAGATA GAGATCTGGA GAGGTTACAT AACTTGCCAG TGTTTTTTCA GTTAATAAAT
	GGTAGGGTGG AGATTCAATC TGTGTTACTC TAAAGTCCGT GTCCTTTTTA TTGGCTCCAT GCCTACTCAG ATTTAAATCT
	CAGCAGGGAA GTAAACCTTA GTTTTTACAT GAGAAAATGT TACAGCAGCC TTCTCGGCTT CCTTTACCCC CATCCCAGTT
	TCACGAGCTT AGTGCCTTAG ATCGGGTTCC TITAGAAGCA GACCTCGAAA TAAGGATGTG GGTGCCAGTC ATTTATTGAA
20	
30	AAGATGATCC CAAGAAAGCC TAGTAGGAGA GTGAGGAAGT GAGATGGGGA AAGGAAGAAA CTCCACAAGA AGTGTGTTAA
	TAAGCAGGTT ACCGCTGTGG GCAGCCATGG GGCTCAGCTG CACTAACAAA CTCTGTCTAG TACAGAAAAC CTCAGGGTCT
	CCCCAAGGAG GGGCAAGAAG TCTGCCTAGG GTATATATCC GCCAACTCAG TCACTGGCTG AGAGCTGATC CTGGGAGGGC
	ATGGTTAATT CCTCTGCACT TTCAAGTGGA TTCCTGTGGT CAGAAAAAGC CCTCTACAAT GAATTCCAGA TGCTTGTATT
	TAAATCTGAC ATGATCTGAA TGCTGTGTTG GGACAGGGTG GGCGTTATTA GTTTTCTGTC ATTACTGTAA CAGATTACTA
2.5	
35	CAAACCTGAT GGCTGCAAAC AACACATATT TATTATGTCA TAGTTTGTGT GGGTCAGAAG TACAGGTTAG CTCAACTAGT
	TTCTCTGCTC TAGGTTTCAC ATTGCCAATA TCAAGGTGTC ATCCAGTTGG GCTCTTCTTG GGAGGCTTGG GGATGAATCC
-	ACTITICAAGC TCATTCAGAT TGTTGGCAGA ATCCAGTTCC TTGTGGTTGC AGGACCAAGG TCCCTGTTGC CTTGCTGGCT
	GTTGGCCAGG AGTCATTCTT AGCTTCTAGA GACTACCTGT ACTCTCTGAC TCGTGTCTCC ACTTCACCTT TCAAACCAGC
	AGCGGCTAGT CGAGTCCCTC TCTTCAAATG TCTCCAACTG TGCCTTCACC TCATTTCTCC TCTGTGTACC ATGTCTGCCT
40	CTACTGCTTG TAAGGGCTCA TGGGATTACA TTGGATTTAT TCAATCCAGG ATAATCTCCA TATTTTAAGG CTAGCTGACT
	AGTGATCITA ATTCCATCTA CAAAGTCCCT TCCAATAGTA CTGTATTAGT CCATTTTCAT GCTACTGATA AAGACATACC
	CAAGACTGGG CAATTCACAA AAGAAAGAGG TTTAATTAGA TTTACAGTTC CACATGGCTG GGGAAGCCTC ACAATCATGG
	CAGAAGTCAA GGAAGAGCAA GTCATGTCTT ACATAGATGG CAGCAGGCAA AGAGAGAGA CTTGTGCAGG GAACTCCTCT
	TTTTAAAACC ATCAGATCTC ATAATACTTA TTCACTATCA CAAGAACAGC ATGGGAAAGT CTTGCCCCCA TGATTCAATT
45	ACTCCCACCA GGTCCCTCCC ACAACATGCA GGAATTCAAG ATGAGATTTG TGTGGGGACA CAGCCAAACC ATATCAAGTA
	CCTAGATTCA TGTTTGATTA AACAACCAGG GAGCAGAAAT CTTCAGGAGT GGGGGGCATC TTTAGAATTC TGCCCACCAA
	GGCTGGGCGC GGTGGCTCAC ACCTGTAATC CCAGCACTTT GGGAGGCCAA GGTGGGTGGA TCATGAGGTC AAGAGATCGA
	GACCACCCTG GCCATGGTGA AACCCCATTT CTACTAAAAA TACAAAAATT AGCCAGGTAT GGTGGTGGGC ACCTGTAGTC
	CCAGCTACTC AGGAGGCTGA GGTAGGAGAA TCACTTGAAC CCAGGAAGCG GAGGTTGCAG TGAGCCAAGA TTGCGCCGCT
50	GCACTCCAGC CTGGGAGACA GAGCAAGACT GTCTCAAAAA AAAAGAATTC TGCCCATCAT AGTAGGCTGT CCTACAGAGA
	CATAACCCAG GAATTAGGTG AATGGTAAC CTAAATTAGC ACTGTGATGT GTTTTCTGAC TTGGTCCTTA TAGCTCCTCT
	GCTTAGATGT GGAACTAATC CATGAATGCA AGGGTTTGTC TAGAGGTTTTA AGTGGGAGTT AAATATCCAA AGTACAGGAG
	ATATTATGGG TGCCTCATCC ATGTCCCCTT GGCATTTATC TTTCTTGGAT AACCCAACTC TATTAGTTTT TATATCTCAC
	TTGTTCCTAT ACTCTGTGAA CTGATGTCCC ATAAATAGAC ATTTCATTTT GCCAGTCTTC TTGAACAATA ATTACGATTA
55	TTAATCTAGC AGTTATCATT AATTGGCCAC TTCACATTAG ACACAGCACT TAGGACTTAA GAATACCATG TCATITGATC
	ATCATAATAT GGTCAGGAAT TAAGTATTGC TATCCAAATT TTACAAAGAA GGCACTGAGG GTTAGAGTTT AAATAACTTG
	CTTAAGATGT CATAGCCTGT AAGTGACAAA ACTAGGACTC AAATACAGGT CCATCTGACT CCAAAGTCTA TGTTCTTGGC
	TACCACACTG CCTCTCCTAC AAGTGACCTG TGGTTTTACT ACTATATTCA CACTCTACTA ACTTTACCAT CTCCCATGAG
	TCTGTCTAGA GGAGGGCACA CACAGCACAG AAAACACATG AATGCAAAAT AAGGAAGGGC CTACTTACTA CACAGAGCCA
60	TTCTAATACC TGATGTTTGC TCTAATCCAG TTTTACTATT AATTAGTTGC TGGTGCCCAA GTTTTTACTG AGAAATGGGG
00	
	ATAATTITIGG AAGTCATAAT GATGCCTTCT TCTCATAGGG TATTITATTT GTTGTTGTAT CTCCAGGCCC CAACACAGCC
	TGGCTTTTAG TAAATGATCA AAAATACCTG TTGAATGAAT AAATGGAGTC ACCTGAAACA TGTTAAACAT TTGTTCATGT
	GTCCTAATCG TGGATTTCAG GATAGTAAGC ATCCTAAAAG GAAAGCATGC ACACTGTTCT TGCTACATTA ATTTCTCACA
	ATATAAAAAA AGAAAAGCAT CTGAAAAAAG CTGCCAGCCG CTGTGTCTCC TAATATCAAA CTGAGCACAG ATATGGAGAA
65	
65	GCTAAGGGAG AGGGATGATG GGCCATGCCT CTAACCTCAT CATGGCAAAA GTCCTGGGGG TCAGACCCGA GGAGAGCAGG
	AAGTGTCTTT TGAGGGATAC ATTTCCACAG TGGAAATAAT GAGACTTAAA TAAATATTAT ATACACAGTT CAACTGTTTT
	TATGTGTAAA GGTAGTAGGT TTTCACAGTA AGGAAGCACT TCTTTTTTT TTTGTTTGAG ACAGAGTCTC GCTCTGTCTC
	CCAGCCTGGA GTACAGTGGT GCTATCTCGG CTCACTGCAA TCTCTGCCTC CTGGATTCAA GTGATTCTCC TGCCTCAGCC
	TCCCGAGTAG CTGGGACAAC AGGTGTGTGC CATTACACCT GGCTAATTTT TGTATTTTTA GCAGAGATGC GGTTTCACCA
70	TGTTGGCCAG GCTGATCTCG AACTCCTGAC CTCAGGTGTT CTGCCCGCCT CTGCCTCCCA ATGTGCTGGG ATTACAGGCA
	TGAGCCACTG CACTCACCAA GCACTTCTAC TGATAGCATT TACAAACCCT TCTTAGAATA TTTAAAAATT CTAAGAGAAG
	AGTAAATTGA GCCTTCCCAA CTAATACTAG GAGGTTATAA CCTTCATACC AAAACTGGAC AATGCTTGCA CAAAAGAAGG
	AAGCCAATGA GGCCACCTAG AAGGAAGACT GGGCATTGGG CCCAGTGAGT CCTGGAAACC TCATCTGTGC CAGCCACCCC
	GGCATGGCCT GTATGAGTGG ATGAGGGTGA CTTGTCCACA GACAATAGCC ATCTAGCTGT GATAAAGGAG TCAAGGTAGT
75	CAGCTGCATC TCTTTCACCT GTTTGCCAAT GTTACACAGG TTGAAAAGCT AAGGTTTATG TAAAGCAAGC ATCAAAGATG

	ATGAAATGAT CAACCTGACA ATGAGTACTA TGCTGCATTG TCCAGAAAGG AACTGTGGAA GATTTTGGGC TGAATTTCA	A.
	AACAGAATTT CCTCACTCTC TGGATGTTGG CTTACTTGGC CTTTGATGTT CAGAGGTGGT GCCTTTGTGT TGTTGAACA.	Α
	TGTTGATTTT GGAGAGAAAA CAGAGTTGAA AAACCCACAA GTCATTCCCT GGGGAGTATT ACCGGAATAC AGAGGATAA	
	TTCAGCAAGC CAGCAAGGCC TCATCTCTGC TTCTAATAGA TAGGAAGAAA GGAAGAGAGG AACAATACTT TTTTAAGAA	G
5	CTCAGCTTTA TCGCCTTATC TCATAGAAAG ATGCCTCCAG TCTGTCTGGC TAAAGGTAAT TGGCATGGGA AAGTCTTTA	
,		
	CTGTGATTCT AACAAGTGGA ATGTTTCCCT TCATTAAGAG AGCCTTGTCT GGCTTGGGGA AATGAAACAC TTTCTCCGA	
	ATGAGTGGGC TGTAACCCCT GCTACTAAAT ACTCAGAAGA AATAAGGCGG TTGTGGAGCA GTCAGGAATG AGTCACTTG	C
	CTCCCTGGAA TATTCAGAAA ACTGAATCAA AAGTACATTC TTCTGGGTTT TCTTAGTCTA ATAGACTAAG GGTCTCTAC	
	TTGTTAAATT TCTGGGAAAC AGCATAGAAT GGGAGAAAAA ACTGGTCACT GTAGTCATGC AAATCTGCAA AACAAACAA.	
10	AAAGTCTGGG TATTGCTGCT AACTAGCTAT GTGACCTTAA GCAAGGTATT AACTCTCTCT GAATTTCAGG TTCTTCATC	т
	GTTAAATAGC ATATCTGTAA AATGGGAATT ATTTTCATAT CATAATGCTG TAGCTTTAAA AAATAAAATA	
	GATAATCAGA ATTAAAGAGC CTGGGATATA TAGTTAATAT ATAGCAGCAT GTAAAGATCC TGTTAGAAAT GCTAATTTT.	A
	CAGTTAACCA TITGGAGATG ATCCGCCAAA GCTGCTAGTG TAGAGGCAAC TGAGAATTTG CCTGTCCTTC AGAATATGA	Α
	TAAATAACTG TCAATGATGT CTCAAGCCTA GAAAAACCTA TCCATCTGGA TGGGTGGGAA ATTTCTAGGC TAGTATTGA	
15	AAGCCCATTT CTTGGGAAAT AGGTCCTGGA CTGAGTGAAG GAAAAGAAAC AGTAAAAACCC ATGGTAAAGC AGCAAGGCT	С
	TCTAGAGGCT CTGGAGAGGA TGAATTGAAT TCTAGAAGAT GAAGTAGGGA AGACGCTTTA CCTTCTTGTG AAATGGATT	C
	AAAGATTCAA AGACCTTCGG GAATCTCCAA TTGTATAAAT GGCACCATAG CTGTATGTTC CATGGAACAC TACTTCCCA	
	AGATGCCCAG TGAAAAAAGA ATGCCACAGT CAAATAAGTT TGGAAACACT CCATTATGTG GCCACCTCCT TGAAGACTC	T
	AATGCACATT AGCATGTTAA ACAGTCTTGA GAAGTCCTGC AGAGCAGAAA TTGCTTCACA TCTGCTAAGC CGGCAGTTT	C
20	CCAATATACT TGATTATGGA TAGTTTTTTC CITACAACAC CATTCTCTGA TATGCTTCCA ATGACATGAA ATAAATATA	
20		
	ATGCATGAGG TTCTTCATTA GGGCATACTT TTTAATAGAA AATATTGAGA ATAATCTAAA TATAAATGCA CAGCATTTA	
	CTTTTCTGCA TAAACTATAT ACAGGCATAC CTTGGAGATA CTATGGGTTT GGTTCCCACA ATATCTCCAA AACCACATT	С
	GGTTTTATGA CCACTGCCAT AAAACCAGCC ACATGAATTT TTTGGTTTCC CAATGTATAT CAAAGTTACA TTTTTACTA	
	ACCATAGTCT ATTATATATA CAATAGCATT ATATCTAAAA AACAACGTAA ACACCTTAAT TTAAGGCTGT GGCTGGTTT	
25	ATTITICTACC CAGACCACTA AAACTITCTI CATATCAGCA ATAAGGCTGT TTCACTITTCT TACTATITIT TGTGATAGC.	A
	CTTTCCTTT CCTTCAAGAA TTTTTCCTTT CTATTCACAA TTTGTTTGAT ACAAGAGGAC TAGATTTTAG CTTATCTCA	
	TTTAAGGTGT TTACATTGTT AGCTAAAAAT GCTAATGATC ATCTGAGACT TCAGCAAGTC ATAATCTTTT GCTGGTGGA	
	GGTCTTGCCT CAGTGTTGAT GTCTGCTGAC TGGGTGGCTT TGGCAATTTC TTAAAGTAAG ACAACAATCA AGTTTGACA	T
	ATCAATTGAC CCTTCCTGTC ATAAATGATT TTTTTTTTCT CTGTAGCCTG CAATGCTCTT TGATAGCATT TTACCCACA	r.
20		
30	TAGAATTTIC AAAATTGGAG TCAATCCTTT CAAACTCTGG TGCTGTTTTA TCAACTAAGT TTATGGAGTA TTAGAAATC	
	CTTGTTGTCA TTTCAACAAT GTTCACACCA TCTTCCCCAG GAGTATATTC TACCTCAAGA AACCACTTTC TTTGCTCAT	С
	TATAAGAAGC AGCTCCTCAT CCACTAAAGT TTTATCCTGA GATTGCAACA ATTCAGTTAC ATCTTCAGGC TCTACTTCT.	A
	ATTCTAGTTC TCTTGCTGTT TCTATCTCAT TTGTGCTTAC TTTCTCCGCT GAAGTCTTGA ACCCCTTAAA GTCACTCAT	
	AGGGTTGGAA TCAACTTCTT ACAAACTCCT GTTGATGTTG ATATTTTGAC CTGCTCCCAT GATTCATGGG TATTCTTAA	
35	GGCATCTAGA ATGGTGAACG TITTCAGAAG GTTTTCAGTT GGCTTTGCCC GGATCCATCA GACGAATCCC TATCTATGG.	A
	AGCTATAGAT TTATAAAATG TATTTCTTTT TTTGTGGGGG CATAGCGTCT CACCCTGTCA CCCAACCTGG AATGCAGTG	G
	CACAGTCATA ACTCACTGAA GACTCAAACT CCTGGGCTCA AGTGATTCTT CCACCTTGGC CTCCCAAAAC ACTGGATTA	
	AAGCTTGAGC CACTGTGTCT AGCCCAAAAT GTATATCATA ACTAATGAGG CTTGAAAGTC AAAGTGACTC CTTGATCCA	T
	GGGCTACAGA ATGGACGCTG GGTTACCAGA CATGAAAACA ATACTCATCT CCTCATACAT CTCCTTCAGA GCTCCTGGG	Т
40	GAGCAGGCCC ATTGTCAAAT GAGCAGTAGT ATCTTGAAAG AAATTTTTTT TCTGAGCAGT AGATCTCCAC AGTGGACTT.	
70		
	AAATAGTCAG TAAACTATGC TGTAAACAGA AGTGCTGTCA TCCAAGCTCT GTTTTTCCAC TGATAGGGCA AAAGCAGAG	
	AGATTTGGCA TAATTCTCTA GGGCCTTAGG ATTTTTGGAA TGGCAAATTG AGCATTGGCT TCAACTTTTT TTTTTTTT	T
	TTTTTTTGAG ACAGAGTCTT GGTCTGTCAC CCAGGCTGGA GTGCAGTGGT GCAATCTCGG CCCACTGCAA GCTCTGCCT	C
	CTAGGTTCAC ACCATTCTCC TGCCTCTGCC TCCTGAGTAG CTGGGACTAC AGGCACCCGC CACCATGCCC GGCTAATTT	
45	TTGTATTTTA GTACAGACGG GGTTTCGCCA TGTTAGCCAG GATGGTCTCG ATCTCCTGAC CTCGTGATCC ACCCGCCTC	G
	GCCTCCCAAA GTGCTGGGAT TACAGGCGTG AGCCACAGCG CCCAGCCTGT CTTCAACTTA AAGTCGCCAG CTGTGTTAG	С
	CTCTAATAAG AGAGTCTGCC TGTCCTTTCA AGCTTTGAAG CCAGGCATCA TTCTCTTCTC	
	AGCATCITCT CCCAATAGGA AGCCATTITT TATGCCCTAA AAATCTGTCG TITTGGTGTAG CCACCTTCAT CATTGATCT	
	ACCTAGATCC GCTGGATAAC TTACCACAGT GTCTACATCA TTACTTCTGC TTCACCTTGC ACTTTTATGT TATGGGGAT	G
50	GCTCCTTTCC TCTAACCTCA TAAACTAACC TCCACTAGCC TCACATTCTT CTTTTACAGC TTCCTCGCCT CTCTCAGAG	Т
	TCACAGAATT GAAGAATGIT GGGCCTTGGA TTACACTTTG GTTTAAGGGA ATGCTGTGGC TGGTTTGATT TTCTATCCA	
	AACACTAAAA CITTCTTCAT ATCAGCAATA AGACTGTTTC ACITTCTTAC TATTTTTTGT GATAGCACTT TTCCTTTCC	
	TCAAGAATTT TTCCTTTCTA TTCACAATTT GACCGTTTGA TATGAGAGGC CTAGATTTTA GCCAATCTCA GTTTACACC	A
	TGCCTTTTTC ACTAAGCTTC ATCATTTTAG CITTTTATTI AAAGTAAGAT GTGTGACCCT TCCTTTCATT TGAACACTT.	À
55	CATGATGATG CCTGGCTTCA AAGCTTGAAA GGACAGGCAG ACTCTCTTAT TAGGGGCTAA CACAGCTGGC GACTTTTAA	
"		
	TTGAAGCCAA TGCTCAATTT GCCATTAGAA GCCATTGTAG GGTTAATTAA TTTGCCTAAT TTTAATATTA TGGTGTCTC	
	OGGAATAAGG AGGCCTGAGT AGAGGGAGGG AGATGGGGAA ACAGCCAGTC ATCAGAGCAC ACACAACATT TATCAATTA	Α
	GTTTATCACC TTGAGGGCAC AGGTCATGAT ACTTCAAAAC AATTACAATA ATAAAATAAA	
	CCATAACAGA TATAATGATA ATGAAAAATT TGAAGTATTG TGAGAATTAC CAAAACGTGA CACACAGACA CAAAGTGAG	
60	ACATGTCATT GGAAAAGTGG TGCTGATAGA CTTACTTCAT GCAGGGTTGC CACAAATACT CAATCTGTAA AAAATTCAA	T
	TATCTACATA GTACCATAAA AACAAGGTAT ACCTGTTTAT ATAATCAAGA CCAACAGAAC CCTAGAGAAA ATAGCTCAC	Т
	CCCTAGCTCG GAGACATTCT AACCAACATA CACTTACCTT TCTTTTTGCT GTGTACAGAA TTCAAATCCC TGTCTCAGC	
	AAATTGCAAA GTATCAAATG TCATGTCCAT CTAATACTCA AAACTGCAAA TGTTAAGTCT TGTAAGCCCA GAGACCACT	G
	TATATACAAG TGTTGCTATA AGCATTAGTT CTTCTCCAAA GAAAATAGTC CACTTGGTAG AAACAAACAA AAAGAAAAA.	Α
65	AAAGAAAGAA AAAACATTIT TTACAAGAAG ATTCAGTCTC TTACCTACAT AAGCAAAAAT ATGAGATGTT CTCTTATCA	
75		
	TTTTCCATCT ATCTTATAAT CTTTGGTGCT GACTTAGACA CTCATTTTCC TTTTTGTACG TGACCATGTA AAAGTTCAA	
	TCAAGAAAAA CTTGTTTTGA CATTTGTTTT GCTGAGTGAT GGGTCCCTAA AAGAAAATTTG GCTTTGCTTT	С
	AGCATGATAT IGTGTGAATT TTTCATGGCT AATGATTTTT AGAACAGTTG TGATGTGTTT AGGTGTTTTA AGAATATGA	
	GCATTCAGTG GTTTAAGTTG GTTGTTATAA AATGAAAGAA TATGAAGGAA AGCCTTCTTG TCTTAGAACA CACTGATTC	
70		
70	CAAATAAGCA GCTTCTCTCA AAATGITGTA ATTACAAAAA TTCCAAGGCA AATATAATAA ACTCCTTGTC GGTGCTATG	
	CTAGAAACTT AACAGCCCCA AAGAAAGTCC TGACAAGGCA AAAAATATAT ATATATATAC AAATTGTGGA AGCAGGGTG	Т
	TGAAAGAAGA ATAAAGACTA TATAAGGACA AACTGTTTAA AAGGGAGGGT ATCCTTGAAA GCTTGACACT TGACTCTTT	
	GACGAGGCTG AGGGAAAACA CTCAGTTTCA TAGATTGCTG GTACGGATGT AAAATAGTGA CATCCCTATA GAGAGGAAT	
	TGGCAATATC TAGCAAAAGT GCTTATGCAT TTATTCTTTG ACCTAGTAAT CCCGCTTCTA GGATTAGTGG TGAAGATAC	A
75	CCTCAACAAT AAAAATATAT ATACATTAGG TTATTAGTTA TGGTTTAATT TTTAATAGCA AAATATTTAA AACAACCTA	C
		_

	ATGAACAAAT AGGAGACTTA CTGAATAAAC TATGGTATAT CTGTACAATA AAGTGCAATT CACTTATGTT GTTAATTTGT
	TCCAAAAATC CAGAGCCAAA GAGTATTTGT TATGCTCTCT TTAGTATAAG AAAGGGGAAA TAAGATATGT GTGCATCTGT
	TTATTTTTGT GAAAATAAGT ACAGAAAGGA TAAGTAAGAA ACTAGTAAAA CTAGTTATCT CCTAGTGTTA GTAGAAATAG
	AATGAAAGTG AATTAGGCTT CTTTGAGTAT ATGTTTATAT ATAGTTTTGA CTTTTGAATT ATGTTTATGT TTACATAGTC
5	AAAAATATAA ATTAATCAAC AGAAATAACA AAAAAAGAAG AAATCACAAG CTITAAAATT TAATACAAAC AGAAATAATT
	GAATCTAACA GTATATCAAA GTGATAACGT AAACTCAGAA GAAAAAAACA TAATCCAACA TACCAGTGGA ACACAATATT
	CTAACTGTAT ACATTCAGTG GTTATAGTCT AAGGACAAGA AAAATTGCAA AAATATCTTG AACTTTAGCT TGTAGGATTT
	TTATTGGTAG CAATACTAAT GTACTAATTC TGAAATTAAT GTTCGTGTAT TATAGAATTG AGTAAATGAA TAAATATGTT
10	GATGTTATTG GGAACTAAAA TTATCATTCT GGGAGTAGAG AAATATAAAT ATGGACTTGG CAAATGAAAC AAAGACCTGC AGAGAGATAA CCATATAAAC TCATTATTTT AAAAATTATA AGTGTCCTAG CTCTGTTACT GAAAAGGCCT AGATTCAATC
10	TTATCTTGAT AGACAGGAGG GCACCCCTTT CTCAGAACAT GGTTTCCAAA TGCCATTCTC CATTAAAAGG AACAAGGTCT
	TCTTGGAGAA AAGACTGATT CTAGGTCTGG ATTAGGTAAA GTACAACGTT AGTCTGGAAT TTCTTGCTGA ATCAGAAGTA
	AGAAAGTGCT CAAAAACATG GGAACATGTC ACAAACACAC GTGAGGCAAC TTGAATCCTC ACTGGCCATA TTTAGGACAA
	TCGAGCATCA AAAAAAAAA AAATGTTGAG AATAATGGAT TCTAACACTT AAAACAAAAA ATAATCCATA GCCCACAGAA
15	GGGGAAGAG GGGGAGCTC TTATTTACAG ATGAATATCA AATAGCAAAG ACAGAAGAAA TGACAGAATT AGAGAAACAT
	CATTITGCAA AACACCACTG TAATAATCAA TICAGGCAAG TATTATTAAT GGATGTATTA CTATTGCGTA AAACCAGTTG
	GGGAACAGGA TATTCATACA GTCTGAAGGT GTCACCCTAA ACATAACTTA TTACAAGTGG AAAATGGTGC CTTTACAATG
	AAGAAATCTA GCAGAAACCA TCTTAATCTA GTGATCAAAC TTAGTATCAC CAATAATGGA TCATACTGAG TCATGTGTCT CCTAATATGA TGCACCAGGA AGGATGCAAC GTCATGAACG TTGTATTCTT TTGTATTCAA CAGACCACCC AGGGTAAAGG
20	CAGCTTTCTC ACTIACTAAT CAGAATTGTT GGTTTTAATT CATTTTGGAT TITAAGATTT CTTACTTTCT TGTCAGCTCA
20	GAAATTTATT TAAGATGATT TTTATCTTTT ATTCAATACT TTAGCTTGGA GAACCATTCA GAGTTTCTAA CTCATTGTAT
	TGCCAAAAAT AGAAAACAGC ATGGTTTCTT TTGAAAATGT CTAACTTTAA AGTTACTTGT GTGTGTCACT CAGATTCACA
	TAGCTITTTT GCCTAGTAAT GTAGTATCAT GTGGCAAGGC TATAAAAATG TTTACAATCT TTTATTTAAT ATGACTCTTG
	AGAGTTTATT CTAAGGAAAT AATTGAATAG TAACAAAACA CTATTAACAC AAAGCATAGC AATTTGATTT GGGCAACCAA
25	ACACTGGAAA CAACCTAAAT GTCCATTACA GGAATCATTT ATGAAGCAAA CACTAAAATA TTTATTGTGA AGATTATGAG
	AACATAGAAG ACAGTTATGA GAGTAAATTT GAAAACCTGA ACACAAAACT TACATATACT CCAATTGTAA CTTATAAAAA
	ATACGTGCAT ATAAGGATAA AACAGTACAA ACAAAAAAAT AGTTGCGTTA GATTGGTAGA ATTATGGCTC CTTTTGCTGT
	CITAATITTI TCCTTTACA TTITGATACA TTATTTTAAT TTTAATITTA AAATTCAAAA GAATTTGCCA CTCATCITTG
30	CCACTTCAAG GAAAAAAGAA ATGTGTTCGA TTATTCTGTT CTTAGTATAG TTTTGGCAAT TTCCTCACGT GTAAAAAGAG AATACTATTA ATAATTTCAG TATCTATAAG ACAATATAAA ATTAAAGAAT CTAGCCCAGT AACTGGTACA TGGAACGTAA
30	TIAATAAATC ATTATGGACT TITTTTCTCA CACCCAAGTA GGGAGGAATC AGTGGTCCCC TAGAGGCCCA GTGTAGAGGT
	GGCAGCACCA ATCCCTAGGG GAGAAGATCT TGGTGATGAT AATTCCTGAG CAGACAGTTA GCTGAGAATT CAAGAGCAGA
	AAAGTAAGAA AGAAACAACT TCTTGCTAAC ACCTTTCCAC CCACGTTTCC CTGTTCTGTT
	TGGATGGAGG CAGAGGAAAG AGAACCAAGT TTGCTCTTAG TCATTCACTA TGTTGTTTAA TCTGCCTTCC ATCTTTCTTA
35	TCAGTTCAAA TTAGAATGTA GACCTGAATT TAAATCCCCG TTCTGTCAGT TATAATGTGA CCCTAGACAA AACAATTCT
	CTGAACCTCA GAGAACATTC TTCATTTGTA GAATGGGAAG ATTAATCTAT ATTCCACTTG GATGGCAAGT CTTTTATAAA
	CTTTATAACC TAAACATGTG TGAGTTGCTA GTATCATTAT GTTGGTAAAG TTATTCTGAG ATATGATAAC AGAACTGTTT TGTCTAACTC CACTAGCATG GTTCAGGTTT AGAGAGTGTG GAATTAAAAG GCTTTATCCT CAAATATGAC TTAAATCCGA
	TTTTCCCAT CCACTTCCT CCACAAACAA ATCCTCAGGA AATGACAAAC TTTACATGGT TAAACATCAG TTTTGTTTAG
40	TCTTTGACAT CCACATGGTT AAATCATACA TTTGAAAACT GCTTATATTT GTGTTGTCTA TGTCTAAATT GAAAAGACTT
	ATTGAGGAAT AGAAGACTAC ACATTTTCA GCAAACACTG CACGTTTTGC AGAATTTCCC CAGGCACCAG TCTCCAGGAA
	TTTATTGGCT ACTAACAATA CTAAGATATG GATGAATGAG GAAATCAAAA TGGAGATCTT GCAAGTTTTG TGAGAATGGG
	TGAATGGTCC AAATGAAGAG ATAAGTTGTG AAATATTAGT ACAAGTAAAA ATTATTTACA ATGAAAGACA TTITGTCAAT
45	AGCTATGAGA ATTTTACCAT TGACCCAGAA ATTCCATTTC TTTCTTCAGA AATACCCACG TAGGTATACA TATAAAAAAGT TATTCATTAC AGTATCGTTT TTCATAGGAA AAAGTTTTAA AAATCAGAAG CTATCTAAAC TATGGTATAT CTAGGTCATA
43	GAAATCAAAT GACTAAAAAT GITAATATAA GCATATGTTT TTAAATTAAC TIGGCTTGGG TCTTCAGCAA AATTGGCTTC
	TTAACATTGC ACTCCAGAGT TAGACTTACC CACTCAGTCA CTTATCATGC AGGAGCAGAC TCCTAATACC ACATATCATA
	GAGCAGAGTA GGACACAGGT TCTCTGCAGG CAGGCAAATC CCAAAGAGAA GGGAGGAAAG GGCTGAGACA CTGCATGGTC
	AATTTCTTCT GAACTCTGCA ATGTACGGAG GTGGACAGTG TCCACAAAGA TTGCTCCCCT GGACCCACCA TCATAATAAC
50	ACAACGGCTT TGTTTTGTT TTGTTTTGT TTTTTGACAC GGAGTTTTGC TCTTGTTGTC CAGGCTGGAG TGCAATGGTG
	TGATCTCGAC TCACCACAAC CTCCACTTCC TGGGTTCAAG TGATTCTCCT GCCTCAGCCT CCTGAGTGGA TGGGATTACA
	GGCATGCACC ACCATGCCCA GCTAATTTIG TATTTITAGI AGAGACGAGG TITCTCCACG TIGGCCAGGC TGGTCTCAAA CTCTTAACCT CAGGTGATCC ACCCGTCTTG GCCTCCCAAA GTGCTGCGAT TACAGGTGTG AGCCACCGCG CCCAGCCCAC
	AATGGCCTTT TGTTTACATC TCTAGTGCAG CACTCATTTC ATGTTCTTTC AAGAAGAATA CATATTTCAT CTTTTTATTT
55	TATACAGCAA TTAGCACAGT GCCTGGCATA AGGAAAATGA TCATTAAAAG CTGGGTGAAA AACCTAATAA AGCTACTGAG
	GATAGGAACT GCAGACCAGC ATGGAAAGAA AACTATGAGC CAGATATTGA CATCATCCTG AAAGGCAGAA GATTTAGTAT
	AGGCAAGAAG TATGCTTTTG GAATATAGAA AATCTGGATT ATGATAAGAA AAGAATCATA TTTGTCTTAT CTTACCTACT
	CACTTCTCAG TTCCACATGT TTCTGAGGCT GTTTGTCCTT ACTTTCTTT CTGTTTTATC CACTCTTTCT GTTCTTTAGA
60	TTGGATCATT CCTATTGAGC TGACATCAAG TTAACTGACC TTTTATTTTG TCCAAACTGC TGTTAAATGC ATCCAGTGAA
60	TTTTTAACTT TATATAGTAT ATCTTTTAGT CCTAGAATTT CCACATGAGT TTTTTAAGTT TCCATTTCTC TGCTGAGATC TCCTATTTGT TCATTCATTA TGACCATATT TTTCTCTACA TTATTGAGCA TAATTATAAC AGCTCTTCTA AAATTCTTGT
	CTGCACATTC TAACACCTGA ATTATTCTGG GGTCAGTCTC TGTTACATTG CCTTATTACA AAAACAGTAT AAGTCACATT
	GCCTTGTTTC TTAATATGCA AAATGATTTT TGATTGCAGA CTAGACATTT TGAATTAAAC ATTATAGAGA TTCTGGATTC
	TCGAGAGAGT ATTGACTTGT TTTTTCCATC AGGCAGGTAA CTTGACTGGA CTCAAACTCC AAACTCTAGG TCCTCTGTAA
65	TGGGCAACTG CAGTAATCTT TGTTTAGTTC TTTAAGACTT ATTGGCCAGG CACGGGGGCT CATGCCTGCA ATCCCAGCAC
	TGTGGGAGGC CAAGGTGGGA GGATCACCTG AGGTCAGGAG TTCGAGACCA GCCTGGCCCA CATGGTGAAA CCCTGCCTCT
	ACTAAAAATA CAAAAATTAG CCGGGTGTGG TGGTGGGCGC CTGTAGTCCC AGCTACTCAG AAGGCTAAGG CAGAAGAATC
	ACTTGAACCT GGAAGGCAGA GGTTGCAGTG AGCCGAGATT GTGCCACTAT ACTCCAGCCT GGGTGACAAA AGCGAGACTC CCTCTCAAAA AAAAATTTAT TGGCACTGCT TGGCATCTGC TATGAATACA TGAAGTTCAT GGGTCAGCTA TAGATCTGGG
70	CACGTTATAC ACAGAATTIG GGTCTCCCTT TCTCTGGATT TCTCCTTTTC TGGATTCTT TTCTCATTTT CCAGCAGCTG
, 5	TIGOTTIGCCCT AAACTCGGTC CTCTGTTTCT FTACGGCAGT AAGATTTGGG AACTTTTAGG TTTTACCTGC CTCTCAGACA
	AAATAAAAA TAATTTCAT CTTGATGCTA CTCCTTTCTT CCAGATGTAG ACACCTCTCT AATTTCCAGT TGCTTTTTAT
	TGCTCTCCAG AGTCTAAAGA TTATCATTGT TTTCTGTGGG AGAGTTGGTC TGATAAAAAC TACTCCCCCA AAACTGGAAG
75	CTGGAAGCTT GTAATTATGA ATAGACTTTG AGTAGTATTC TTCTTTGGAA AAGGATTTTA ACTACTCCT ATGTACTTCT
75	TTATTTCCTG TTTTTCTCAT CCGTAATCTT TTTATTTTCA TACTTCCTAA GTCAGACAAT TTTCCTACTT GAAGATTCAG

	TGACTGCTAT CAAATGACCC CCATATTACT AAATACAATA TCCCCAACTG CATTTATAAA AAGAAAATTT ACTGTTTATT
	AGTAAACAAT GTTGTAGAAT AGTAAAATAT TGCTGGGCTT TGGAGCCAGA TAATCAAGGT TAGAATCCCA GATTCTAACT
	TACTAGCTGG TGTATTAGTC CTTTCTCATG CTGCTAATAA AGACATACCC CAGACTGGGA GACTGGGTAA TTTATGAAGA
	AAAGAGGTTT AATTGACTCA CAGTTCAGCA TGGCTGGGGA GGCCTTAGGA AACITACAGT CATGGTGGCA GCAAGGAGAA
5	GTTCCAAGCA AAGAGGGAAA AGCCCCTTAT AAAACCATCT GATCTTATGA GAACTCACTC ACTATCACGA GAACAGCATG
	AGGGTAACTG CCCTCACGTT TAATTACCTT CCACCAGTTC CCCCCCATGA CACATGGGGA TTATGAAAGC TATAATTCAA
	GATGAGATTT GGGTGGAGAA ATAGCCAAAC CATATAATTC CACCCCTGGC CCCTCTCAAA TCTCATGTCC TCACATTTCA
	AAACTCAATC ATGCCCTCCC AACTGTCCCC CAAGGTCTTA ACTCATTCCA GCATTAAGTC AAAAATCCAA GTTCAAAGTC
10	TCATCTGAGA CAAGGCAAGT CCCTTCTGCC TATGAGCCTA TAAAATCAAA AGCATGTTAG TTACTTCCTA GATACAGTGG GGGTACAGGC GTTGGGTAAA TACACTGATT CCAAATGGGA GAAATTGCCA AAACAAAAGA GTTACAGACC CCATGCAAGT
10	CCAAAACCCA ATAGGGCAGT CATTAACATT AAAGTTCCAA AATGATCTCC TTTGACTTCA TGTCTCACAT CCAGGTCACA
	CTGATGCAAG AGGTGGGCTT CCAATGGCCT TGGGCAGCTC TGCCCCTGTG GCTTTGCAGG GTATAGCCTG CTTCCTGTTT
	GCTTTTTCAC AGGCTGACAT TGAGTGTCTG TGGCTTTTCC ATGAGTATGG TGCAAGCTGT TGGTGGATTT ACCATTCTGG
	GGTCTGGGCC AGGTGCAGTG GCTCATGCCT GTAATCCCAG CACTTTGGGA GGCTGAGGTG GGGGATCACA AGGTCAGGAG
15	ATCGAGACCA TCCTGGCTAA CACGGTAAAA CCCAGTCTCT GCTTAAAAAA TACAAAAAAT TAGCCAGGCG TGGTGGTGGG
	TGCCTGTAGT CCCAGATACT TGGGAGGCTG AGGCAGGAGA ATGGCGTGAA CCCAGGAGGT GGAGCTTGCA GCGAGCTGAG
	ATTGTGCCAC TGCACTCCAG CCTGGGCGAC AGAGCAAGAC TCCATCAAAA AAAAAAACAA AAAAACCATT CTGGGGTCTG
	GAGAATGGTA GCCCTTACAG CACCACCAGG CAGTGCCCCA GTGGGGACTC TGTGTGGGGG CTCTGACCCC ACATTTCCCT
20	TCTGCACGGC CCTAGTAGAG GTTCTCCATG AGGGTTCTAC CCCTGCAGGA AACTTCTGCC TGGACATCCA GGCATTTCCA
20	TACATCCTCG GAAATCTAAG CCGCGGAGGT TCCCAAACTT CAATTCTTGA CTCCTGTGCA CCCACAGGCT CAATACCACA TGTAAGCCAC CAATGCTTGG TCAGGGCTTG AACCCTCTGA AGCAATGGCC TGAGCTGTAC GTTGACACCT TTTAGCCTAG
	ACATCTAGGA CACAGGGCAC CATGACCCGA AGCTTCATAA AGTGGGAGGG CCTTGGGACT AGCTGAGGAA ACCATTTTTC
	CATCITAGGC CTCCAGGCCT GTGATGGGAA GGGCAGCCAT GAAGGTGCCT GACATGCCT GGAGACGTTT TCCCCATTGT
	CTTGGTAACT AACATTCAGC TCCGTGTGCA GCACCAACTT ACTTATGCAA ATTTCTGTCA CTGGTTTGAA TTTCTCCCCA
25	GAAAACAGGA TITTICITIT CTATTGCATC ATCATGCTGC AAATTITCAA ACTITTATGC TATGCTTCCT GTTGAAGACT
	TTGCGGCTTA GAAATTTCTT CCCCCAGATA CCCAAAATTA TCTCTCTCAA GTTCAAAGTT CCACAGATAT CTAGGGGACA
	AAATGTTGCC AGTCTCTTTG CATAGCAAGA GTGACCTITA CTCCAGTTCC CAACAAGTTT CTCATCTCCA TATGAGACCA
	TCTCAGCTTG GACTTAGTTG TCCATGTTAC TATCAACATT TTGGTCAAAG CCATTCAACA AGTCTCTATG AAGTTTCAAA
20	CTICCCCATG TITTCCTGTC TTCTAATAGC CCTCCAAATT TTTCCAACCT CTGTCTGTTA CCCAGTTCTA AAGTCACTTC
30	TACATITITIG GGTATCTITA CAGCAGTGGC ACTCCCCATG GTACTAATIT ACTGTATTAG TCTGTTCTCA TGCTGCTAAT
	AAAGACTTAC TCGAGACTGG GTAATTTATA AAGAACAGAG GTTCAACTGG CTCACAGTTC AGCATGGCTG GGAGGCCTCA GGAAACTTAC AAACATGGTG GCAGCAAAGA GAAGTTCCAA GCAAAGAGGG AAAAGCCCCT TATAAAACCA TCAGATCTTG
	TGAGAATTCA CTATCATGAA AATAGCATGA GGGTAACTGC CCCCATGATT AATTTACCTC CCACAGGGTC CCTCCCATGA
	CAGGTGGGGA TTATGGGAAC TACAATTCAA GATGAGATTT GGGTGGGGAC ACAGCCATAC CATGCCAGCT AGAGAGCCTT
35	AAGAAAGTCA CCTAATCTCC ACAAATAAAA GGTTTCCTAT TTGTTCAACA AAAATAATGA CACCCCTTTT ATGGGATTTC
	TGTGAGGACA AATGATAACT AACATAGCCT TGCATAGTGT CTGGCACAAA ATAGCTACTC AAAAAATAAT AGAAACAACA
	TTTAAAAAAT GTAGACTTTA TTTTTTAGAG TTTTATGTAC AAAGCAAAAT TGAGCAGAAT GTACAGAGAG TTTCCGTATA
	GCACTCCCTA CCCCCAAGCA CAGATAGCCT CCCCCAGTAT CAGCATCCCG CACCAGAGTG GTACATTTAT TATAACTGAT
40	GAATCTATAT TGACGTGTCA TTTTCATCCA AAATCCATAG TTTATATATAG GGATGCCTCT TGGTGTTGTA CCTTCTATGG
40	GTTTTGACAA ATGTATAATG ACATGTATTC ACCATTACAG TATCATAAAG AATAGTTICA CTGTCCTAAA AATCTTTGAT CTTCTTCCTA TTCATCACTC CCTCCCCATT AATCCCTGAC AACTACTGCT AATTTTCCTG TCTCCATTGT TTTGTCTTTT
	CCTGAATGTC ATATAGTTTA AATATACAGT ATGTAGGATT TTCAAACTGG TTTATTTCAC TTAGTAATAT GCATTTGATG
	TICITCCATA TCTTTCAAA GCTTCATAGT TCAATATTTA TAGAATTGAA TAATATTCCA TTGTCTGGAT GTACTACAGT
	TTATGTATTC ATTCACCTAT CAAAGAACAC CTTGGTTGCT TCCAAGTTTC AACAATCATG AGTAAAGCTG CTATAAACAT
45	CTATGTACAT GTTTTTTGT GAATTGAACA TTTTCAGCTT TTTTAGCTCC ATTCCTAGGA GTGCAATTGC TGGATTGTAT
	GATAAGGGTA TGTTTAGTGT TGTAAGAAAC TGCCACGCTC TTCCTAACTG GATGTACTGT TTTGCATTCT CACCAGCAAT
	GAAGAGTTC CTGTTGCTCC ACATACTCAC CAGCATTTGG TGTCGTCAAT GTTTTGAGCA ATAGCATTTT GATCTAACTT
	TTCCTAGGTA TTCTTTTTGA AGGAAATAAT ATGACAGATA ATAGAGAAAG GATATACGAG GACAGTTCTG TCCTTTATTT ATAGTCCATC ATTTAATGAA GGACTCTGTC CACACTTGGT ATTTTTAACT CTGATCCTCC TCTCCCATGA ACTCTGACAA
50	TCTCCTAAAT CCCTGTTGCT GGCACACATG GTTGTGTATC AGGCCCCCTG TGGTCTGTCT GAAGCATGGC TTTTTTTTTT
50	TTITTITITI TTITTITGAG ACGAGTCTC GCTCTGTCGC CCAGGCTGGA GTGCAGTGGC GCGATCTCGG CTCACTGCAA
	GCTCCGCCTC CCGGGTTCAC GCCATTCTCC TGCCTCAGCC TCCCGAGTAG CTGGGACTAC AGGCGCCCGC CACCACGCCT
	GGCTAATITT TTGTATITTT AGTAGAGGCG GGGTTTCACT GTGTTAGCCA GGATGGTCTC GATCTCCIGA CCTTGTGATC
	CGCCCGCCTC TGCCTCCAA AGTGCTGGGA TTACAGGCGT GAGCCACCGC GCCCGGCCTT TTTTTTTTT TTTTTTTTT
55	TTTGAGATGG AGTCTGTCAC TCTGTCACCC AGGCTGGTGC AGTGATGCAA TCTTGGCTCA CTACAACCTC CATCTTTCAG
	GTTCAAGTGA TTCTGCCACC TCAGCCTCCC AAGTACCTGG GATTACAGGT GCCCGCCACC ACACCCAGCT ATTTTTTTTGT
	ATTITIAGTA GAGACGTAGT TICACCATGI TGGCCAGGCT GGTCTCATTC CTGACCTTGA GTGATCCACC TGCCTTGGCC TCCCAAAGTG CTGGGATTAC AGGCATGGGT CATCACATGT GGCCTGAAGC ATGACTGTTG CTTTAATCAT ATGAAATACT
	GCTCTGTATT GTTATCTATT TGAAATGCCA CACCTCCTGA GCTAAATTGC AAGCTTTTAT GGAGCACAAA CCATATTTAT
60	ATATATTAGE ATGATACCAT GACACATATE AAAAGCTGTT ATATATTGTT ACGTGAATTG ATTCTTTCTC AGTTAAGAGG
••	ACCICIGIAG TAGCACTITC ATACCGITAA ITITICATIT IGIGCCCAGC CCCTACICIG IGAAAAAIGA AATGAATCCI
	GITATCATTT CCCTCCCAGG CCTTTTCTCC TTGTGGACAA TGTGTGGCTC AAGAGAAAAT TCAGTCAGTA AATTTGTTCA
	GTGCACAAAC TCTTTATCAC CTCTCACTGT TCTCAAGTGA GATAGAACAG AACATCCATC CAGTGTCTTA CAAATTGTCT
	GGTATATAGT AGGCACTCAA TAAATGTTTT TTGAATAAAT GCATACATGA ATCCTATTCC TATATATAGT ATGGTAGACA
65	GATCATTGAT ACCCAAAGAT GCCCAAATGC TGATCCCCAG AACTTGTGAA TATGTTACAT TTCATGTCAA AAGGGACTTT
	GCTAATGTGA TTAAGGATTC AGACCCTTGG ATTGTAAGAT TATCCCGGAT TAACCAGGGC CAATCTAATC ACATGAGACC
	TTAAAAAAGC AGAAAACATT TCCCAGCTGG GTTAGAGAGA GATGAGACAG AGTAAAAAGG AAAGAGATTC AGGGCATGAA
	AATGACTCTA CCCACTGTTG CTGGCTTTGA AGATAGAGGA ACTAGGCCAC AAAACAAGGA GTATGAGTGG CCTTAAGAAA TAGGAAAAAG CCCTCATCTG ACAGCCAGCT AGAAAGCAGT CCTCTGACCA CAAGAAATTG GATTCTGCCA ACCACTCAAA
70	TGAGCAAGGA AATGGATTCT CCCCTAGAAC CTCCAGAAAG GAACACAGCT CTGTAATGCC TTGATTTTAG CCAGGTGAGA
. •	CCTGTTTCAG ACTTTTGACC TATGGAAATA TAAGATAATA AAGTTTTATT GTATGCTGCT AAATTTGCGG TAGTTTATTA
	CTGAAGCAAT GGAAAGCCAA, TACAGACAGA ATATACAGAG AGAAAGAGAA TGAGTTCTTT CCTGATAATT TGTAAATATT
	TGGGTCTTCA CTGGACAAGC TTCACAGAGG ATTCACTGGT TCCCTAGCAA ACCAGCATGT CCAGTCCTGC AGCCTCCCTT
	TCTTAGGCCC AGCATATGTC AGCTGTGTGC ATAGAAAAAT CAAAGCAGGA CCCTGAGTAG TTGGAAAGAA AAGATGGTTG
75	GAAATGGGTT GCACTTCAAG TGAGGAAACA AGAGGTAGGA GACCGGCATC TCTTTCTCAT ATGTCCCAGG CTGACTCTTG

	TGAGTTGTTT TCCCTTGGAG GCTATCGATG ACAGTCACAG TAACCTGATG GAACCTGGAT CATGATGAAA GAAGTAAGTG
	TCAATGGCTC CGACTTCCAA GGACTCTGAT GTCCCACAGC ACTAGCTAAA CAAAGCCAGT TGGAAATGAG CTTAAATGGG
	GAATTTCCTG AATATATTCC CTATTGTTAG GAAGCCAGGT TGGCTTCCTT GCCTACAATT ATGCCAAGCA GTCACACTAT AGAGTCCCTA GGGACATGAT ATTAAGTGAT TCTTTTAACA CAAACAACTT AATAATCATT TATACTAATA GCAAAACGGC
5	CAACGGCTGA TATTCCACTT GAAGTAGAAT TGGCTATCCA ACTGGAAGAG AAGACAGGAA GACGTGATCT CCAGGGAGCC
	ACTAAAAGGA TTGGCACCTG CCTCTGGATT CCCCTTTTCC TTATATTACC TCTCAGCACT GGCAGGCCTT TATTTCAGGA
	TACAGTITICA CAAGTATTAT GTCACGTCTC TGAGAATTAT GTTGGTAGAT ATTTGCTCCT CTGGCCAGAA AGACCTAGTT
	TGGAGTCTGG AGTCATGAAG GTGACATACA TGTAGCTAGT GACATAAGTG TAGCTAGTAA AAATAGTGAG TAATGGCCCT
10	GAAATTCTAT TGAATGCCCA AAGTGCTGAC CAGGAACAAG CATGCTCTAG CTTATCTCAC AAGGAACTTG ACAATTTTCT TCAAAAATCC TAGTAGCTAA GATTTCTTAG TAACAAAGCC ACTAAGGCAC AATTATGATT AACTTGACCC TTAGGTGACT
10	TITAAGGACT ATTCTATAAA ATATTACAAC TAATAGTGGA TCCAAGCCAG CACACTCTGC TATATAAGAT TAATTGACAG
	TGTCCACACT GGTAAAATAA GTTGTTTCAT AAATACATTA GAATTCATTT GCACTTTCTA CACAGCCCCA AGTCCAGAAC
	TTTCCCCAGA ATAGGTCTAT GTTTTGCAAT CTGCTACTCC ATACAGAGAT TTGAGTTCAC TTGGCAATTT AGTGCTGCTT
15	ATATGTGACC AGTTAGTCTG TTTTACTTAT CTATGCCTTA AACATTACTA TACTTACTAA CTCCAAGATG CCTGGTCTCA
13	ACTTGACAAA AATACCCCAA GTTGGGAAAT CCTTATGTGA ATATGTAGAT AGTCACAATT GCTGGTTGAT GATGATCTGT CTTTTCCTGT ATTTGAGAAA ATGGAGATAA AATGGACCAA TCCAAATAAT GGATTAAACA TGGGAATAGG TGAGAGAGAG
	AGAGGAATAC ATGGTGGCTC TCAGTGTCTG GCTTAGGCAG TAAACACTTT CGTTAATAAA GACGGAAAAT AAAAAAGGAA
	TAATTGGTGT CTAGGGGAAA ATAATGAGCT CAAGTTTTAA CACTCTGAGT TCCCGGATGT GAGACATCCA GGCGCATTTA
	TCCAAGAGGC AGTTGGAAGC AACGTTCCGG AGCTTAGGAG AGAGGCATGA CCAAAAGCTG GTGGGACTGT GAAAAGGTAT
20	GGCCATTCTG GAAAACTGTT TGGCAGTTTC TTAGAAAATT AAACATGTAC TAACAACCCA GCAATTGTAC TCTTGAGCAT
	TTGTCCCAGA TAAATGAAAA AAAAAAAAAG CATTTTTTT ACACAAAAAC ATATACATGA AAGTTCATAG AAGTGTTATT CATAAAAAAC TGGAAAAAAC TGAGATGTCT TTATTGAGTG AATGCTTAGG CAAACGGTGG TCTATCCATA CAATGGAATT
	ATGCTTAGCA ATAAAGAGAA AAGAACTATT GATACATGCA ATAACACAGA TGAATCTCAA AGGAATTAAT GCTGAGTGGG
	AAAAAAAGCA CATCTCAAAA TGGTATATAC TGTACTATTI TATTTACTTA ACATTTTAAA AATAGCAAAA TCATAGAGAT
25	GGAGAACAGA TTAATGGGTA CTGTGTTTTG GGATGGGGAG TGAGAAAAGG GTAAGGTGTA AATATAAAGG GGTAGCACAA
	AAGAGCCTTG TGGTTGAAGG ATTCTATGTC TTGGTTGTAG TCGTGATTGC AGGAATCTAC ATGTGATAAA ATTGTATGGG
	TCTACATACG CATACACACA AGAGCATATA AAACTGGTGA CATGTGAAGA AGCTCCGCAC ATTGTGCCAA CATCAGTATC
	CTAGTTTCAA TATCAGACTA CAGTTATACA AAACATTGTC ATTGAGGGAA ACTGGGTAAA GGGAACACAG GACATTTGGC ATATATTTTT GCAATTTCCT GTGAATCCGT AATTATTTAA AAATAACAGA TATACTACAT ATCAAAAATT TAATGTCATA
30	AAGTTGATGA GTTTACCTAG TGGATAGCTT TGTTAATATC TGCTATAAGA CTACTGAAAA TGACAGTTAT GCAAGTATAA
	GCTCAGAGAA CTTTCCTCCC CCTTCGTAAA TGAAATGAGC AAAAGAAATG AAACAGGAAA GGCAAGCAGT ACTGAAAACA
	GGGAAGGGCT CTTCCCCATA TAACTATATC TGCGACTTCA ACAGCTATTC ATCCAGAAAC ACAGCCTCTT GCGCTAAGAG
	GAAACTTTGG ATAACAATAT GTTTTCACTC TCCAAGAGAG AAATGGATA GATTAATTTT TAAGAAAAAA AAAAAAACCT CACCAATTC ATGCTGTGGC TTGCACCTTT AATCCCAGCT ACCTACAAGG CTGAGGTGAG AGGCTTACTT GAGCCCAGGA
35	GTTCAAGGCT GCAATGAGCT ATGATTGATT GTGCTATCGC ACTCCAACCT GGAGTACTAA GCTAAGAGCT AAGAACACAG
	CTGAGAGCGG AGAAGAAACA AACAAATCTG ACCAATAACC CCCACTCCCC TCATTTTACT GGAGTGAGCT GAGACTGCTG
	GCAAACATGG CCTTTGACCT AGCCTGAACT GTAGCAAAAG TCATCAGATA TTTTTCCACC AATCAACAGA CAGAAGTGGG
	GAGAAAACAA TCGTAGTTCA TAACTACAAC AAGCAGATAA ACGAAGGCCA TGGTGAGGGA TGGAAGACAT TGTGATATAT
40	CAAAGGCAGG CTCATTTAAA ACTCAACCCA AATTCCAAAC AAAATATATA ATTGAATATG TATTAATGCC AAAGGAGCTT GAGTGAGCTT TAGCACAAAC CCCGCCCTCC AGCCCCACC CAAAAAAAATC ACTCTGTTCT CTCCCCATTC TTTGATAGGC
	ATACTTGCTG TTTTCTCACA GCCAAGGTAC AGAGGGGACT TAGAGGAACT AGAACTCTAA TACACTGCTA GCAGGAATGT
	AAAATGAAGC ATCTACTTCA GAAAACCATT TTATCAGTTT CTAGAAAGTT AAACATAGAC CCACCATGCA GCCCAGCCAC
	TCTACTCCTA AGTATTTACA CAAGAGAAAT GAAAACGIGI CCCCACACAG TIGTATTTAA AGGTGATGGT TAGCCTTGTG
45	TGTCAACTTG GCTAGGCTAT AATACCCAGT TACTGAATCA AATAGTAATC TAGGTGCATC TGTGAAGGTA TTTTGTAGAT GTGGTTAACA GCTACAATCT GTTGACTTCA AGTAAAGGAG ATTGCTCTTG ATAGTATGGG TGGGCTTCAT CCAATCAATT
73	GAAGGCCTTA AGAGCAAAAA GTAAGGTTTC CCGGAGAGAA AGAAATTCTG CCTCAAGACT GCAGCCTCAA CTCCTGCCTG
	AGTTTCCAGT CAGCCAGCCA GCCTAAAGAT TTGCTAGGCA TTATAATCAC ATCAGCTAAT TTCTTAAAAT AAACCTCTTT
	ATATATATIG ATACAATGAA TGGTTATAGC AGCCTTATIT GTAATAGCCA CAAACTGGAA ACAACCTAAA TGTCCTTCAA
60	TAAGTGAATA CATAAACAAA TTGTGGTATA TCCACAATTT TTACGCAGCA GTAAAAAGGA ATAAATGGTT GAATAAGGAA
50	TAAACACATA ACAAGGATGA ACCTTAAAAC CGTAAGGCTG AATGGAAAAA GTCAGACAAA ACTAATACAT ACTGAATAAT
	TCCATTTATA TTGAAGTTCT AGAAAATGAG GACTAACCTA TAGTAACAAA AAGCAGAAAA ATTTTGCCCA CTGGTGATGG AGGGGGCGCA GGTATTGTAG AGTATCTGAG AAAGGACAAC TGGATAAAAAG GGGGCACAAG AAAACTTTTG AGGGTGATTG
	ATATGTTCAT TATCTTGTGG CATGGTTTCA TAGGTGCATA CATATGTCAA AACATCAAGT TATACACTTT TAAAATGTTC
	AGTTTACTGT ATATCTATTA TACTTCAGTA GAGAGGAAGG AAGAAAGTGG GCAGGGTGGG GGAGAGGAAA GGAAACGAGG
55	GAGGAAAGGC CCTAATAGGA AGGATTTTGG AGTTTAGATT TTAAAATGAT AAAGGATGTT TGACACTCTA GGCATATGAC
	GAATATAGGA TTATGAGTCC ACAAAAACCA CCAGGAAGTC ATGTATGTTT ATACTTTTAA GTGAAGGATC AGTGGATTAT CAACTCCCTA ATGCTTTGCC TCTCTATGAC TGGCTGCTGT CCTTCTCATC CCAATACTCC TTCCAAAGCC CCTTGCTTAA
	ATGTAAGCCT TCTTTCCTCC TTTCAACACA TCCTGCATTC CGTGACAAAA TAAGTTTTCC TTAAACAGAA TGTACAGCAT
	ATTATITGTA CAATTAAAAA TTTTTGGCCA GGTGTGATGA CTCATGCCTG TAATCCCAGC AATTTGGGAG GCCGAGATGT
60	GTGGATTACC TGAGGTCAGG AGTTCGAGAC CAGCCTGGCC AACATGGTGA AACCCTGTCT CTACTAAAAA TACAAAAATT
	AGCTGAGTGT AGTGTGGCAG GTACCTGTAA TCCCAGCTAC TCAGGAAGCT GAGGCAGGAG AATCGCTTGA ACCTGGGAGG
	TGGAGGTTGC TGTGAGCAGA GATCAGACTA TTGCATTCTA GGCTAGGAGA CAGAGTGAGA CTCGGTCCCC AAAAAAAAAC ACATTTTTTT TTAATGTTTC CTCCTTGCCT GTAGGAAAAA GGCTCTGACT CCTTAGCCTG GGCATCAGAG CTCTATCTAA
	ATGGACTITA ACCIGATITT GTGGCACTAA TTCCATTGCA GTACTTGTCC GCTCACTGGC CTGTGCCTCT CTGCCACTAT
65	TITITGGAATA ATGTCCTCTC TCCATCTTGT TTACTCAACT ATATCCAACC TCTAAGGCTG TGCTCCTACA AAGCCTCCCC
	TGGCTACTTC AGCCCACAGA GATATITAAC TGCTCTGCAG TTCAGGACAT TCTTCTGACT CTTTAAATCA CATTTACTTA
	TATATGATCT TGTGATATTT TTTGTTGACG TGTTTACTTT AATTTTCTTC CATAACCTAT TCATTCAACA AACTCAACAA
	TTATTTATTA AATGCCAAGT TAGAAAATA TTATTGATTT TATATAGATT ATAGATATGT TTGAAATTTT ATTTGGCAAT CTGCAAGTAG AAAAATAATT ATAATGTGGT ATATCTGTGA TAGAAGTATT AGTGCAGAGA CCATGGGGAA CATAATCCAG
70	CCTGGAAGTT CAGGAGAGAT ACGTGGAAGA AAGGACGTCA GAGCCTTTTT CCTACAGGCA TCGAAGAAAC ATTAAAAAAA
	ATTITITIT TIGAGATGGA GTCTCACTCT GTCTCCCAGC CTAGACTGTG GTGGTGCGAT CTCTGCTCAC TGCAACCTCT
	GTCTCCCGGG TTCAAGTGAT TCTCCTGCCT CAGCTTCCCA AGTAGCTGGG ATTACAGGTA CCTGCCACAC ATGGATGATA
	AATATGATCA TATTITCTTG ITCITTTCCT CCTCAGTTGT CTTCCCTGAA GAAAGGAATG CCTTTTATAG ATGACAAACT
75	CCCATTCTCA AGAACAAGGA TTTTTGACCA ATTTAATTTA
	TOTAL

GGGCGAGAAA CCAAAAGCCA TCAGTTTGCA TAGGAAACAC CTTGTTTAGC CTAATCTTTT TATTTTTATT ACTCTATTAG TCACTACAAC TATTTTCTGA TTGCTATGGT GATAGATGGT TTAAAACAAG CCTTCATTAA GAATTGTCAC ACCATGGTCT CAGTCAAAAA CACCAACATT TTTATTGGTA TTGACAATTA TGGGAATATC CAATTCCAAG AAGACAAGGA GACCTCTGAA CTTTCTAAAT GAAGACTCCA ATCTTCCTGA TCTGATGGGA AGCAGCTTGG CAAGATTACC AACCACCACC ACAGAGAGTG GACTCTAAGC TAAGACTTAA AAGATAAGTA GAAATTATCC AGGTAAAGAT GTGTACAGAG AAGGAAGTAC ATCCAGGGGA AAAGAACAAT ACGTGCAAAA GTACGGAAAT GGTAAAAAGT AATACTACAT AGTCAAAGCC AAGCAGAGTT CAGAAGGGAT CTGGTGGTGA AAAATACGGC TAGAGAAAGC AGCAAGGATT GGCTTCTAAA ACCTATGTAG TATCTTGGAC CTTACCCTAA
ATGTAATGAG AAGCTTCTAA AGAATCTTTC ATTTATTCAT TCATTGAACA AATATTTTGA GGCTTCTGT GAAGAACATC ATTCTAAGTA GTAAAGATAC AGCAGTGAAT AGGACACATA AAATCCTAGA TCTCACAGAA TTGACATTCC AGAGAGGGAA AGGTAGACAA TAAATACATA AACAAATCAT TTAACAAGAT GATTTCAGAC AATGGTACGT ACTGTGAAAA AAATGAAACA AGGTAATGGA CAGCGAAAAG GCACTGGAAG GAAGCCTGCT TACCTTTGCA TGGTTAGAAA AGATCTCTCT AAGAAAGAGA CCACATGTGA GCTGCGACCT GAAGGATACC GAGAAGCTAG GTGTGCAAAG ATGTGGGGAC AGAACTTTTG GACTGAATAG CAAATACAAA TGCCCTTGGG TGCAAGCTTT GCCTGTTCAA GGACCAAAAA GAAGGCCAGT GTGCCTGCAG CATACTAAGC ACAGAGGAAA ACACTGTTAT ATGCTGAGAT TGGAATTATA AGTAGAGCCA GATAATATAG TCTCTTATAG GTCATAATAA GGCAACCAGA TITTATTCCA AGAGGATTTA AAAATCACTG GAGGTTTTGC ACTAGGGTGA GAGGTGTGAT TTGTATTTTT TGAATAAATG GGTGCTGTGA ATTGAGATAA AGGAGATTGA GAATCACAGG CTTTGTTTTG CAAATTAATT TTGAGAGGCCT TATTAGACAT CCCAGTGGAG ATTCAGGTG AGTGGAGCCC ATTGAAAGGT AAGGGACAGG GTCAGGTGTG GTAGGTCAGG
CCTGTGATCC CAGGACTTTG GAAGGCCAAG GCAGACAGAT CAGTTGAGCT CAGGACTTTG AGACCAGCCT GGGCAACATG
GGAAAACCCT GTCTCTACAA AATATGCAAA ATATTACCTG GGCATGGTGG CATATGACTG TGGTCCAAGC CACTTGGGGG
GCTGAGATGG GAGGATCACT TGAGTACAGG AGGCGGAGGT TGCAGTGAGC CAAGATCTCG CCACTGCAAA CCAGCTTAGG TGACAGAGTG AGAACCTGTC TCAATAAATA AATAAGAAAC GTAAGGGAAA AGGAAATTAA TCTGATCATT GGCAAATGCA TAGTATTTAA AGCCAGGGGA GTAGATGAGA TACTCAAAGT AGGTGAAGAT AAGGAGGCAA TGAAGGCCTA GGACTCTGGT GTACATTTAG ATGGTTATAA GAGGAATAGA AACTGGCAAA ATAAGTAACA CTGAGCACCC AATGAGGTGG AGAGGAAAGC CAGGAGATGA AGCATCATAG AAGGCAAGAG AAGAAGGGTO TCAAAGAGGC GAGGCAGTCA TCAACTTCTG GGCAGTCAAA TAATATAAGG ACAGAAAAGT GACCATTGGA TTTGGAAATA TGATGAGCAC TTTGAGTGGA GTGTTGAGAC AGAAGACCAA TTAGAGTAGA TTGAGGAGAT AACGAGAAAT GAGAAAATGT AACCTGCAAG CACAGACAAT TCTTGAGAGA CTTTTCTGTG TGATTTGCCA AGAAGAGGAT ACTGGTAGCA GAAATAAAAA CAGCACTGGA GAAAGAAGAG TITAGATTTT TATTCTTTGG TGTCAGTTAG ACAGGAAAGT AAGACATTAG AAGAGTCCTT AGATAATTTA TGTAATTGTT CACTTAGGAT TTTTAAATGT ACCAAGGACT AACCAGCCTC IGGGGAATIG CIGITATACTI AGCAAGCTIA CARTGGACAT ATTATTGC CALGCCAG GCAACTACTG
ACTGACTAAT AGGAAATACC CTCAACTGAA AATGAGGAT CATCATTTGC AAATGAGTTC CCTTGCCCAG GCAACTACTG
GGGAAAATGT CATGCAAGCA AAATTAATCT TTGAAATCCT CCTTTTCCAT TTTTTTGTGTC TTCCTTTTTCC ATAGGCACCA
GAAATATCAT GGTGCCTGGA TCTCATCTCT ACAGAAAAAA AAAGTGATTT GAAAACTGA TTTATTTGTT CAGACACTGT
GATTGTATTT TCAAAGATAA CCTAAAGGGGA CACTGTCTTTCCCAACAG GAATGATTCCA TTTATTGTAGC CACCTGCTATG GGCCAATGGC TGGGAAACAG GTATGAACAG TAGGTTTCTG AGTCCCCTGG AATTATTCCA TTTATGTAGC CACCTCCATG ACAGGAAGCC TCCCTACTCT TACTTCCCAG TTTGTTCATT CATGGCACCA GGTTGCAGAT TAAAATTTGC TCAGTGACCT TITATCTAAT AATGTGTTAC CTTCTTCTCT TAAAAAGTAC AAGGGACAAA TGCTCATGGT ATACTTTTAG GAGATTGTGG CICICIATIA ACAGTATITA TICAACAAAC ATTTATIGAG CATTTATATG TGCATCATGC TAGGGACTGG AACCTAGTAA GTGTAGCACA TATTATTTCA TITAATCCTC ACAACAACC CATGAGGTTG GTTTTATGAT CCCAATTTTT CAGAAGAAGA AACTGATATT CAGAACCAGT TAACTAACTG GTTCAAGGTC ATGCAATTTC TAAGATACAG AACCAAGAGT CAAAGACATG ATITTAAACC AAAGCTITIT CTGCTACTCC ACATTGCTTC CCTAGGTGAG ATCTGAGGCA TTCCGCGAAA AGAGAAGGGT CATAAAGCCA AGGGAAGACA AGCTTAGGAA AAAAAAGGGA AATGTCCTAA ATAAACAGCT TTCCTATTTA CCAGAAACCA CTAGTITAAA AATATAATGG GAAAAATCCT ATTCACTTTA ACAATGTTAA AAAAAAAA GATAGAAGAA ACATAGGGAT ATCAGCAGAA ATTGGCATAG ATAGGGTTAA GACAAATAGC TAATCATTAG AGGGGAGGAA GGAAAGGAGG GAGGATAAAA TTAGGTTCCT GCCTTCATCT TACATTAAAA TAAATTCCAG ATGTATTACA TTTAAAATTTT TTTAAAAAAA GAAACCACAA AATACTTGAA GAAAATATAA GTTGTTATAT AGTCTTTTGA TGGGAATTTT TTTTTTTTTC AGAGACAGGG TCTTGCTCTG
TCACCTAGCC TAGAGTGCAA TGGCATGATC ATGGCTCACT GCAGCCTTGA ACTCCTGGGC TCAAGTGATC CTCCCAGCTC AGCCCCCCAG GTAGCAGGAA CTACAGGCAT GCGACACCCC ATCCAACTTA TITTITATIT TITGTAGAGA CAGGGGTCTT GCTTTGTTTC CCAGGCTTAT CTCGAACTTC TGCCTTCAAG CACCTCAGCC TCCCAAAGAG CTGGGCTGAT GGGACATTTT TTAACATAGT GCCACATTAC CATAAATGAA AAGCTTGTAA AATACTAATT TTTAAAACTA ATATATCA GAAATTTTTA
TAAACAAAGT TAAAAAGCAA ACACAAAAAA TTTGTAGCAC TTATGACAAA TATATGTATA TATATGAATA CAAAAAGAGC
CTTTACAAAA CAGTAAGAAA ACAATGAATA CTCCCAATGG AGTATTCAAA ACTAAACTGC TAAAAAGCAAT TCAAAACAAA

	101/03/2/2013
	GCATAATTAG GCATGTGTAC AAGGGTTTAC ACACAAGAAT GCCTATTGCA ATATTGCTTT TAATGCTAAA AAAAATTGGG

	GAAAATGCTT TAAAAATATA GATTAAGACT GTACATTGTG GTACAGTCAT ATAATCAATA GTATACAGCT ATTATTTATT TTCAGCCACT GTCCAAAATA TAGCCTGGCC TAACAACATT CTGTTAGGAT ACGCAAGCAC CGTGAGGAGA TCAGCTATAA
	AGTATCAGTG TITCACACCA CIGCICCITT GCTAATAACC TICAATGGCT TITAAAGAAG TAAAAAACAA AGGCAAAATT
5	CCTTAGTCAG CCCTTAAGAC TCTCTGTTAC TTAGCTCAAA CTACCCTTTT CAACAACACT GCCCTAACCA GGATGAGTTT
	TTTGCCCCCC TGGAGTACAT TCAGCCTTTC CTTATCAAAC CTTCCTTTAA ATAAGTATCT TCTCCAGGAC CACTTCACTT
	TCTTCCCCAA TTTAGCATTT TCTATATCTC CAGGCCTACC TCTATAAAGC CTGTCCTAAC CACTCAAACC CTAGCTTTTT
	CTCTGAACTG CTAGAAATAT TTTTCTCTCA TTGGCCATTT AGGTAAAAAG GTTTTTACTG TTTATTACCT ACTCAATAAA
	AATTITCTIT TTTTGAGACA AGGTCTTACT CTGTCGCCTA GAATGGGGGG AAGTGGTGTG ATCACAACTC ACTGCAGCTT
10	CTACCTCCCA GCTCAACAGT CCTCCCACCT CAGCCTAGTG AGTAGCTGTG ACTACAGGCA TGTGCCACCA TACCCCACTA
	CTTTTCATTT TTTATTTTTT GTGAGATGGA ATCTCACTAT GTTACCCAGG CTGGTCTGCT GATCTCAATT GATCCTCCCA
	CTGTGGCCTC CCAAAATGCT GGGATTACAG GCATGAGCCA CAATATCTGG CCCCAGTAAG CTTTTAAGGC CATTAACATG
	AGGAACAGTG TTCTTTACAC TATTTTATCA GCTAGGGCTT TGCATGGAGT AGGAGTTTAG TAAATGCGGT TGATGGGTTA
	ATCAATGTGT GAAAATATTC AGAGCCACCA AAAACAGATA TTATGTCTAT TCTCATCAAC AATCAAAATT GAGTAAACAG
15	CCATTITCTA ATACAGGAAA CCACAAAACA TIGAATGGTG ACATTAAAAA ATICCCCCAG CAGGAGCCAA CCAATTITTT
	CATCCTGATC CAAGTTAGCA AACTGCAAAA GATAGGAAGC ACTAATGAGT GGAAATTTGA GTAGAAGCAT TTCTTATGAA
	GGCTGTCTTG ACTGGATCAC ATTTTTATTG CTGTTGGAGG TGCCAAATGT GTGTGTTTAT GCTAATCCTC CACCTCAGGC
	AACACACAGT CAAGGATCCT ACCAAGTGTT ACCGTCAAGT GTCTGTTGGC AGCTCAAGTGC CCCAGCGTTG TTCCCTTGCA
20	CTAGGGAAAA GACTATTCC AGGTACAAGT ACTCCCACTT TGATGCTACA GAGGAGTTGC TGAACCTTGT GTCATTAATC
20	TCTCTTCGTT AGATCCCAAC CCTGTTTAAA TCCCACTATC TGCCTACTCT GGGTCTTCAC CAATTTACTA GATCATAGTT GGAGAAAATC TACAAAGCCT TGCTCCCTTT AGATTTAAAC AGGTCTCCGT TTAAATTTAG AATTGCTAAC TTCAAGCGGG
	CCCTTATGCG ACAGTATGCC TGTCAGTCAT ACTACATTTC CTCAATTCCA TTCATGTGAC TGCTCCATAC CCTTCCCTCT
	CTCTTCATAC TACTATTATC TCTTCCCCCC TCCCTCATTT TTAACTGATG ATCTTGTTTC CTATTTCTCT GAGAAAATAG
	AAGCCATCAA AAGAGAGTTT CCACAAACTC CTACTGCCTT ATCTAGCCCT GTACCATATA CTTTGCATTT CCTCTCATTA
25	CCATGGATGT ACTGCCTATC TGTGCTTCTA TCTAAGGCTA ACCCTTCCAC TTCAGTTTTG AATATTATCA GCTCTTACCA
	ACTCAAGGCC ATTGCTCTAG CAATTCTCTC ATTCTCTCC ATTCTCTCC ATCAAGTTT CCTTTTCTTC AATTAACAGA
	GTAGCTCCTA AAGGGAAAAA AAAGTCTTCT TTTTCAATGC TCATCATCAC TGGCCATCAG AGAAATGCAA ATCAAAACCA
	CAATGAGATA TCATCTCACA CCAGTTAGAA TGGCAATCAT TAAAAAGTCA GGAAACAACA GGTGCTGGAG AGGATGTGGA
	GAAATAGGAA CACTTITACA CTGTTGGTGG GACTGTAAAC TAGTTCAACC ATTGTGGAAG ACAGTGTGGC GATTCCTCAG
30	GGATCTAGAA TTAGAAATAC CATTTGACCC AGCCATCCCA TTACTGGGTA TATACCCAAA GGATTATAAA CAATGCTGCT
	ATAAAGACAC ATGCACACGT ATGTTTATTG TGGCACTACT CACAATAGCA AAGACTTGGA ACCAACCCAA ACGTCCAACA
	ATGATAGACT GGATTAAGAA AATGTGGCAC ATATACACCA TGGAATACTA TGCAGCCATA AAAAATGATG AGTTCATGTC
	CTTTGTAGGG ACATGGAGGA AGCTGGAAAC CATCACTCTC AGCAAACTAT CACAAGGACA AAAAACCAAA CACTGCATGT
25	TCTCACTCAT AGGTGGGAAT TGAACAATGA GAACACTTGG ACACAGGAAG GGGAACATCA CCCACTGGGG CCTGTTGTGG
35	GATGAGGGGA GTGGGGAGGG ATAGCATTAG GAGATATACC TAATGTTAAA TGATGAGTTA ATGGGTGCAG CACACCAACA
	TAGCACATOT ATACATATOT AACAAACCTG CACGTTGTGC ACATGTACCC TAAAACCTTAA AGTATAATAA AAAAATATAT
	ATATATATAT AAAACAACTA AAAATAAATC TTCTTTTTCT GCAGGATCAG TCCATCACCA CACACACAGG CTGTGTTTTA TGTTGTTCCC CAGCTTAAGA GATCGTTCTC CAGATCCCAC TGCTCCTTCC AGTTGTCACC TCAGTTCTCC ACTTCTTTTT
	GCTGATAAAC TACTCTAACT AGTTACATAT GATTTCTGTC CCCAGGTCCC CTCCCTCAGT TGTTTTGAAC ATAATCATTT
40	ATATCATTTA TCATTTTCAC TCTAATTGCA CAACCAAAAA CTCCCTTTTT TTTTAGATGG AGTCTCACTC TGTCACCTAG
	GCTGGAGTGC AGTGGCATGA TCTCGGCTCA CTCCAACCTC CGCCTCACGG GTTCAAGTGA TCCCCCTGCC TTAGCCTCCT
	GAATAGCTOG GATTATACAC ATGCACCACC ACACCTGGCT AATTGCTTTG TTTTTGTTTG TGTGTGTGTG TGTTTTTTT
	TTTTTTTGGA CAGAGTCTCA CTCTGTTGCC CAGGCTAGAC TGCAGTGGCA TGATCTCAGC TCACTGCAAC CTCCACCTCC
	TGGGTTCAAG CGATTCTCCT GCCTCAGCCT CCCGAGTAGC TGGGACTACA GGCATGCACC ACCATGCCAG GCTAATTTTT
45	TIGTATITIC AGTAGAGACC AGGITTCACC ATGITTGGTCA GGCTGGTCTT GAACTCCTGA CCTCAAATGA TCTGCGCACC
	TGGACCTCCC AAAGTGCTGG GATTACAGAC TTGAGCTACT GCGCCGGGCT ATTTTGTGTT TTTAGTAAAG ACGGGGTTTC
	ACCATGTTGT CCAGGCTGGT CTCAAACTCC TGACCTCAAG TGATCCGCTC GCCTCAGGCC CTCAAAGTGC TGGGATTACA
	GGAGTGAGCC ACCATGCCTG GCCATAAAAC TGCCCTTTGT TAATATGACT GTTGGCCTGC ACATTGTCAA ATCCAGTGGC
	ATTCATCTTA CTCGGCCAAC CTACGGCATT TGACACTGTC TGTCTTTCCT TCTGTTCCT TATCTGTTTC CAGTATACTG
50	GCCTGGCTTT CTTTTACCT CTTTTATAG CTCTTCCAGT CTCAGGCTCC TTTGGGGATT TGAAGGTATG TTGCATTTTG
	CTATICAATG AATAATGACA AGTAATGACA ACTTAAGACA TTAAGTGGTC AGTTCCTTTA CTAGGGATAAA AATAATTTTC
	TTCCCAACAT GGGGCATATT CCATTTCCAG TCTGACTGTT CTGTGTAATC TTTGTATTCC TTGGCAGCCC CTTTTATATC AGTTCATCTA CTGTGCAGGA AATTGGACAA ACATTTGCAC TGGTATAACC AAATACAGTT GAACTTTTGG CTTGACTCTT
	AGCTGAACTC ACCAAAAATA ATTTCGTAA GAGACTGAGA CGTCTACGAG TAGGTTTTTC AGAATTAGTA AACATAAATC
55	AAGGATACAC AGGTAGATTT GAATTTCAGA TAAACAACAA ATACTTTTTT AGTATGTCTA CTGAAATATT TGTATCTTAT
33	CTGGCAATTC TACCTGTAC AGACTAATC CATTCTCTTG AAAGATCTTG ACTCTGTAAT AAGITCTTTG GTGATGGAAG
	GGAGGTATTT CTGTAATTAG AGTCACTGTC TTCCTCCCAG TTTTTTATCC TGGCCCAGAT CTGCAATGAA CACACGACAG
	AATCCAGGGG GGATGAAGAT GGGTGCTTTG CAGGAAAAAA AAATTAAAAA CATCTGAAAA AGCTTTTGTA CTAAAAGAAT
	GTGATCTAAA AAAGAAAGCA GGAGAACTTT CTGTCTGCAC TTTACATCAG AACAACCTTG GCGTCTAGAA GCTGTGCCCT
60	GTGGGAAGTG GTGGTGCTTG GTAAGAGATG CCAGGACCAG TGGTACCCAC TGGGAGCACT GCCAATACCC AGCAAGGAGC
	ATGGGTGCAC AGTAAGGCAT TGCACTGTGA TTCAGCATAA AATAACAATA AGGGAACGTC ACGGAGAAAA GGCCAGACTT
	CCTTTGTTTA GAATGTGGGA AATGTCTTCT GAAAAATGGT AGTAAAAAAG CATGCTTGGA TGGTCCACTC CAGGCAAAAC
	TOACTAATCG GGGGTCAGGG ATACAACCCC TGCATCATAT GTTTGTTTCT GTTGGGCTGA CATGAGGTTC ACTGTGACCA
	CTGTGGTTTA ACCCCATAGT CTCCTGGAAA TACAGCCAGG TCAAGAGAGC TCCACATAAA ACATAATCAA AAAAATAAAC
65	TCAAGTTTCC ACTGATCAGC TTTTCACAAC TCTTATCCTT TCACTAACTT TGGAGCAAGA TTTGAGAATT GGATGGCTAT
	TIGAGGGCTA TTTCTGCGCT TTAGTICAAT GITTTGTTCT TICTTTATTA GAGAACTATG GTTTTTTATT ATATTTACAC
	TITAAGITCT AGGGTACATG TGCACAACGT GCAGATTTGT TACACAGGTA TAAATGTGCC ATGTTGGTTT GCTGCACCCA
	TCAACTCGTC ATTIACATTA GGTATTTCTC CTAATGCTAT CCCTCCCCCA GTCCCCCACC CCCCGACAGG CCCTGGTGTG
70	TOATGITCCC CTTCCTGTGT CCAAGTGTTC TGTTTATGTG ATAGATTACG TTTATTGATT TGTGTATGTT GAACCAGCCT
70	TGCATCACAG TCACTTGCTT ACAAGAAACA AACACTTCAC AGATGGATCA TTATGTGTGA TAAGTGAAAT CCAAGGATTT
	ATGCTCAGAG GTGGGCTTAA CAGGTAGGAA GAGCAGTATT TTCCTTCAAC CATGAGTGTA TGCAGGTTTT TCTTTTCTTT
	TITGAGATGG AGTCTCACTC TITTACCCAG GCTGGCGCGC AGTGGTGCGA TCTTGGCTCA CTGTAACCTC TGCCACCTGG GTTCAAGCAA TTCTCCTGCC TCAGCCTCCC AAGTGGCTGG GATTACAGGC ACCTGCCACT GTCTCCGGCT AATTTTTGTC
	TITITAGTAG AGATGGGGTT TCACCATCTT GGCCAGCCTT GTCTTGAACT CCTGACCTCA TGAATCATCC TTCTCAGCCT
75	CCCAAAGTGC TGGGATTACA GGCATGAGCC ACTGCGCCCA GCCCACAGGT TTTTCAAAGA CTAAACTTAA AAAAAAAAA
, 5	SECURIOR TOUR CONTINUE RELIGIOUS RELIGIOUS RELIGIOUS TITLEMANDA CINARCITA AAAAAAAAA

	AAAATTTCCC	AATGAAATAT	AAAACTAAAG	TGCTAAACTG	TGATAGACTG	TTTTACAAGA	ATGCCAGTTT	TCACAAGTGT
	CTATAGAACA	TGTAATTTAG	ATAGGTAAGA	TGAAATTTTG	ATAATATTTG	ATGGCAAATT	TAAACAGGTA	TACAACAAAA
	ATAAAATTCT	AAGCCCCTCA	ACCAACTGAA	TGGACTCCTT	CTCTCAGCCA	AAGGAATACC	AAAGTAAACC	TGAAAAACTA
	GTTTTGGCCA	GGATTGGGGG	TAGGTGGGGG	AAGCCCAACA	TGACTCATTA	TTCTCTCCTC	CCTTTGGAAT	TCAGGCACAA
5							AGCAGAGAGC	
_							CAAAGCTGTC	
							ATTTAACTAA	
	TGTTTTTTTT	TTTTTTTTT	GAGGCGGAG	TOTTGOTOR	TTGCCCAGGC	TOGAGTGCAG	TGGCGTGATC	TCAGCTCACT
							TTACAGATCC	
10							ATTGAACTCC	
							ACAAGACATT	
	TOTOTOTGAA	GCTACTATCT	AGAGGCTTCA	TCAACATAAT	AAGACCCTTC	CTCTCCACAA	CTCCTTATCT	TATCCTATTA
							AAGTCTTTGA	
							TTATATGTGT	
15							GGCACATGTT	
10							TATTGTATAG	
							TTCATATCTG	
							GGATCACGTG	
							GCTCAATACA	
20	CTAGGTGCAA	TTCATTAATT	CATGAATTAA	TGAATTAACA	CCCCCCAAA	CATAGIAGGI	TTTTCACAGA	CTACTCTTTC
20							AATCTGCTTA	
							TCTATTTTAG	
							AGGAAACTAG	
	TAATAGAACA	AAATTCCTGG	CCTTTCCCCT	TCCCAATCCA	CCCCACCCTC	TTCTTCAAAA	GGGGGAAGAG	TCATTTCCCC
25	ATATTTTTCT	PACCACATTT	ATCTTCCTCA	TOUCAATUUA	TTACTCCCCC	ATTOCOCOC	TACACTICCC	ACACACCATC
23	TOTTOTOTO	CTCTCACCAA	CTCTCTCAAT	TOTTCAACTT	CACACTCAAA	ATTGCCTGCC	TACAGTTGGC GTTTTCCTAG	AGAGACCATC
	TOTTCOTOTT /	O1111AC11C	CATTIOAAAA	COTATTACAC	CACCAGGAGA	TTACTOTATA	TGAGAAATAT GCTCAAAAGG	LEGACICATAC
30							TAGAATGGAA	
50							ATTTGAAGTT GTTACAGAAT	
							CCCTGGCTGG	
	CATGACCACG	GTTCACTGCA	GCTTTGAACT	TCCAGCCTCA	ACCAATCCTC	CCACCTCAGC	CTCCCACATA	CCTCACCCCA
							ATGTTGCCCA	
35	GAACTCCTTG	CCTAGAGAGA	TOCTOCOTOC	AAGGTCCCCC	AAAATOCTCO	CATCTCACCC	AAGAGCCACC	ACCOCCCCC
55							CTCAAGCAAA	
	GGTTATTCTA	CATATAAAGT	TCAGCAGTGT	TGTTCCACAG	TOTOLATACI	CAACTGAGGT	CAAATGTAGG	CTCCACCAAC
	GTCACTGGGG	CTCTCATCAA	GGGCCTCTCC	TTGCACTCTT	GCCAACCCTG	TTTCTTCATT	GTCTCTACCA	CCATCACTCA
	CCAGCAATCT	CCCACAGTCA	CTTCTTTAAA	ACTTCACAAG	TATTCTCTCA	ATTOCAGOOA	ACCCCTTGAC	TOCOTOLITA
40							AATTTTAATT	
-10	CATATGTGTT	TCTCTATCAT	TOTTCATOTO	TTTCCTCCC	CTTCCATCCA	ATTTCTTC	TCTGTTTGCT	TCCTTCCTTC
	CTTTAATACA	TTTCTCTTTT	TCTGAGAAGG	CTTGAGTCCA	AAACTCTCAG	TTACCTCTTC	TTCTGTTTCC	CCTTACTTAA
	TCTCCGAACC	TTCATAAATT	AAATCTGACA	AAGTCCCCTG		GAAATGCACA	AGTCACAGTA	AAAGGGGCAC
	ACACAGAACA	CAAATAGACC	CAGGGTCTTT	TCTCTTCATC	ACTCAGCTTT	TTATAGGAGA	TCCAGGAGAA	ATGAAGTGGA
45	AAGGGAAGTG	TGTTGAGTTA	CTATACAACA	CAAGAGTAAA	CTTTCTTATA	AGTGGTAATT	TTTTTTTACA	CCA ATA ATTC
	AAAATGGAAA	TTACCTTCTC	TACTCATAGT	AAGTACTCAG	TGCGTTCTTG	ATGGGATGAG	AATGTGTTTG	ACCTTTACTC
	TAAGGCAGAA	TTCTGTTTAG	TCTGCCAGTA	TTGGAGAAAA	ATAAAACACA	AAGGGACTGA	CATGTAGGAA	CTCCCACCTC
	GGAGGGTCTC	AATTCTTCCT	ATTACAAAAA	TGCCCCAGAG	AAATAAAAAG	CTTGTGTACA	TGTTGAGATG	GCAGAGTTCT
	CTGGCCCCCC	TOGCAGGATG	TOTGACAGTG	GGGTGGCTCT	CTGCTGCGCC	ACCATGAGCT	CAAACCCCTC	ATAGGAGGGG
50	GAGCACACAG	GCAGGAAGGT	GCAGGAGCTG	GGCGAGCTCT	TTGGGCTCTG	GCCCCGTGGT	ACTGTCTAGA	CCTCCCTCCC
-							TGCAGCTTAA	
	GCTCAGTTTC '	TTCTTGGTAC (CCAGGTCCTT	GTCTGGCATC	TAGGAAGAAT	CACGTTACAC	ATGGACTIGA	AGGATGAATG
	TGGGAGTTTT	ATGGAGTGGT (GGAGGTGGCT	CTCAGTGGGA	TGGATGGGGA	GCTGGAAGGG	GGATGGAGTG	GGAAGATGAT
	ATTCTCCTGG	AGTTTGGCTG	TCCAGCAGCC	GATCTCCTCT	CCAGTCGTCC	CCAGCCTCTC	GACGTTCAGA	TGCTCCTCTT
55	CTCTCCTTCT (CTGCCATGCT	GTTCTGCCGT	TCATCTGCCT	GTCTCTCTCT	GGAGCCTGGA	ATTTGGGGTT	TATATGGTAC
	ACAATAAGGG	GCATGGCAGG	CCAAAAGGGA	ACTITITAGG	TGCAAAAAAC	AGGAATGCCT	CTTCTCACTT	AGGGCTATAG
	ATTTTCAGGC '	TTGAAGGTGG	GGCCTTTACC	AGCGAACCTG	TATTTCCCTG	TCTCCTGTGC	ATATCAATGT	AATCAAATAC
	TGGGCTGATC	CAGGATGTTT	CTTTAGACCA	ATTATGGGTA	AAATAATTTA	CATTCAGGTT	TTTATATTTG	CTTTTGTCAT
	TICITITIAA C	CAATCATGT /	AAAATATCTA '	TACGACAGTA	ATAGATGATA	GCGAACCTAA	TTAAAATTAC	CAGAAACTTA
60	AGAATCTCTA	ATGATTICAA	CTGTAACTAA	GGTTATTTCT	CTTTATGTTG	AACAATGTTG	GGAGATAAGA	CACAAGAGTT
	TCTGAAGTAT '	TTCAGAAACA	CAAAGAGGGA	GGTTATATAA	ATAATATTT	TTTCCTACTT	TGGGAAAATG	AAAGCTAGTC
	ACAAAGTTAA	ACGAGTGGTT	ATTTTAATAT	TTAAAATACA	GGCTTGGATG	TATTTCCTGT	TAAAGAAAAT .	AAAATGCAGA
	ATATTCAAAA	CGTCTGACCA	CCCTTCTAAG	AAAATGCATC	TCTGAGGTAT	TTTTCCTTAG	AAGTTATTOT	
	GAGAAGCTTG .	AACACAGCAA	AGCAAACAGG	ATGCAGAGTT	TAATCTGTGG	AAAGCTTAGG	GAAGAAAAGC	AAATCATTAA
65	AAATAGGTCT '	ICCTCTGAAG	ATTTTTAAAA (CGCAAAGAGG	GTGGAATAGC	AATGATAATA	AAAAAGCTGG	CATAGAGAGT
	GGCACAATTT	GCTGTGCCAC	TGAGCTGACT	GGATGTGTTC	TGAATTTCTA	GGCATTAGTG	TACCTTTCCA	CACGCATTCT
	CCCTTTAAAA	AAAATGCCCA	CACACTGAAT	ACTITITCA	TGCAATTTAA	AATAAGCGCA	CCATCTAGTT	TACAGAAATT
	CACTAGAAGT	TATTTATCCT	AAAATAGCAG	AGATCTAGAA	GAATTTTGAG	CTCTAGGACA	TTTTAGACAC	MCAGAAAGAA
	GAATCTGGAC	AAGTCTTGAC	CAGACATGAC	AGAATAGAAA		TATTTATCTC	TTTGAATAAA	ATTTTTACAA
70	TCTTACAGTG	GACAAGTTTG	TTATCTACAC	ATTGTGAAGC	ACATTGATTT	CTCCTCTGTA	GCCTTAGGAA	CATCTCACAC
	GTGACTGAGC	TGATTGAATG	ATCCGTGACC	GCTCTACTGG	GACCAGTAGT	AGAACTTTAC	TGGTGGAGAC	CLUCACAGA
	TTTGAGAGCA	GACTITGAAA	ATTACTAGAG	CTACACAGAT	ACTGTGTGGC	TAACTCGATT	ATGTTTAGAG	CLACIGOVOR
	CTATGCTGCT C	CTGCTGCAG	IGTAGCCAGG	ACGCACAGAG	AACATCTAAG	GCTCTTGAAT	GGGGCGATAG	GGACAGATTT
	CAGCAGCCAT	CTGACTTCAG	TGCTCATTTT	GATGCTTTCC	CTGCAGGGTG	CAGTGTGCAG	TGTGCAGTGT	GCAGTGGTGG
75 -	GAGGCTCACA	CAGGAATACT	TGCTTCTGTA	GCCCTAATTT	CCGGTTCAAA	CTCTGCATTC	ACCTTGACAG	ATTOTTTOOT

	TGGCCAAAAT TTAGTTAGGC TTCTGGGCTT TCTCTTATGC CCACCTGCAG ACTTTTTGGT AAAATCCAGT TTTAGTAAAG
	AGCTCTGCTA AGTCAGTTTA GCAAGAATCC CCACCTCAAA AGTCACTATC TCCCTCCCTG GTAGTGTCTG GCTTGTCTTC
	AGCGAGAATI CTATTAGGTT CTGTTAGATT AGAATCCTCC TTACCCTTGA TGCTTCCTCT TAGTATTTTT TCATCCACTG
	ACTECTIGAC CCACCITIGCT CCTCGGCTAT AAATTCCCAC TTGCCCATAC TCTGCAGTTA AGACTATTTT CTCCCCACTA
5	CTGCAAAATC CCATTGCCAT GGTCCCTATA CTATCTCAAT GGTAATGAAT AAAGTCTGCC TTACCATGCT TTAACAAGTA
	ACATTGAACC ATTTTTTTCT TTAACAATCT GCTGCACAAT GAGATTACTA AAACTTTATT CCATTTTTGCC ATGCTGGATG
	TCCTCAATGG AATGGCTCTT GTGAGCACCA AATCATTGTG AGAAGGAAAA CCCATCTCTT ACAGCCCCCT GTAACGTGAT
	GTATGTTACA TGTGATGTAT GTTACATAGT TTTTTTTCAT GTTGATCACT TTTTGCCCAT TTTCCTATAT CTTATCAGTT
	GGAAGACTGT GGAAGTTTGT AGTACTAAGC CACAAGATGA CTAAGAAGAG TTGAAAGGGC AAGTGGGGCT AAAAACAGAT
10	TITGTTTGAC TTACCCCACC ATTCCCCCTA TCATGGGGCT GAATCTGCCT GGAGGAAGGA GCATCTTTAT CTTTGTACTG
	TGAACCACAC AGTCTAGCAG CAGCACAGCC AAGGCACTTG GGGTTTCATG AGACTAAGTA CATGCAATTC TATTGTAAAG
	GCTTAAAATA TATACAACTG ACCCTTGAAC AACATGAATT TGAATTGCAT GGTCAGTTAT ACGCAGATTT TCTTCCACCT
	CTGCCACCCC TGAGACAGTA AGATCAATCA ATCCTCTTCC TCCTACTCCT CAGTCTACTC AAAGATACTT GAAGTCTACT
	TGAAGATGAC AAGCACAAAG ACATTTATGA TGATCCACTT CCACTTAGTG AATAGTAAAT ATGTTTTCTC TTCCTCCTAA
15	TTTTTTAACA CTTTCTTCTC TCTAGCTTAA TTTATTGTTA AGAATACAAT CTATAATACA TATGACATAC AAAATATGTC
	TTAGTTGACT GTTTATGTTA TCTGTAAGGC TTCAGGTCAA GAGTATGCTA TTAGTGGTTA AGTTTTCGAG GAGTCAAAAG
	GTGTATGTGG ACTTTCAACT GCAGGGGGGT GGGCACCCCT GCCCCCATGT TGTTCAAGGG TCAACTTTAC TGCCAAAGGC
	AAGCCTTTAC ATCCACTTTT TCCATCCCAT CAGTAAATGG AAAAAGATAG CTACAGTATC CCTGCGTCAA ATCTTTTTTT
	TTGCAGATCA CAAATTGGCC ACTCACCTTG CTCTGTGAGG GGTAAAATGC CCCACTTTCT TTAGTAATAT TTAAGTTAGA
20	TAATATTTAA GTTATAAAGT TGTTCTTTGT AATCGTTAAT TGTAATTTTT ACATAGTTTC TTTCAAACAG AAATAGCATT
	TTTGTTAGAT AACCTCCCGT ATAGATGATG AAACTCCTTT TAAGGGCTAT CTGAATTTTA ATTCCTTGAA AAGGCAGAAA
	TTGGATAGCT AGTAGTCATA AATGTACTGT GGCTTCCCCC AACCATCTGG GCTATATAGA AGCTGCATCC TTGGACTGCA
	GTAGAGGAGT CTTACAAAGC ACAGAGCAAC TTCTCTCCTG GGTTGCGCTA GTTATGATGG CAATTTTAAA TGTGTACTTT
	TACCCAAAGA AAATCCTTAT TATCAACAAT CACAATGCCA TCATAACCAT GGTATAAAAA ATTCAAAATG TCCCAGCTGA
25	AGTGGAGGCA AAGACTCAAG TTCATGGAGT CAGAGTTTCC TTGCTATTCC TCTTTTTCAA ATGACCATTT AGTAAGCACC
	TGAAGAAAAT ACTATGGACG GCATTGAAAA GTGAAGATAG GTTTAATCTT CTCGAAAATC TAATTCTCCA GATGAAACGC
	TGACACTTAT CCACCCCACA GACCCTATAG CAGATGTGTC ACTGGCCATC ACATTTGACA CAGAGAAGTC ATAACTCAGT
	CAGCACAGAG ACATTTCCAT GAGTTTCTGA ACCATGGACA GAACGTCGTC TGTGGGACAT GAAAACTGGA ACTTAGAGGA
	CAGGCACATC TGAGAAATGG GCAGTTTAAA GGCAGAACAT AGCACATATG TGACTGGGTT TTAGAAGCAA ATTTACAAGA
30	CGCACTCTTC TTCATCCTAA ATAATCTGCA ACCAAAGCTT CCAAAAAAGA CAATTTAGGA ATGCAGAGGT GAGGAGTAGG
	GAGGGGAATG GGATGAGAGA GAGTGGAGAT TAATGGTGGG CAGAGCGAGG TTTAGAACTT AGTGGTTTCT TCAGGTTCTG
	AACTGAAATT TGTATACTGT AAAGGCACAA ACACCATTTT TAACAAAAGT GAGCAGGACT TCCTATCTGG TTCAGAAAAT
	AGGTGAATAA ATAGTACGAA TTATTAAAAA TAATAATTIC CACTTATACA TAGGAAACTT GATAGGAACC ATGATAAATG
25	CITAACICTI AATCITCAAG GAACTCIGCI AGGGATATAA TATTATAAAT CITGTTITGC AGATGGAGAA ATTGAATTTI
35	AACCCAAGTT ATCATAACCC TTAAATGATT AAATGATACT GITACATGAG AAAGCIGCGT ATCIGITTCC TGGATTTGIA
	GCCATAATTT GTGTCTCAAG TCCCTTTTGC TGCCAGCTAT CTTGGGTAGG TGTGTTCCCT TTGGGCTGTT TGATACCCCC
	ACATITATET TITITTITE TETTTITTITG TIGAGAGAGT CTTTCCCTGT TGCCTAGGCT GGAGGGCAAT GGCGCGATCT
	CGGCTCACTG CAACCTCCGC CTCCTGGGTT CAAGTGCTTC TCACGATTCT CTTGTCCCAG CCTCTCTAAT AGCTCGGATT
40	ACTGGCATGC ACCACCACGC CCACCTAATT TTGTATTTTT AGTAGACAAG GGGTTTCTCC ATGTTGGTCA GGGTGGTCTC
40	AAACTCCTGA CCTCAGGTGA TCTGCCTGCC TTGGCCTCCC AAAGTGCTGG GATTACAGGT GTGAGCCACC ATGCCTGGCC
	CCAAAATTAT CTITAATGCC CCAAATTATC TAGTTCCCAT GACTGGGCTT CTGCTTTOAT CCTTTCTGCA CTTGCTGGAC CCTCTCCCTG GGAAATGAGA TTGTGTCCTG AGCCCCTAGT TAGAGGCTAT GTCTCTGCTG TTCCTGAATG GGCCTCCTGG
	ATGAGACCTC ATTAAAAGTC TAATTCTCTT GGAGAATTGA GAGATACCTA TTTGTCTCAA AATCATTGAA ACCAATTAAT GTATTATGAG CCTCTATCCA GTGATTTGTA CCTCAATTCC CCAATCCAGC TGTCAAGGCC AATTTGTTCT ACCTTACCTA
45	GTAGGTAAGT CTGGAATTGT AGCTGTGGCA TTTTCAGTAA TGGTACTCTA GGTTAGCAGT CCCCAACCTT TTTGGCACCA
73	GGGACCAGTT TTGTGGAAGA CAATTTTTCC ATGAAGGGCT GGGCAGGGGA GTGGTTTCAG GATGAAACTG TTCCACCTCA
	GATCATCAGG CATTAGATTC TCACAAGGAG TGCGCAAGCT AGATCCCTCA CACATGCAGT TCACAATAGG GTGTGCACTC
	CCATGAGAAT CTAACACCGC TGCTGATCTG ACAGGAGACA GAGCTCAGGC AGTAATACTC ATTTGCCTAC CGCTCACCTC
	CTGCCGTGCA GCTCAGTTCC TAACAGGCCA CGGACCAGTA CTGGTCCACG GCGCAGGCAT CAGGGACCCC TGTTGCTAGG
50	TATAAGCATC TGGCTGCTGC ATGTCTTCTG TGTAGCTACA TCTGTATGTG TATCTGATGA GATATAAATT ATTTGATTAT
-	AAATIACTIT CITCATATTA GAGTIGIGAA IGAGTATCAC ATATAATTAT ACATAAACTA GGAATATGCT TITTAATAAT
	GTATATAAGT AAGTTTCCTT AACTATGACT TTCATCTTAG CGTAGTAAGA GGGTGCTAAG AAATATTTGT GATGAAAATA
	GGCATTGGTA GAGTTGAGAC CACTGGGTGA TGAAAGAGTG TAAAGATTTT AAAGCCTTCA GATGCTGGTT CAAGGTGAGA
	AATGTGATTG GGAGCAAATC AATTAACTTC TTGAAGTCTT ATAGGGCAGT TATGAATACT TAATGTTAAC ATATGTAAAG
55	CTCTTCTGCC CTGTATACAG TAAATGCTAG TTAGCTATTA TGATCACTAC TAAAATGGGG ATGACATAAA CCTCATAAGG
	TITTAAGTAT TATGCAAGAT ACTATACAAA GTCCAGTAAA TATCACATTC AATTGAATCC ATGATGTCCG ATTATTITTAG
	CTACTTCCAA GAGAGAAAAA AATGCTGTCA GTTTTACTGT TCTTATAGAG AGCAAGGCAG ATCCCAATTC CCAATGTGGT
	AACGTGAAAA TTTTTGCATT TGAATCAACA AAACACTTTC TCCTTTCTTT CCTACTATTT AACAACTGGT AAGTCTATAC
	TCCCCCAAAT CTGGAATTCT CCTTTCTTAT TCTTTTTCCT CCTACCAAGA CCGCAGGATC TTTTACTTGG CTATAAGGGG
60	TAAACCTCAA GTAGTACAAG TICTCTGTAT TACTITTATA CICTGTCACA GATTCCCTTT GTITCCTCAT CICCATGTGA
	ATTTAGTTAA ATTCTCAGCA TTCTGATCCT TACTATACAA GGTAAATGAA TATAAAAACA AAACGAAACA AAAACCTCTT
	CCTATTTACA TAAGGCCCCA ACCTAATATT TAGTGATATA TATTAATGTG AACAAGGAAC TAACGAAGAC TGGGAAGAAA
	TTCACAGACT TGAGAGAAGA AATGGCAGGA TTTCCTGGGA ACAATTTCAT GTAACGTCAA AGGTGGTAAA AGGTCAAATA
	GAATGAAGAT GGAGAATACC GGATTTTCTT ACAAAATGAT TTCCCAGGAG ATCTCATCAA ATGCACGAGG ATACCTTCTC
65	AGTTTCACCT AGTGAGTAAA AGACTGGTAA CATAGCTCAC TTACAATTTG GATAAACAAA ACTAAACAAA CAACATCAAA
	ATTTCAGAAA AAATAATAGC AAAACAGAAA TCAAACACTC AAATTTTTGG TCCTTCTGTT TATTTCATTT TGGATACTCA
	GTGAATGTTA ATTAACCAGG AAACTTAAAA GTTATTTCAA TTATGAACCT CTTCAATCCT TCATCAATTA TTTTGAGTAT
	TCTGGTCTTA AAAACATCTC TTTCTTCTAC AAACTTCTGA AAGAGATGAA CACCTCCACC TACACCAAAA TAATGTGCTT
	TGCTGGCCAA AAGTACACGT CCATTTTTAC TTAACAGTCT AAGGAAAGTC TGGTGCAAAT TACTATAATA ATCTGGGTTG
70	TAAATGGITT CTGAGGTGAG AATGAGATCA TATTITACAA AAAGTTTTTC ACTACTTAGT ACAAGCTTAC AAAACTCAGA
	CCACTCACCA GAAAAAAATC GGCATITATA TAGTTGTGTT ACTTTTGGTT TCCTGCATCT TTTCACATCT GGCTCATTTA
	CATCATTTTC TTCATCTTCC AAAGTGGAGT TAGCTACTAC ATTAGGTAAG GTTACTTCAT CAATCACCAT ACTGTTATAA
	TCTTGAAAGT GAATTTCTTT GGACCCTCCC TTGAATGCAG TTATACCTAG TAAACCTGAT CCACAACCAA GATCCAAGAC
7.5	TTITITCCCA GCAAATTTCA CTITGGCCTT TGTGAAATAA GCCAGGAGGT CAAAGGTACA TTCCCAGATT TTTAAGCCTC
75	CCTCATAAAC ACCTGTAATC AGATCAGAGT GAGAAGAAAA GCTTTTTGAA ACTATGTTTT CTCCAGGGAA GTTCTCTTTC

	AACAAGATGG	TTTTCACTAC	TGATAACTTA	A C A T G C T G G A	A ACCTGGTA A	TGTTTCTATG	ACTTATTT	CTAACATCTT
						GTTTTCCATG		
						TCCATTGACT		
						TTTTTGACTT		
5						CCAGATGGTC		
,						CAACTTCTGG		
						AGCAGCTTAT		
						TCTGGAAAG		
						AACAGCCACC		
10						GATTTGGACA		
10						GCAACCACCA		
						AGCTGTCTTG		
						GCAGTATTTT		
						CTTCACTCCA		
15						TAATTCGGTG		
13						GAGAATCTTC		
						CTTTATACAA		
						CACGCTGCAA		
20						ACCTCCCCAT		
20						CTGAAAAAGC		
						CCCGACTTTC		
						GGAGAGCGCG		
						CGAAAGTATG GCCGCCGGGA		
25								
23						GGCGGGTCGC		
						TTTTCTTTGT		
						GCCCTGGAAA		
						TTTTTCTGTA		
30						GGTATGACGA TGAATATGAA		
30								
						AGTAAATAAA TCCTCTCACC		
						AGCGCCTTCT		
						CTTTCATGGT		
35						AAAGTAACCT		
55								
						TTCACCTAGG TCAAGGAGTT		
						GACATGGTGT		
						TTAAGTTGAA		
40						CTTCATCTGA		
40						TTCTGATTCC		
						CCTCTCACTT		
						AGATCTCGTC		
						GTTAATTAAC		
45						CAGCCTTTTG		
73						AGGCAGTTCC		
						GAAATGCTCT		
						CTTCACAGCG		
						TTITAAAAAT		
50						AATGAAAAAT		
50						CAGGCCTTAC		
						TTTTCATGAG		
						AAGATTTCGG		
						ACGGAGTCTC		
55						TTCCTCAGCC		
00						GTTTCACCAT		
						ACAGGCGTGA		
						AGTAAAACAT		
	ATTATTCTTG	ATGGTGTATA	TGAAGAATTT	ATTOTOGTOT	ATTTGTAAGC	TGCTATGTGC	AGAAGAATTT	CACTCAAATA
60						GAGTGACTTA		
						CTGGGCATGG		
	AGCTCCTTGA	GAGGCTGGTA	TGGGAGGATC	ACTITAGCCC	AGGAGCTTGA	GGCTGCAGTG	AGGTGTGATC	ATGTCACCGC
						GACGGAGTCT		
						TCCTGCCTCA		
65						GACGGGTTCT		
						GGATTACAGG		
	CCCGAGCGAG	ACCCTCTCTC	TAAAAAAAA	TAAATAAATA	AATCATAAAC	CTGTGGATTA	TTGTAGCATT	GTTTCTCATC
	TGTCAAAAAT	ATTTCATGAC	TATGCATAGT	TTGAAAAGCC	AAGTTTGTCC	CTGGGCAATT	TTCAAAATAT	TTCTTTAATC
						ATTAAGCCAG		
70						GGTTTGTTCT		
	CTATGATACT	AGTATCTTCC	TTAATTATCC	TACTCATTGT	CTCAACATTC	TGACAGTTGG	ATTGAGCATA	TTCGTAAGTA
	AAATTGTTTT	AACTGTATGA	TGTACTTTGA	TOTTAAGGTC	CGAGTCCCCA	CATACCTCGG	TAGATGTGTT	CTTACAGTTT
						TCAGTTACTT		
						GTTTTGTTGA		
75	TGTAAATATT	AAACGTTAGT	TGTTACGATT	AGACCTATAT	AAAACATGAT	ATGCAGTCTA	CTGAATAGCT	ATCAGCCTCT

AACATGTTTA GTGTCATTTA GAAAATGCTT TCTAAATTGC CAAAAGCTGA TTGTCTAGGT GATAACAAAT TTACCATTTG CAGTGGCGTG ATCTTTGCTC ACTGCAACCT CCACCTTCCA GGTTCAGGTG ATTCTCCTGC CTCAGTCTCC CAAGTAGCTG GGATTACAGG CATGCTTCAC CACGCCTGGC TAATTTTTGT ATTTTTAGTA GAGATGGGGT TTCACCATGT TGGCCAGGCT GCCTGGGAGG CGGAGGTTGC ATTGAGTCAA GATCGTGCCA TTGCACTCCA GCCTGGGCAA TAAGAGCGAT GCTCCGTCTC AAAAAAAAA AAAAAAAAA AAGAACTTAT ATTTTCAGAT TGTGTGGTTC CTTTACTAAC TGAATTTAAA TTATTTGTAG TCAATTITAA ATGCTCTTGT ATTTTAAAGC CACTGTACTC CAGCCTGGGT GACAGAGTGA AACCCTTAAT TCAAAAAAAA AAAAAAAAA AAGAAAAGCT GGAATATTGG CAAAATCAAG TAACTAAGAG AAAACATTAA ATTCACAGAA TACATTATTA AAAAAAAAA AAGAAAAGCT GGAATATIGG CAAAAICAAG TAACTAAGAG AAAACATIAA ATICACAGAA TACATIATIA
CATTITAGAT ATATATGGTA TATGITTTC CTGAAAAGCA CAAGCATACC TTTTTTGTTT TAAATGGAG GAACTAAAGA
TACTITGGTG CCAAAATGAA ACATTATTTG TAATTAATCT CTTATTGAAA TGGGTTTCTA ACTTTAGCTT TGAATCGTAA
TCTTTCAAAT TTCTTGTACT CATAGCTCACT TGATGATTCT CTTATCTGAAA TATTTCTTAG AATTTGTTCT TGACCACCAG
AAAAAGATTC AACTGTTACA TAGATGAAAA TGGATGTTGA GTGTTAACAG GCCTATGGGA AACAGTATTT TCTTTAGCTA
CATTGTATTG TTGACTGTGT TGCTATTCTT ATAATGTTTA GGTCATTTAA ATTGTTAGAA AGATCCAAGT ATTAAGATCT
AGGGTGGCTA ACTTTTCACA GACAAAAAGC TTGTTTGTAA GGTCATTTAC TATACCCTTA ATTCAGGAAG GTTAGCTTGA ATTIGGOTCAA AAGGAAACTG GTTAGAAAAT AAGTGAGTAG TGAATAGGCG ATTCAGTGCA AATTCCTTCC AGAAAATACC
CTTGTAAATG ACTGTATGAA TGTGGATTCT TCAAGACAGT CAAATTTATT GTGCGAAAGT AATACTTTTA TTTTTTGCAT CTIGTAAATG ACTGTATGAA TGTGGATTCT TCAAGACAGT CAAATTTATT GTGCGAAAGT AATACTTTTA TTTTTTGCAT
CTCTAAAACA TGAACTTTGA GTGATTTTT AAAAAAATTG ATGCTATTAA ATAGATTCAA ACCATAGAAA TGGAAAATAA
ATTTCTGTTT GGGGCTTTTG GGGGGATAT GTTGTAAAAA TACCTTTTCT CTGTATTTTG TGCTTAATTA GGTACAATTG
TTAAGCTAGA TGATAGCCTG TGGATGTTAC TAGTGGCAAAA TCAAATTATC GTATTGTGTT TTCTCTGTAA AGTTTTGTCT
TGTCTTTTCT AGTGATTTCT CTTATTCCTG TTTATTACTT GATTTGTTTT TACAGACTGT GAAATTATC GATGACATGA
TGTATGAATT AACCAGTCAA GCCAGAGGAC TGTCAAGCCA AAATTTGGAA ATCCAGACCA CTCTAAGGAA TATTTTACAA
GTAAGTCAAA TGTATTAGAA AGCAGGAGAG AGAGGGAGCT TAAAGAATGT CAAAATTTTT ATACTGATAC TGATTAGCTA
TGTATTCTTA TGTAATGGCC TAATGTTGGA ATTAAAATTTA TAGAATTAAA GACGTGAATA TAGAAACATG AATTCTGAAT
AATAAACTCT TATAAGAAGA GAAGTCATCA AGCTAGCTGA CCCTACCTGT ATTTTCAAG ATATGTTGGG ACCACTGCC
ATGTGTTTTG AAGTTTGTGT TAGTATTCTA AATGGCTAGA CAGTTGTTCC AGGTATTTGTA GTTCTGATAG ACTAAAGTTC ATGTGTTTTG AAGTTTGTGT TAGTATTCTA AATGGCTAGA CAGTTGTTCC AGTATTTGTA GTTCTGATAG ACTAAAGTTC
TGTGAAAAGA GGAAGAGACT GTGTTTTGTT CATTGCTGTA TTTGTAGCAC CCAGCATGCT GACTAATACC TTTTCAGTGC
ACAAAAAATA TATTCTAAGT GAAATTTCCT TCCTTATTCA CAGACAATGG TGCAGCTCTT AGGAGCTCTC ACAGGATGTG
TTCAGCATAT CTGTGCCACA CAGGAATCCA TCATTTTGGA AAATATTCAG AGTCTCCCCT CCTCAGTCCT TCATATAATT AAAAGCACAT TIGTGCATTG TAAGGTGAGT AAAGGTCTAA TTATACTTTG AATGGTATAT AATCAATGTG CATAGGGGCT GAGTAAAATA ATGTTTGTAT AAGATTTTAC ATTTTAGTCT ATATTATTGA AATAAACTTT TCCATAGAAT AAAGAACATG TAAGTAAATA ATTGTTGCAA AAAAAGTGGT TTTAAGGAAG TCATTAAAAG TGGCTTTTTG GGGTTTTTTA GTTTTATCTT ATTTCCCCTC TATAAAGAAA GAAGTTTTAA GAATTGTGT TGAGACAGAC ACAGGGATCC TGAAATAGTT ATGTCATGTT GCATTGACCA ATATTCAATT ACCATTATGA TTAGATGTCA GAACTTCCTT TTATAAAGGA AAGTTAATCC TTATTTAGTC

	GTGACTTCAG	TGACTTCATT	CACATCTGGC	TGTTGGCAGA	GGCAGAAGTA	CTTGAGAAAG	CCATGTGCAT	CATCCAGCAG
	GTTCACCCTA	TCTCAGATAC	CTGATGCCAG	TGGTTTCAGG	GTTTCTAAGA	GTAGCAAAAG	TGTGAGCAGG	TCGCTGTGTG
	CTAGCACTIT	TCAAGTTTCT	GCTTGCCTTA	ATTTTATTAT	TGTCCCCCGG	GCCACAGCAG	GTCATAGCGT	TTAGCCCAGA
						TTATAAATAA		
5						TTTCTTTCCT		
,								
						TTTTATTCCA		
	TTAGGTCATC	TGGTAGGTAT	AAACTTCAGA	AGTTAATATT	CAATATTTAT	AAAAACCATT	AACAAGTGTG	ACACTTAAAT
	AGTTTAAATA	ATTCTTTTGA	CACAACTGTT	TCCAAGTTGT	GTTACGTATT	TTAATTCAAT	CAAATGTTGA	AATTGTTCAG
	TAGATAGTTT	TAATTATAGG	AGAAACTCAC	CCCCATGACA	TTTGGATGT	TTAAAAGTTC	TOTTATOTT	CTTTGCAGTT
10						ATTTCATGCC		
						TCCCCAATCT		
						TCTGATAATC		
						ATGTTCTTCC		
	AATAATGGGC	CATGGGCCAG	ACTAGAACT	r aaccacttii	CTTCTGCTAC	TGTTGTTTAA	CCAGCTATCA	AGTATCCTAT
15	TTCTAGGATT	AGATAAATTG	ATAACTATAA	TTAAAACTGA	ATATAATCTT	TTCATTAGGT	ACTITTAAGT	TGTTCACACT
						AGGGTCACCA		
						TAAGAATATC		
						CCAGGACATT		
	AGAGTGTTGC	CTGGGAGCTG	TATCACATGI	GCTTAAATCC	ATTCTTGAAA	TCATTTACTC	CTTCTGAGCC	CTTGGGCTAT
20	TTGGTTAATT	TCTCTGAACG	TTAGTTTGCT	CATCTGAAAA	TGGAAATAAT	AATAGCAACT	TCTTGACAGG	GTTATAGTGA
	GAATTGAGTT	CATCACTGTG	AAATGCTTAG	AAATGTGCAT	GACACATAGT	TAATACTCAA	GGAATTAGCC	ACATCACTAT
						CCCAGCAGAA		
						ACAACCTAAT		
20						ACCAAACTCT		
25						GCTAACTCCT		
						AAGATTAAGT		
	AAGAATAAGT	TAGATTAGGT	CTCTCTATTG	TAGCACCTTA	GACTCTGTCA	TTTGACAAAT	CACAGCCCTA	TTATTATT
	CTTAAAATTA	TTTAACATTC	TCTCTCATGC	TAGACCACAA	GTTTCATGCA	GGTAAGGCGG	AGATTGTGTC	CATTTGTTTG
						CAATTAATAT		
30	GCAACTTATT	TAAACAAATA	TAACTCCTTC	AGAGGTAAAC	TOCCCOACATO	TTAGTTATAT	TATOTOATAT	ATCATCOTTT
50	TTCATTCTTT	TTTTAAATOT	TOTACIOCITO	ACATOTICATA	1000CACA1C	ACTELOTIATAL	TAIGIGAIAI	AIGAIGCIII
						AGTTACTTGA		
						ATAAAAAGCC		
						GTTAGCTGAG		
	ACAGGTAAAA	TTTGGGCTAA	TAGCATTTTA	. AACAGCAACT	CTTATTTTCT	TTGGCAGTTA	GTAAATCTCA	TTTGAATGTC
35						TTTTGATCTG		
••						CCTCTGGGGT		
						CTGCATGAGA		
	ATTTCTATAL	CATCTCATAT	ACCTCCLATO	LAGARICCII	TOTALICITII	CIGCAIGAGA	ACAAAAATIC	THIGHCAL
						CCAACGCATT		
						CATACATTTG		
40	AGTGTTGAAT	TGGTATCCCA	TTTATGAAAC	ATTATATTCT	AAAAATTTGT	AGTACGATTA	TTGGGAATTA	TAACTCATTT
	TCCTGTAACA	CTGTTATACA	TAGTACCTTT	TGCTTTCAGA	CTAGCCCTCA	ATTTTATTTA	ACTATAGTAG	TCCTAAATTA
	TAAGATTAAT	AGTACTCAGG	ACCTAACAGT	TATATGTCAT	TTGTTTTTT	TTTTTTTGAG	ATGGCGTCTC	ACTCTGTCAC
						ACGGGTTCAA		
						TTTAGTAGAG		
45								
43						CCCAAAGTGC		
	ACCGCGCCCA	GCCTATATGT	AATAATITTA	ATGGGACCAT	GAATTGAATA	TTTCTTCCTT	GAATAGCAAT	GACATAGCCC
						CTCTTCCCTG		
	AAGTGTAGGG	GTTCATCCAA	GTCCTAAAAC	TGGTAGCAAC	TCCTAGGGCA	GGGCTGATCT	GGAAGGACAG	ACCCTAGGGG
						AGTAGTGTTA		
50						TCCTTTTTCC		
	TTCATTCGTG	CATCCTTTCT	GATTCCTCTT	ACCTTGCTAA	AAGGAGAAGT	TTGTTTGGGT	ATCCTATATC	AATGGCAGGA
						AACCTCCTCC		
						ACAGAGATAC		
	AGAAAGICIA	AACAACAGIA	TAGICIATAG	TGGCAAGAGA	GAGTATGGGG	GCTGCTTAGC	CAGGGTGGCT	GTACATAAAG
55	TATATCTTCA	GTTTATATAA	ACTGCTTATA	GATGGAAATC	AGAAAATTTA	AATTCTCTTA	ACTGTCCAAG	AAAATTCTCA
	TTTTTTCAAA	TTTGGGACTG	ATAAATGTGA	CCAGTTCTGC	TTACTGTCCA	TTGCCTGAAA	TGGAGCTTTG	AGGTGGACTG
	TATAATTTCT	TCAATCTTAA	CTCCAAATTC	TGATCAGCGA	CGCCCTCTGC	TGTTCACTAT	TAATATTAT	TTACCAATCA
						ATTTAGGCTG		
	CTCCCTAACC	GATTATAAAT	ATTAGAAATT	TATCTCTCAC	AGTTCTGGAA	GCTGGGAAGC	CCAATATCAA	CCCACCACTA
60	GATTTGGTGT	CTAACGAGGG	TOTOCCOTCT	CCTTCAAAAA	TOCCCCCCTTC	TTGCTGCATC	CTCACTTACT	COLACCACIA
00	ACACACOTOC	CIAACGAGGG	TTTTATA	CCTTCXXXXX	1GGCCCC11G	TIGCIOCATO	CICACITAGI	GCAAGGGGCA
	AGACAGCICC	CITCAACCIC	IIIIAIAAGG	GCACTIATGE	CATICATGAG	GGCAGAGCCC	TCATGACTTA	ATCACITCCC
	CAAAGGCCCCC	ACCICITAAT	AGTATCACAT	TGGGTGTTAG	GTGTCTGGGA	GGACACCAAT	CTTCAAGCCA	TATCATCTCA
	CTTGGAAAAA	AGTCAAAATA	AAACCAGTAG	3 ATTTAATTAA	TATTACACTA	TTTATAGAAG	CATGTGATGT	ATCATTCCTT
	GTATTAATIT	CCTGGGGTTG	CCGTAACAAG	TTACCACAAA	CTAGGTGGCT	TAAAACAATA	GAATTTTATT	CTCTCACATT
65	TCTAGAGGCA	GAAGTTCACA	GTGTGTCAAT	AGGGCCATGT	TCTCTGGAAG	GCTTTAGGGG	AGAATATATT	TCATATCTTT
	CTCTTAGCTT	CTCGGTGTCA	CTGGCAATCC	TTAGCTTACT	TIGGCTTTCT	GTGTCTTCAC	ATCATOTOM	TATAAGAACA
	CCACTGATAG	TGATTAAGGG	CATACCARIOC	TITLOUITACE	COTCYTOTT	ACTAATTATG	TIONICITIE	TATAROANCA
	ALATALOGGO	YOUTIVUOUS	OTATTOON	ADIATION	CUICAICIIA	DIAIIAAIJA	TUTTUAATAA	CCCIAITICC
	AAATAAUUUU	ACATICIGAA	GIAIIGGGAG	TIAGAACTTA	AAGCITITIG	GGAGGGACAC	AGTICAACCC	ATAACAACCC
70	CIAAAATCGA	IATTIATICT	CAATTAAGTC	ITGAAATTGG	TITCAAAAAG	AGAATATTCT	ATTAGAGTTT	TTAATGTATA
70	GITTTAACAT	ATAGTTCTTT	AGCCCCCAAT	TTTTTTTTT	TTTTTTTTTT	TTTTTTTTT	TTTTTGAGAC	GGAGTCTCGC
	TCTGTCGCCC	AGGCCGGACT	GCGGACTGCA	GTGGCGCAAT	CTCGGCTCAC	TGCAAGCTCC	GCTTCCCGGG	TTCACGCCAT
	TCCCCTGCCT	CAGCCTCCCG	AGTAGCTGGG	ACTACAGGCG	CCTGCCACCG	CGCCCGGCTA	ATTTTTTTTT	ATTTTTAGTA
	GAGACGGGGT	TTCACCTTGT	TAGCCAGGAT	GGTCTCGATC	TCCTGACCTC	ATGATCCACC	CCCCTCCCCC	TCCCAAAGTG
	CTGGGATTAC	AGGCGTGAGC	CACCGCGCCC	GGCCTGCCCC	CAATTATTTA	GTTTTTCTAT	AAACAGGGAA	ATTTATTOT
75	GTGGCCCTTA	GAACTAATTT	AATTTOCACT	CTAATTOOTA	CALVACAALY	TATAATGCTT	TTACA LATTE	WITTUILIGI
	CIGGOCCIIA	A'BIOTURI I I	AMI I CONCI	CIANTICCIA	CHAIGHIA	INIUNIUCII	IIAGAAAIII	GIATIATICA

GAAAATAAAC ATATACTATT GTATCTGTTG CCTACACTTA GATTTTATTG CCTGCTATAT TTAAATTTTA TTAGTATTTT AATTGTTTA TTAAAGAAAG AATGTGCCTG TAATCTCAGC ACTTTTGAGA GGCCAAGGCA GAAGGATTGC TTGAGCCCAG GAGTITGAGA CCAGACTGAG CAACACAGGG AGACCCCCAT CTCTACAAAA AATAAAAAA TTCTCCAGGC CTCATGGCAC AGATAGAAAC AAAGAAAGAA AGAAAGAATG GTGCTCATAT TTTAAAGCAT TGAAAAATGG TCTTCCTTGC TTATATTACC CACACCTTCT TTGTTGGCAT TAAGATGCAA ACTTTGTTTT AAACAGTTGA GTAAATCAAA GATGGGACTG TTAAGTTATT TGTGTTATTT ACCTGCTTTT TGAAAATGTA AAAATAAAAC TCTAGGTTTA ATTAGTAGTA TGCTATTTAG TAATGAAGTA AAGCTAGAGG CTTCGAACAA ATCTTGTGTA ATTTCCTCTT GAATGAGAGA GAAAATTTAA AGTAAGCAAA CAAATAAGTT GTGTGTCACC ACTCATTCAG TCATTTAACA AGTATTTCCA GAGTACTTAT TCTGTGCCAG GAAATGTTGT AGGTGCCCTC AACAACTTAG AGTCTAGCCT GAGACACAAG TAAGTAGGTA ATTATTATAG AATGGTATGA TCTTTGGAGG ACTGGGTATT GGCTGGCTCA TGGGAGTACA AGATAGGTAC CCAGTGATGA AGTCAGGAAA GGTTTCTTAT GGTGATATGA TGACGTCATT GAGGTCATGC CACTGCACTC CAGCCTGGGC AACAGAGTGA GACTCCATCT CAAAAAAAAA AAAAATGATC AAAGAAAGGT GAATTTICAT CTACCCTATT TCTGCTGAGG AAAATGGACT ATTTTCAAAT ATTTTTAATA AGGGTCAAAA TGAGGGATC
GCCACCATGG AAACCCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCATGAAAA TGAGGGATC
ATCAACCCAC AATCTAAGCA ATCATGTGGA TGATTTCACC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACTC
ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACTAT TGCCCACAGC AGACTAAAAT TACTTCAGCT
TTCAAATACA TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCACACTCTGC TCAGGATCAT TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA TTGATCTCCC TATCAATGTA TTTAAGCTGC TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC AAGCTGTTCC CCTTTTTGCA GAAGTCCTCG GTGGGGATCA CCGTCCTCAA CCTCTGCGCT CTTAGTGTTG ACAGGTACAG AGCAGTTGCC TCCTGGAGTC GTGTTCAGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCCTCC ATCTGGATCC TGTCCTTTAT CCTGGCCATT CCTGAAGCGA TTGGCTTCGT CATGGTACCC TTTGAATATA GGGGTGGACA GCATAAAACC TGTATGCTCA ATGCCACATC AAAATTCATG GAGTTCTACC AAGATGTAAA GGACTGGTGG CTCTTCGGGT TCTATTTCTG TATGCCCTTG GTGTGCACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTTGAACAG AAGGAATGGC AGCTTGAGAA TITGCCCTCAG TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TICTGCTTGG TTGTAATTTT TGCTCTTTGC
TGGTTCCCTC TTCATTTAAG CCGTATATTG AAGAAAACTG TGTATAACGA GATGGACAAG AACCGATGTG
TTTCTTACTG CTCATGGATT ACATCGGTAT TAACTTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGTATTTTG
TGAGCAAGAA ATTTAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG GAACAAGCAT CCAGTGGAAG AACCACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG CATGAACTGA CCACCCTTAG AAGCACTCCT-3' (FRAG. NO: 1738) (SEQ ID NO:12378) 5'-GCCACCATGG AAACCCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG ATACAGCACA AATCTAAGCA ATCATGTGGA TGATTTCACC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACTC ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACTAT TGCCCACAGC AGACTAAAAT TACTTCAGCT TTCAAATACA TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGGAAT GGTGGGGAAT GCAACTCTGC TCAGGATCAT TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA
TTGATCTCCC TATCAATGTA TTTAAGCTGC TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTCTTTGC
AAGCTGTTCC CCTTTTTGCA GAAGTCCTCG GTGGGGATCA CCGTCCTCAA CCTCTGCGCT CTTAGTGTTG ACAGGTACAG AGCAGTTGCC TCCTGGAGTC GTGTTCAGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCCTCC ATCTGGATCC TGTCCTTTAT CCTGGCCATT CCTGAAGCGA TTGGCTTCGT CATGGTACCC TTTGAATATA GGGGTGGACA GCATAAAACC TGTATGCTCA ATGCCACATC AAAATTCATG GAGTTCTACC AAGATGTAAA GGACTGGTGG CTCTTCGGGT TCTATTTCTG TATGCCCTTG GTGTGCACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTTGAACAG AAGGAATGGC AGCTTGAGAA TTGCCCTCAG TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TTCTGCTTTGG TTGTAATTTT TGCTCTTTGC
TGGTTCCCTC TTCATTTAAG CCGTATATTG AAGAAAACTG TGTATAACGA GATGGACAAG AACCGATGTG AATTACTTAG TTTCTTACTG CTCATGGATT ACATCGGTAT TAACTTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGTATTTTG
TGAGCAAGAA ATTTAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG GAACAAGCAT CCAGTGGAAG AACCACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG CATGAACTGA CCACCCTTAG AAGCACTCCT-3'(FRAG.NO:_)(SEQ ID NO:11850) 5'-GATCAAAATT TTTACCTATT ATGCATTTGA TATATAAATA AGTATATAAA TGCACACACA GACACAGCAA TGATGGTGAA CAGTCTTCAT ACAATTATAT GGATGAATCT CATAAAATGC TGAGTTAAAG AAATCAGACC AAAGAACATA TACTGAAAGA TTCTCTCTAT ATACAAAGTT CAAAAATAGG TGGACCAATT CATGGTGGTG TTAGAAATCA GAAGAGGGC TACCTTTGTG GGGAGGGGAC AGTTTAATGC CCAGAAGCGG TAAATAAGGA ATCCTCTGGG GAGTGGTAAT GATCTGGATG CTGGCTACAG GATGIGITGG TIGTAAAAAT GCATTITITT ATATCTAGCT TITTCCATGT GTATATTATA CITCAAAGAA GTICAGTTAA
TAATTICICA TGICACTGTA GAGTAGCTCA GTIAGCCCCA GCAAGCCTCT GGCTIAATCT TGTTTTACCT TAAGCCATCA
GTCATTTACA AGTAGGAAAA TICACAGGGA AAGTTAGAGT ATAAAATCCA GAATGAAGGT TIACTGGGTA AGAGTCTCTC
CATTITCCAA AGCCCGTITA TITCTTGATT CCAGTTCTTA AGAAGTCTCA GCATTGTGTC TITTTCATGT ATCTTACAAG
AAGACAGCAT GTGCTTCTAA CACCTGATAC ATTGTATCTA CCAGCACTTG GTAAACAGAA AAGAACCACA TITTTCTTGT AGGAGAAATT TGGTGCCTAT TTCCTACCAG GCACCAATAA GTGGGACCAA TAGGTGGGAT TAAAGATACA GTAGAAAGTA TTTAAAACTT GCCAGGGGC AATAGTCTGA AAATAAGTAA ATTGGTGCTA TAGAATGGAA GTTACAGGCT TCTTTCTTTT
TTCCCACAAG ATCTGCTCCT TGAGCCCCTA GAGACTTTTC TGTCTGTTAC TGTTTCTTCA TTCCTCATCT GCAGAGCCAG
CCCTGAGAAG TGCAGACCAA AGCCAGGGAA GGCTCTGCAA AGATGTACAA ATGGAAGTCA CCTTAATAAC CTCTGACTGC TGCGCATAAT ACATTTCACT CAAAAGAGGG GTTAAACAAT GGAACAGAAT ACAGAGGCCA GAAATAATGC TGAACACTGA ATGCATCTGA CAAAGGTCTA ATATCCAGAA TCTATAAGGA ATTTAAACAA ATTTACAAGC AAAAAAATGA CCTCATTAAA

	AAGTGGGCAA AGGACATGAA CAGATGCTTT TCAAAAATAAG ACATTCACAC ATCCAACAAC CATATGAAAA GATGTTTAAC	:
	ATCACTAATC ATTAGAGGAA TACAAATCAA AAGCATAATA AGATACCATC TAATACCAGT AGGAATGACT ACTATTAAAA	
	AGTCAGACAA TAACAGATGC TGGTGAAGGT TGTGGAGAAA AGGGAATGTT TATGCACTGC TAGTGGGAAT GTAAACTAGT	
	TCAGCCATTG TGGAAGAGAG TGTGGTGATT CCTCAAAGAA TGTAAAACCG AACTGCCTTT CAATCCAGCA ATCCCATTAT	
5	TGGATATACA CCAAAAGGAA TAGAAATTGT TTTACCGTAA AGGCGCATGC ATGCATATGT TCATTACAGC ACTATTTACCG	ì
	ATAGCAAAGA CATGGAATCG TCTAAATGCC CATCAGTGGT AGACTAGCTA AAAAAAAAA AATGTGGTAC ATATACATCA	
	CAGAATAGTA TGCAGCCATA AAAATGAACA AGATCATCAT GTCCTTTGCA GCAACATGGA TGTAGTTGGA GGCCATTATC	:
	CTAAGCAAAT TAATGCAGGA ACAGAAAGCC AAATACCACA TGTTCTCATT TATAAGTGAC AGCTAAATAT TGAGTACACA	
	TGGACACAAA GAAGGGAACA ATAGACATGG GACCTACTTG AGAATAGAGG GTGGGAGGAG GGTGAGGATC AAAAAGTACC	
10	CATAGGACAC TGTGCTTATT ACCTGGGTGA TGAAATAATT TGCACACCAA ACCCCTGTGA CACACAATTT ACCTATATAG	÷
	AAAACCTGTG CATGTACCCC TGAACCTAAA AGTTAATGGT GGGGGGGTGG GGTTAAGCTA CTTTGTGGTA TAAATCTGAG	ì
	CATTCATATT AAAATAAAAT ATITACCTCA TTAGAGTAAT TAACATTTAT TAAGCAAAGA GCCAAGTACC TTACACACAT	2
	GATGTTTAAT CTCACAATGA TCTTTAATCT CATAACAACC GTCCATTGTA TGTACATATG TGGAAATTGA GCCTTGGAGA	L
	GATTAAATGC ATGGGGCATG CCATTTGACT AGAAACTGGA AGCATCAGGA TTTAAACTCA GTTCTGAATG GTTTTGTAGG	}
15	CTTTGTTTT TCCACATTAT AGCATGGCCT GCCATGAAGA ACAGGTCCTT TCTGGTGTTT GTCTTGTTTG GTTTAAGTGA	L
	AGCAAATATT TATTTAAATA TTCAAGATAT GCTGTTAAAT TTTTACTCAA AAATTTGAGT ACAGTATGGA TCTTCTGAAG	j
	CCAAATAACT CTTATTCAAT GCTTAGTTGA GAAATTTTAT GGAGTAGTTC TCAATTTTTA TGTAGTTCCA CTGCAAAGGT	7
	AAGTCTTATG GAAAGATTCA CTGTAATTTT TTTTCCTCAT TTGGACATCA GCTTTTTCTT TTCCTCAGAC CCGCTGAAAG	
	ATAATTITTA AAATAAAAAC CTTGTTTTTA TATCAAGTGG GGACATTTTT TCCAAATGAA AACCGTGTAT TCATTTTATA	L
20	TGATAAAATC AATGTTATTA TTTTTAAAAT TTTGATTTAA AAATCATTAA AAATAAATTT TCAGATATTA CCTGAAATTC	:
	TACCATCCAG AGATAATAGT GCTTAAAGAT TTGATATATA GACACACAC CATATATACA TATATATCAT CCTAAACTTC	:
	TTTGTATAAA TGTATATAAA GTTTTTAATA AAAACTAGGA GATTAATGCC CTTTGAATGA AAATAAATAC AATGTGTATG	ì
	CTTTAACATC TTGCCTTTAC TTTATAACAT TTATCACAGC AGTCATGAGA TAATGATTTA CATGGTCATT GTTAGTAAGC	;
	TAATAGCTAA GTGCATGAAC TCTGGAGCTA GCCTCCCTGG ATTTTAATCC CAGATCTGTC ACTGACCAGC TGAGCAATAC	:
25	TAGGTAAATT GCTCTTGTTC CTTAGTTTCT TCATCTGTAA AATAGAGATA AAAATAATAT CCACCTCATA GGATTGGTGT	•
	GAGCATTAAA TGAGCATACG TATGTAGGCC ACTTAACAAC AATGCCTTCA CATACTGAAC ACAAATATAC GAGCTGTTGT	•
	CTTATTGGGC TCATGTTTTT CCTACCACTA AGCCGCATGC ATGCAAGGAC CATGTTGGTT TTGTTCCACA TTGCATCCCC	:
	AACCTGGTAT ACAGTGTGCA TTCAATAGTT GTTGACTATT ATTACTAGTG GCATTTAACA AATATCTGTT AAATGAGTGA	L
	AGAAATACCC ATTTACTGCA AGTGTGTCTA ATATTGATGG CATAATGGGG GAAACTCAAA CTCTGGAGTC AAACAGGTTT	
30	TAAAACCTTA TTCCCTCATC CTCAGITATT GACGITITTT TTTTGGCAGG TGTGTGTGTG GGACAACTTA TTGAACTITT	
	CTGAATTTCC AGCTTCGCAT ATATAAAATA GAGATAGTGA TTCATTCTTG CAATGTATGG ATTTGAGACA ATTGTGTAAG	j
	TITATCAATA AATAGTAGCT ATTITTGTAT AAGTATTACA TATAATATCC AGGCCACTGC TITGCATAAC CCAAAAGGGG	
	CACCATTCAT GCAGAATACA ACATAAATGG TGTCCCTGGA GCAGTGCAGT	
	TITATAGITC ATAGATTACA AATTATCCCT TTATCAGAGT CTCTCAAGGT TGGATGTATT TGAGGTCCAT AAGAGCAATT	
35	TAGGATTAAC AGTAGCTGCA GAAACCATCT GCAGTGATAT TCTCATTTTA AATCCGCGGG AAAGAAGACA GCTATAAACT	
	TGGGACCTGG GTTTAAGCAT TTTAAATGCC AAGTTCACCA TTTTCTAAAA CACAACAAAT ACCCAGTGAG AGAGGGAGAA	
	GGGAAGTAAA TGCCTCTGAA TAAGCAAGTT AATGTCAGTA GTTGTACTGT ATGCATATTG ATGAACAATA GAGGAACCAA	
	TGTCCAATCA GATGAGCAGG ATATTTGGCA ATAACAAGTT GCCTTTGAGG AAAAATGATT TTCTTGGCAA GTTCTTTATC	
40	AGCATTACAA AGCTAAAAGC TACGCTTATC ATCACTTATA CTAGCATACC CTGTTGTGCA AATGCTGTCT GTGTTTGCAT	
40	CTGCTATTGT TGATGCCTGG TGCATGAATC AGGACTCCAG CCCACAAGTT TTCCCAGAAC TTTCTTATGG CCATCATCTT	
	TAAGTGTCTG GTGAACAGTC ATAGTTTGGT ACACAAAAGG GTCAACCTGG GGGATGGCTA GGGTTTGACT CAGTCGTTAC	
	ATTICAATAG AGCAGGAAGG GGAAATGGTG GCCTGTAACC TCAGGGAATT TTGCCAGTTG GTCCACCCCA CTCTCTCTCT	
	CCTGCTCTGA GGAAGTGGCA CAGCCTAGAA CAGCACCACA GGTGAGAGAA ATGCAAACCC TAACCAGAGA AGCAGACTCT	
45	TIGCCAGTAG TAATAGTICA GGACCACCAC CAGCITITAT TAAAATITITT AATAACACTC AAGTATIGGC AGAAAGAAAT	
45	AATCTTGGGT TAACTATAAC TAGAATATTG ACTCTTCCTC TGTGGAAGAA TCAGCCAATC ACATTTGTTT ACATCAGTTC	
	CCCTGAAGAA GAAAAATACA CTGATGTTGC AGCAAGACAA ATTTAAGCTA GATGTAAATA ACTTCCTTTA GCCTGTAATG	
	CTAGGCTAAT TACATATTGG AACTATTTTT TCAGGGAAGA ATTGTGTAGG GTTTCAGGGA AGAATTCTGA AGAAAATATA	
	GAGCTGAAAT GATCTTGCAG CTCACTGAAA CTGCAGGGTT TAGATCCACA CTGATACTCG TTCTATTATC ACTGTAATGA	
50	AGGCTGATGG AATAAGTAAA AATGTTTTGT ATTAGTATGT TTTTTACACTT ATTTGCAAGG CATAAATAGG TTAGGTTTTG	
50	ATCTTAATTT AATTCTAACA TGTATTGTGC ACAAGCTGTG AGCAGTTTTC AGGAGTTAGG TATCTGGCCA TGACTGATTT TTCAGGAGTT AATCATCTGG TAGAAGGGTC ATACACAATA GGAAGATGTG TGTGACAGGT TGTGATCATT ACTATAATCA	
	CACAGAGAC TGTAGAATTT TAGGCTGGCA GGGTGGCTCA CGCCTGTAAT CCCAGCACTT TGGGAGGCCA AGGCAGGCGG	
	ATCAAGAGGT CAGGAGATGG AGACCATCCT GGCTAACACG GTGAAACCCC GTCTGTACTA AAAATACAAA AAAAAAAAAA	
	AGCCAGGCGT GGTGGTGGGC GCCTGTAGTC CCAGCTACTT GGGAGGCTGA GGCAGGAGAA TGGCGTGAAC CCGGGAGGTG	
55	GAGCTTGCAG TGAGCCGAGA TCGCATCACT GCAATCCAAC CTGGGCGACA GAGGGAGACT CAGTCTCAAA AAAAAAAAA	
55	AAAAAAAGTC ATGTTAGATC CAGAGGGGTA GCAACTGGGG CTGGGCTGTC AGTCAACTCA GTCAACTCAG TCAACTCTGC	
	TCCCCCACAG GAGATGCCAG TGATGCATTT TCATGGCCAA CATTGTCAGT CAGCATCATT GAATTACTCC TGATTATAGA	
	GACACAGCTG CAAACGATTC CCCATTAAAT ATGATGTTTC TTGCAATGTT TGGAAGGTAC TCCTTTTTAG TAAGGGAAAT	•
	CCCCTCTTCT GGCTTGCTGA AAGTTTTTC TTTCCATTTT AAAAATCGTG AATTCCTTTT TGCAATATTG AGGTGGTTAT	
60	ATGGTTTCTC TTCTCTAATC TGTTAATATG GTGATTTAAT GGTTAGAAAT TTTCTAATGT AAATTCCACT CATATTGCAG	
	AAATAAACCT AAACTGAGCA TGAGGCTATA TTTTTTATTT GCTTCTATAT TTGGTTGCTA TACAGTATTA TGTTTAAGAT	
	TTGTTCACAT ATAITTGTGA ATGGGATTGG ACTAITTTTC CTTCTTGCCG ATTTTTATCT GGTTTTTAAA TTAAGGATAT	
	TTTAGACTTA TGAAATATTT GGCAAACAAT CCTTGGCAAG TAATTTTTTG GGGAATTTGT TTTGGCTATT TTGAGTATTA	
	CCCAATATAT TITAATTAAG TTATTCTTAA TGTTTTCTTA ATTAAAAAAA TTACCTACTC TAGAGATATT CTTTATGTAC	
65	TCCAGATTIT GTCTATTTAT ACCACTTTTC TITTTTCCTC GATGAGTGTC ATAGATGTTC ATCTATTTT TTATCTTCTT	
	TGATCTICTC TTATTCCTTG TTTCTATTAA CTTCTGAAGT TTATTATTTT CTTTTTTCCA CTTCCTTATG GTTTATTCTT	
	TCAATTTTIC ICTAACTTCT TAAGITGGGT GTTTAATTTT TAGCITGCTT TGCTTTTTTA GGATAAGCAT TAAAACTACA	
	AATTITCCTT GTTATTCTTT TGCTGCACCC CAAATTGTTG ATATTTCTAT TGTCTAATTT CTATTCAATT AGAATACTTT	
	AAAGTTTCTT TTTGGTTTTT AAAAACTAAC TTTTTAAATT GACAAATAAA AATTGTGTAT ATTTATTGTG CACAGCATAT	
70	GGCTTTGAAA TATATGTACA TTGTGGAATG GCTAAATTTA GCTTATTAAT GTATGCATTA TCTCACATAC TTATCATTTT	
•	TTGTGGTGAG AGCTATGTGA CTTTTGAACT TATGAGTTAT TTAAATATT TTAAATTATT AAGCATATTG GGATTTTAAG	
	TAATTTACCT TTTTATTATT AACTTATAAC AAGTAGAACA GTTAACCTGT ATGATTCTAC ATCATTGAAA TTTATTGACA	
	TTTGCTTCAT AGTCTATTAT ATGGTCTACT TTTGTTCATG TTACATCTGT AGTAGAATTG GCTAATAGTT GAGTAAAGTA	
	CACATATGTC TATGAAATCA AGTGTAATCC AGAGAAAAAG AGAAATTTAC TGAATATATT GTTCTAGGTG CTATTATATG	;
75	TIGICATGIT TAATCCTCAC CACAATTGIA TGAGGCAGCC ATAATTAATT CCACTITACA CATGAGGAGC CTGAGGGTTA	k

	AAAAAAAAGC TAGCTCTACT	ATTTGTAAAG	AATGAAGCAA	AGATACAAAT	GAAGGCCCAC	ATATCCTATA	ACTAGATATT
	TAAGCATTTT AATTCAAGCT	TTAAAACTGC	TAAATAAAAT	GTGCTCCAAT	TTCTATATTG	ACAGACATAC	CTTCCTAATG
	AGCTGGGGTT CGAATTTAGA	AATCTTTGAT	GCTTCAGAGT	CCACACTGAA	ATGTGGAGGC	ACATAGTGAG	TTGGTCCCCA
	GCCTTCAGTC CACCCACCTT	CTCTTTACTA	AATCACCTTT	CACATACATG	TATGAACACC	CCAGCCTCCA	AGTCCAAACC
5	CTAAACAAAA TGGGACACCC	TTGTGCATAC	ACAGAGACAC	AGCCCATCCT	CAGGAAAACC	TGGAAAAGTC	CATACAAGTT
	CTGGAAGCAA GCTTGGGACG	GTTTCAGTAG	TGTGGTCTAT	AAGGGAGGCC	TCAGAAGACA	GGTTTTCTTA	ATTCTGTGAA
	CTTCTCCCAC AGTAGAAAGG	GTGCTGGAGG	AGGGTCAGAG	TGAGGACTTC	TAAAGCATGG	GTCCTGAGTA	GGGGCCACTC
	TTGCCCAAGT CTAAGAAGGG	TACTAGAATA	GCACACTACT	ACTAGATACT	AGAACCCAGA	TACAAGCACA	GGTCTTCTGA
	AATTAATAAT AATAATAACT	ATTACCATTA	TTATACCAGT	AGCTGTCATT	TATTTAGTGC	TTATTATTTG	CCAGTCACTG
10	TTCTAAATTC TTTACATGTA	TTATACAACT	GCCATATAAC	TGCCATATGA	GGGATGTACC	CTCATTGTCA	CCATTTTACC
	GATGAGAAAA CTGGCATAAA	ACGTTTAAGT	AACTTGTCCA	AGTTACAGAG	CTTAGTGAAG	CCACAATGTT	GCTCAATTTG
	CTCTCAAACT TCAAAGGGAT	GGGAAGGACA	CCTAAGTCAT	AGAGTCTTTA	AGAATCAGAG	CTAGAAGGAA	TCTTAGATGT
	TATCTAGTCA GCCTCCTCCC						
	AAGTGAATAT ACATTCTACT						
15	GCTTTAACTT TTCTCAGAAC						
	GTAAAATATA ACTTTTCTTC						
	TATGGGTATA TACTTTCTAA	AGGGATAGTA	ATTTCTCTAG	AATATTCATT	TAATGCTCCA	GAAGTAATTA	GCACAATTGT
	GCAAGTCTGT GCATCATCAA	CTATACATTC	TGCCTGTTTA	CTCCAAATCC	ACATGAAACT	GATTATACAG	TCAAAGGCGA
	GCCCAGTGGA GAGGCATTTT						
20	ACTGCATTTC TGAAACTAAA						
	AGATGTGGGG CTTTTCCTAT						
	TCTCTTATAT TAAGAATTAA						
	AAAATGGAAC ATTTGCATAA						
	CTCCCAGCCA ACCCCCCCC						
25	TGGCCCCACC CTCATCATCA						
	ACCCTCTGAC ACCTTAATCT						
	ACAAACTTTA TAAGCTTTAG						
	TCCAACATCT CTAACTTCAA						
	TAATTTTGCC TCTGAATTCT						
30	CTTAGCATAG CCATAGCACA						
	CCAGGGATAG GAACTCTGCC						
	AATTGGTTAA TTGAAGACAA						
	AACTATTTTG ATCTATTTTC						
	AAAATTGCTT TCAAGAGTGA						
35	TTGAAACCAA ATCTATTCTA						
	TCGTTATCTA TTAAACAGAC						
	GCTTCAGTTT CTTAAAATTT						
	TGTCAGGTAC CATCTCTCTA						
	TTCTCAGAGA GCTTAATTTT						
40	CCAATTTTGC CTTTTATGGC						
	TTCAAAGCAA CCTAAATACA						
	CATGCTGTTT AAATCCATAC						
	GCTTCTCACA TTTCTAGTTC						
	GCAGAGAAAA TTAACTCCTC						
45	CACTACGTCT GTAGGGTCAC						
	GCCTACTAAG ATAACTGGAT						
	GGTACTTATT CTGTCACCCA						
	ATCCTTCTGC TTCAGCTCCC						
	GGGATGGGGT CTTGTTGTAT						
50	TTGTTGGAGT TACAGGCATG						
	TCATCATTAT GGTTACTACC						
	CAAGTAAATA TTATTGTCAG						
	AAAAGAACTG AAAATGGCCG	GTTCCTGCCT	TAACTGATGA	CATTCCACCA	TTGTGATTTG	TTCCTGCCCC	ACCTIGACIG
	AGGGATTAAC CTTGTGAAAT	TCCTTCCCCT	GGCTCAGAAG	CTCCCCGACT	GAGTACCTTG	TGACCCCCAC	CCCTGCCCAC
55	AAGTGAAAAA CCCCCTTTGA	CTGTAATTTT	CCACTACCCA	CCCAAATCCT	ATAAAACAGC	CTCACCCCTA	TCTCCCTTCG
	CTGACTCTCT TTTCAGACTC	AACCTGCCTG	CACCTAGGTG	ATTCAAAAGC	TTTATTGCTC	ACACAAAGCC	TGTTTGGTGG
	TCTCTTCACA CAGACCATGT						
	CCTGCTCTTT GCTCCATGAG	AAAGATCCAC	CTATGACCTC	TGGTCCTCAG	ACCAACCAGC	CCAAGGAACA	TCTCACCAAT
	TTTAAATTGG GTAAGTGGCC	TCTTTTTACT	CTCTTCTCCA	GCCTCTCTCA	CTATCCCTCA	ACATCTTTCT	CCTTTCAATC
60	TTGGCACCAC GCTTCAATCT	CTCCCTTCCC	TTAATTTCAG	TTCCTTTCTT	TTTCTGGTAG	AGACAGAGGA	AACGTGTTCT
	ATCTGTGAAC CCAAAACTCC						
	CCTGCCTGAT TATTCACCCA	CATTTCAGAG	CTGTCTGATC	ACTGCAGGGA	CGCCTGCCTG	GATCCTTCAC	CTTAGTGGCA
	AGTACCACTT TGCCTGGGTG						
	ACCCCTTCTC TCCATGTCTC						
65	CCCTTTTCTC CCTTAGCCTG						
	TTTCTTCTGC AATACCGCTT						
	CCATCCCACA AGATCTAAAT						
	ACGTCGGTCC CTCCCTAGTC						
	TCCCAACCC AAGTGTCGCT	GAGTCTTTCC	AATCTTCCTT	TTCTACTGAC	CCATCTGACC	TCTCCCCTCT	TCCCCAGACT
70	GCTCCTCCTC AGGTCGCTCC						
	TTCTATCACC TCCCCTCCTC						
	TTCCTCTTAA AGAGGTGGCT	GGAGCTAAAG	GCATAGTCAA	GGTTAATGCT	CCTTTTTCTT	TATCCAACCT	CTCCCATCTC
	AGTTAGTATT TAGGCTTTTT	TTCATCAAAT	ATGAATACCT	AGCCCACTCC	ATGGCTCATT	TGGCAGCAAC	TCCTAGACAT
	TTTACAGCCT TGGACCCAGA						
75	TAGAAAAGC TCCAAAAGTT						
			= -				

				m , mm ama , a				
							TGTGAGAGAA	
	CATCTCCAGT	ACACAAGAAC	TTCAAAATGC	CTAAGCCACA	GTGGTCAAGC	ATTCCTACAG	GACCTCCTCC	ATCAGGATCT
	TGCTTCAAGT	GCCAGAAATC	TGGCCACTGG	GCCAAGGAAT	GCCCTCAGCC	TGGGATTCCT	CCTAAGCCAT	GTTCCATCTG
							TGGAACTCTG	
5								
,							TCGCCTCAGA	
							CAATGCAGAG	
	CCACATTACC	TTCTCTTCAA	GGTCCTGTTT	CCCTTGTCTT	CATAAATGTT	GTGGGTATTG	ATGGCCAGGC	TTCTAAACCC
	CTTAAAACTC	CCCAACTCTG	GTGCCGATTT	AAACAACATT	CTTTTATACA	CTTCTTTTTA	GTTATCCCCA	CCTGCCCAGT
							ACAGCCACAT	
10								
10							TTAACCCACA	
	ACCTCTACTC	CCTCCCTGGC	AACAAATCAC	ACCCTCATTA	CTATCCCATT	AAAACCTAAT	CACCCTTACC	TGGGTCAACG
	CCAGTATCCC	ATCCCACAAC	AGGCTTTAAA	GGGATTAAAG	CCTGTTATCA	CTTGCCTGTT	ACAACATGTC	CTTTTAAAGC
	CTGTAAACTC	TCCTTACAAT	TCCCCCATTT	TACCTGTCCA	AAAACTGGAC	ATGCCTTACA	GGTTAGTTCA	GGATCTGTGC
							TCCTCAATAC	
1.5								
15							TTGCACCCTT	
	TCTCTTCACT	TTCACTTGGA	CTGACCCTGA	CACCCATCAG	CCTCAGCAAC	TTACCTGGGC	TGTACTGCCG	CAAGGCTTCA
	TGGACAGCCC	CCATTACCTC	AGTCAACCCA	AATTTCTTCT	TCATCCATTA	CCTATCCAGG	CATAGTTCTT	CATGAAAACA
							GACTITACTC	
^^							CTTTCCCACA	
20	AGGCCACCGT	GGTCATTTCT	TCCCTTCTGT	CAGACATAAT	TCCTTGGTTT	GGCCTTCCCA	CCTCTATACA	GTCTGATAAT
	GGACAAGCCT	TTACTAGTCA	AAGCACGCAA	GCAGTTTCTC	AGGCTCTTGG	TATTCAGTGA	AACCTTCATA	CCCCTTACCG
							GCTCAGCCTC	
							CTACAAGGTA	
							ACTTGAACTG	
25	ACTTGTCATC	CCTACAATCT	TCTGTCTAGT	CATACTCCTA	TTCACCATTC	TCAACTACTT	GTAAATGCCC	TGCCCTTTTT
	TACAGTGCTG	ATTTATACTT	TTCCTCCAAA	CCATCATAAC	TGATATCTCC	TGGTTTTACC	TCAAACCGCC	ACCCTTAAGT
							ATAAAGCCCT	
							TCTCCACCAC	
							ATTTCTCTTT	
30	CACCGAGTCC	TCAATTTACT	CACTGCTAAA	AAAGGGGACT	CTGCATATTT	TTAAATGAAG	AGTGTTGTTT	TTACCTAAAT
							CAACCAAGCA	
							ATACCTGTTT	
							CATCACCAAT	
	GACAAATGTT	TTAAGGGAGG	AGACCACCCC	TCATATTGTC	TTATGCCCAA	TTTCTGCCTC	CAAAGAAAGA	AGTAAAAATG
35	AAAAGGCAGA	AATGAAATCC	ACAGGCAGAC	AGCCTGATGC	CACACCCTGG	GCCTGGTGGT	TAAGATCAAC	CCCTGACCTA
							TCTTGTTCTG	
							AGTCATGACC	
							TTTTTGAGAC	
	CCAATGCTCC	CAGCTGAATA	AAGCCCTTCC	TTCTTTAACT	CAGTGTCTGA	GGGGTTTTGT	CTGTGTCTTG	TCCTGCTACA
40	GTTTCATCTA	ACAACCCCAT	AATATCACCC	CTTACCACAA	AATCTTCCTT	CAGCTTAATC	TCTCCCACTC	TAGGTTCTCA
							CACCCCCAAA	
							GTCAGGCCTC	
							GGCTGGTTCC	
	GATGATATTC	CACCATTGTG	ATTTGTTCCT	GCGCCACCTT	GACTGAGGGA	TTAACCTTGT	GAAATTCCTT	CCCCTGGCTC
45	AGAAGCTCCC	CCACTGAGCA	CCTTGTGACC	CCCACCCCTA	CCCACAAGTG	AAAAACCCCC	TTTGACTGTA	ATTITCCACT
							ACTCAGCCCA	
							CGCGTGATAA	
							TTGGGGCCCA	
	CAAGGCCACA	AAGGCCAAAG	GGAAGTAAA	G ATCTCATTAT	TTCTCCTAAT	AATITCCCTG	TCCTTTGTCA	TAAATGGTGG
50	GTAGGCTGTT	ATGGTGATGG	CAGATTTTCT	TTCCATAAAA	TGTCCATAAT	AGGACATTTG .	AACAGAAGGG	AAAAATCAAA
							CAACTGGCAG	
							TTGGACAAGA	
							CCGACTAGCT	
	GTATGTGCTA	CTATGCCCAG	CTAATTTTTT	AAAAATTAGA	TTTTAATTTG	GTGAACTATT	TCTGTAGGAA	ACTACAATAA
55	TACAGCCCAG	GCACATTGAT	CTTGGGTGAA	CAAATCAGAA	GGAATGAATA	ATTCTGTGTT	CCTGGGACTC	TGACAATTTC
							TCATGTGACA	
								AGAGGCAGGG
								AGCTGACCCT
	GTGCAGTGAA	AATCTGAGGG	CTGAGTTCCT	ATTGGAACAC	AAGTGAAAGA	CTTCCTGGCT	TCTAATCTCA	GGATAAGGAC
60	TCAGAGCTCC	ATCTGTTCCA	GCCTTAGGAT	AAGAACCAGA	ATCTTACACC	ATGAAAGCAT	GAAAGGTAAG	ATTTGAGTGA
							GGTACCATCA	
	OTCOCCTA AC	CAACCCAAAT	TOTOTICAG	TITTENGTICA	ATLACALICTA	1 CTITOTO LOCA	ACCUMANT ACAG	CAMIAACCCI
							AGGTTAAGAC	
	GGAGAATTT	ATATTATGAA	TCTTGATTTA	TGGGATTACT	ATTATGTAAT	TCCTAAGATC	ATATAGGAAT	CCTAGAGCTT
	GAATATAGAA	CTTTATTTTT	AAATCTATAT	ACATCATAAT	TACAAGGAGT	AGTGTCCATT	TGGGTTCCTT	GGCCCTGATG
65							TACACCTCCA	
								GCTTTTGCTA
							CTCATAATGT	
							TCTATTCTCT	
	CAGCTGTTGA	CATTAGGTGA	TATCTGCCCA	GGTCATCAGA	TGCCATAGAG	AAAGAGGGTT	TGCTGAAACT	TATATCAGCA
70							ACTAGATACT	
. •							TAATTTCAAA	
	ONCACACACI	CIUCCCIUAA	ALLIAGOS	VICTOVCIOR	ATCOALLE	AMMONIATUA	INALLICANA.	TOLOTALO
								TCAGTAAGAA
	GCCAGGAAGA	GGAGCTCATC	ATGGGTTGGA	TTAGTAAAGG	ACTAGTTATA	AAAGAAGTGG	TGGGGTTGAG	GGAGGCCTGA
	GATGAAATTT	AAAGAATATG	TAGAATCTAG	GTAAGTGGAT	AAAAGGTCTG	GGGGCAGGGG	AAAGGAGAGC	ATTTCATTGT
75								ATTTCAGTGA

TGTTTTCTTA CTAATAATAT CGTGATAAAA GAAACATTGA CTATAAGAAA TAGGAATGGG TCTCATAAAA GGAAACAGCA AAACCCCCAA ACTAAAAAAC AGCGCAGGCT ATTTCTCTCT TCTCTCCTTT TGCTTGGCAC TCATGAGATG CTAGGTGTGG AAGTCAGCCA ACTGAAAAAG AGAGGTGGCT GAAGAAGGTG GGGAGGCTGA AGCCAGTTAA ATAGGATGGT CCAATTCACA GACGGCGAGG CTACAGTGCA AATAGGACTC TTTCAACTTG AGCAGGACCC CATTACTTCA CTGGAGTTAG AAAGAAAGGA GAGCGTAGAC TTTTTGAACT TTCTATAAGA GTGTACCTCC ACAGTATACA GAAGACGACG TGAAATTTGA TCTGCAAGAA AACTGAGTCC ATATTCACAT ATGTATCAAA TTTGCACTTC ATTTAGAAGT GTCTGTCATC AAGTACAGCA CTGAATTGAA ACTGAAAACA AGAGTCAAGA AAGAGCAAAG TCAGCCATCT TTATATTCCA CATGAATCCT TTCCCTTTAT GGTCTTATTTT GTTTCTCCTC AGAAAAGACA AAAAGCTGAG CTGTATAAAC ACCTGTGGGC TGGGGGTTGA GGGATAAATG AGGGCGAAA TGGAAGCTGA AGGAACTGTT GGTCAGGTAG AAATCTTCCC AGATGCACTG AAGGAAACAC ACTTCATGTT TGACGTAGGA GGTGCCACCA CACAAAACGT TTCATGGAAG GATTTAAAGG ATCTCATGAT TTTTAGTATT CCAAGAATTT TCTTTCACCA AGGGCGATTT AATATGGGTC ATTCATACTG AAAGAAAAAC AAAAGATAAT AAGAGTTTAA AAATTGCAAA ACTTGGAGTG ITAGTAGTAA AGGTAAATAT TCATTAGAGA TGAGAAGAGG AGCAAGGAAA TGCTTTCAGC TGGAAATCTC AGACAAGAG CCAGGCTTTA GGAACCTCTG AAGATGAACA AATGTAAGCA AACCCTAGTA GCAGCACTTC TCAGATTTTC ATGTGCTTAC CACTCAGAGA TGGTGTTAAA ATGCAGACTC TGATTCAGTA GGTCTGAGTG GAGCCTGAGA TTCTGCACCC CTAACAAGCT CTTTAGTGAT GCTTATGCCA CTGGCGCACA GACCCCACTT GGAGAAATTT TTGTGGTGCA TACGGTCTTT GTCTCCAGAT CTAATGAGTC TGAAGGACAG TGTAGATTGA TTTTTAAAT TTATGTTTAT TTTAATTTAA TTTAATTTAA TTTAATTTAA TTTATTTATT TATITATITI TGAGATGGAG TCTCACTCTG TTGCCCAGTC CGGAGTGCAG TGCCACGAG GCAGCTCATG CAACCACGGC CTCCTGGGTT CAAGCGATC TTCCGCCTCA ACTTCCTGAG TAGCTGGGAA TACAGGCACG TGCCAGCACA CCCAGCTAAT TTTTGTATTT TTAGTAGAGA TGGGGTTTCA CCACATTGGC CAAGCTAATC TCAAACTCCT GACCTCATGA TCCACCTGCC ACGCCCCC AAAGTCCTGG GATTACAGGC GTGAGCCACC GAGCCAGCT GTAGATTGAT TTTTAGCAGT GGAAAGTCAAA GGAATTAGAA GGCATGCTTA AATGGAAAGT GAAATTGGAG AAAATTTAAA CTCATGAAAT AGTGGTGGTT ATAAACTCGT GATAAATTAT ATCCTGGGAT ATAATTTAAT GAGATGGTAA CACATTTAGT TTAAAGAAAT AAGTGACACT TTTTTTGTGT GACACAACTG TCTTATTCTT GGAAAGGACA AGGAGAGAT GAAATATGGT ATGTCTTCAC AGCACCTTTC AAAGGGAGAA CCAGATTCTG AGGAGCTGGT CTCATGATGA ACTGTCAGGG TAAACCACAG TTCAGCAGCT GCAAATGTGC TTGCCAAAAT AGAGACAAAA AAATGTTTCT GAAAACAAAA TTTCACATAT GCCCTCCTCT GAGGTTGGCA TCATATCTTC CTGTGTATCT TGGGTGTAGC TTCTATCCTG CCAGAATTTA GACAGTAGAA ACCAAATGAG GTGATAAACA GAGTCATTIT GCAGAAGAGT CAAAATAACC CAGCAAGAAA TGAAACCACA AATGCCCAAG GAGTCATTCA TTCACCATTC AAAAGCTAAT AGAAATGAAC ACAAACTACT ATGAAAATTC ACCCAAGAAC TTAAAAAAAA AAAAAAAGGC TCATGGTGTT TAGTGTGATA GTATTCATTT TACCTTTGAC TTGTTCTAAA AACACACCAT ACTTCTACCC CACCCTTCCT CAGTGCCGTC ACACAATGGT TTCAGTGTGA 30 AAAAAAAAC CACGTTACTG GAAAAGGAGG GTGCCTGGGA CTTGCCACTC TAAGCTGGTA GTCAAGGGTC TTGAGTTCTA AAAGCATACG CGTTAAGAGC ATGATTCCTG GATCCAAATG AGTATGGATC TCAGCATTGC CATTTATTGT GACCTCAGGC TATTITATIT CTCTGTGCCT GTTTCTTTAT CAGTAATGAA GATGTTCATA GACCCTTCTC CCACAGACTT AAAGGCATAT TATTITIATIT CICTGTGCCT GTTTCTTTAT CAGTAATGAA GATGTTCATA GACCCTTCTC CCACAGACTT AAAGGCATAT TTCATGATTATTGA AACAGTATAA CACAGTATAA AACAGTATAA AACAGTATAA AACAGTATAA AACAGTATAA AACAGTATAA AACAGTATAA TATTAGT TCAACTACAA AAAGAGTTTA TATTGTATAGT CCACCAAGAT CATATTCGA CCACAAGAT CATATTCAT ACAGCCTTGG TCAATAAATG AGAGCTGGGC AAAFAATTCT TCTTTGCTAG GCCTTCTTAG ACCATCTGGT GAAGCATTCA AGACTTAGT TATTGGGGCC AGCCTTCCTT TCCAACTTCA ACCACACAC TCCTCAATAA GCCATGGGC CAAGAAAGTT CTGCTCAGTG GCCCCTGAAA AATGCTTTCA AATCCTATCT ATTCTTCATA AGCAACCTT TTTATAACAT TTTTCTATAAC CACCAAGCCA AATGACCTTT TCTTAACTCC CCAGCTAGGT AATAATTCT CTGAAATCAG GGCCCAGGCT GACCTCCTTT CCTGCTCAAA GAAACCTTA TCCTTCTTAACTCC CCAGCTAGGT AATAATTTC CTGAAATCAG GGCCCAGGCT GACCTCCTCT GCTGTCTCAA GAAAGCTTAG CAGTTTCCAAA CCAGCAGGT AATAATTTTC CTGAAATCAG GGACCAGGCT GACTCCTCTT GCTGTCCCAA GAAAGCTTAG CAGTTTCCCAA
CACAAAAATG TTCAATAAAC AACTATTAAT TGACTGATTA TAAAAAAATCA GTGAACCATT AAACTTTAAT TAGCAATTTG
CTTAGCATG TAATTAGCTT TTTTGCTAATA TTCTTCCAGC CAGTCCTCC TCCTGTGCCT CAAGGACATC TTAAAAAAAAA
AAAATCTAGT TGATCTGCTT CCATCTAGTG GCAATTAAAA CAGGTGGTTC CGGTAGCCAG AAAACAGCTC TGGGTAGATT GTGCCAGAAA ATACTITICAC TCAGTAGGTG CGAGTITTGAA AGAAATCTTC ACATCTGTGG GTTTCCTGCC ACAGACATAG
GGAGACCAGC CCAGAGAAAG AAGCCTTTCC TCACTAGACT CCATTTGCAC TAGTAAAGAG AAGACAGAGT AATTAAAAAG
AATAAAAAGA ACCTCCACTG ATCGTACATC CTCATCCAGT TACCCCTGCC CCACTTCTCC TTCACAGCCA AACATTTTAA AAGAGATGAC TGCTTGTTCT GTCTCTACTT TCTCATCCTC AGTAATGCTC AATGCTTGGC CGTCTGACCT CTGTCTTGAT
GTCTGCACTG CAAATAGTCT CCCCACTGAC ACCCTTGTTG CATCCAGGGG ATACTTACTG GTTCTCTTTGG CAATGTTTGA
AACCGTTCCC CTTTCTTTGT TTCCTTGGCA TTCATTACCC CACACTCTTT CTCCTCTTCC TTCTCCCTGC CTGGCAACAT
CTTTTCATTT CTCTTTCCCT TAGGTGACTT ATTAGATAAT GATGTTCCTC TGGCTCCCAT ACTCTCCC AGGTCCTCTT CCATTCTTAA AGCACTCACA CCCTCCCTGG ATGATAGTAC CCACTCCTGA GATGGCAGTT ACCTCCTGAA ATGTGAGGGA CCCAAATCCA CTTCTCCTGC CATAGCCTCT GTGCTTTGGA TAGGTCCAAT GAGCCACAGT GAATGATGTG CATACACCCA AAGCTCAGTA CAAAACTGAA CCCATGATCT TTACCTCCAA AACCTCTCAT TCTTTTATGT TCCCTTCTCA GAAGTAAACA GGACTACCAT CCGCCAGTTT CCAGGTGAGA AAGATGATAA TTTGATTCTT CTCTCTCACT TTTAGCCAAT TAACAGACAC GAGCIACCAT CCGCCAGTIT CCAGGIGAGA AAGATGATAA TITGATTCTT CTCTCTCACT TTTAGCCAAT TAACAGACAC ATTCAGTTAA TATCACCTCC TCTTATTTCA TGAACCCATT CTTACTACTA GTTCCCTAGA CAGGCGCCAT CGGTTTTAAT CTAATAACTG CAAATGCCTC CAAAACAAGT CTCTTTTGAAT CCAGGCTCAC CTGTCTCCCA CACTTGCCAT ACCCAAAAG ACCTCAAGAT AAGCCCATA TCACATGCT TATAAAGATGC CAGAGGTAAG GCTACTCACT GGCTTCTGGT GCCTCATTT TCCCCACATT TTCCTTTGCA TTCTAAGCAA TGGCCCATAC TAAAGTTTGTG ATTGGTAGGA TGGTTGCCCA AACCAGCATC CAATCCCTTC AGAAATCATC TCACTTCATT TCTAGCATTT TCAAAGGAAAGC TCACTTCATA ACCCAAAGTCC TCCTTTCATA GTTTATTTTA CTTAAACTCT CCTTCCTAAA ATTCCAGAGC AAGTCACTAA ACCCTAGATA CTGAGAAATA TTTTTCCATC
TTCATTTCTG CCAGGTGGGC CATCAACTTT CACATGTCTG CATCTCCTCC CACTGTGCTA TTTCTCCAGT AGAAGAAATT TGAGCTTCAA GACCAAACTG AAAAATACTT GCCTCCTTGG GGAAGCTGTA GGTAGAATTC ATGCTCCCTA TCTTTCCCAC ATTTCTGAAG GACAATGCCT GTTAGAGCAA TTGAATGCAA ATAGTCAATT GAATAAGCAT TTATTCATTT CTCAATAAGT GCTTGTTCAA TTGAATATTT CTTAAATAAT ATATTTAAGA ACAAGAAGAA CACACCACAA TGTTTTTAAC CCTCAGAAAA AATTCTGAGG TAATCAGAAA AATCTCCCTT TACATAAACT GCCCTTTTCT AATAGGGATT ACTTGTTCGT TCATTCATTC
ATTCAGCTCC ACTAGCACCA AAAAGCACAG CTCTGAAAGG AAGCTAGTAG ATTTATCACC TTATCTGGTC ATTTGGATGA GGACCCCAGG TAAATAAACT ACTATGGGGT TAATGTGTCT AGCTAGAGCA GGAAGTAACT TAAGGAAGTA GAGAATGAAT CAGCAGATGT GGAAACTCCT CGCCACTAAT AAAACTTACC TTCTCTTGGA TTTCTTGCCT GAAAATAGAA AATAGAGAAAA AGGCATTAGC AAAAATTAGA CAATTTAAAG TITTTCAAGT AAGGGAGAAG GAAGACTCCC ACTCTCAAAA CTGTCTTTTG
AAGTATATTA GGTATTTGTT AGGTGGACCC TATCTGTGTC AAAGGAGATT TGAGGAACTG GCTTAATAAA CAGTGGTAGA CACTAATACA GAACAGACAT GTTGATGCAG ATGCCTCCTG AGGTTCCATT CCATTCTCCG TGCTACTCAA GAAGACAGAA 25441 TTGCTAAATT GCCTGGTGGC AAGACCCAAT ATGTCCATTC AAGTGTTTAT CCCTTCCCAA TCTGCCATCT CATCCTACCT GCAGATTCTT CCCTTGAGGG ACAGCTGCTA ATACTGTAAA ACTATGTGCC ATTACAGCTC ACAGCATCAT CTCTATGAGA

ATCCACAGA GAATITCACT TTGGTCTTGT TGGTAGGAAT TGTGCAGCCT CATCTGAGTA ACTAATGTGT TTTTATCTTA CAAACACAAG GAATATCACA TGGTTCTCCT TTGACTGGCT GTAAGGAAAC TCAGAGCTAG ATCTGAGACC CTCTCCTACC AAGTATATAA AACTITGTGA CATACATTIT TGTGCCATAA CITCAACCIT GGTTCCAAAT GATTITTGTA CCCTAAGTTT AAATTTGGCT TTCTTTTTTT TTTTTTTGTA CTCAATAAAA CATCAAGCTC ATTTATTATT GCGAAGAGCG AAACAACAAA AAATTIGGCT TICTITITIT ITTITITGTA CTCAATAAAA CATCAAGCTC ATTIATIATT GCGAAGAGCG AAACAACAAA GCTTCCACCAG CGTGGAAGGG GACCCGAGTG GGTTGCCCAA ATTGGCTTCT TITTCTTACT TITTAATTAA TITTAATTTG CTAACTGAA CACATTITGT ACTGTTCTCA CATTCTTTTT GAAAAAAGCA GAATATAAAT AAGTAGATAA CTTAACAAAAA ACTCTTTGAG CAGAAAGAAT CATTTGGGAG GCAATATAATT TCAGTGGCTG TAAAGTGGCA TTCTAGAATC ATCCTACCA GGTGAAAGCC CTATTTTGCC ACCTGAGTG TAGTGTGTAT TTGAACAGCT ACTTTCTTT CTAAACTACA ATTTCTTCAT CTGTTAAAGA GGCATAATAA TTGTATCATC CTCATTGGGT TGATAAAATA AAATATTTCC AAGTATTTAG TTCAGGTCCT AGCACGTAGA CAGTGTTGCA TTCACTTTTAA AGTATTAAAG ACTCTGATT GAAACCTTAC ATTTCTGATAAATT TCAGGGATGA TGAACCTAAC AGCATAGAT CAGTAAGAT CTGTTCCTAC TGAGAGGTT TCATTTTGAAATTTTTTT TTAGGGATGA TGAACCTAAC AGCATAGAT CAGTAAGAT CTGTTCCTAC TGAGAGGTT TCATTTTGAA AATATTITT TTAGGGATGA TGAACCTAAC AGCAATAGAT GAGTAAGAAT CTGTTCCTAC TGAGAGAGTI TCATTTTGAA GAAAAAGGAA CTAAGGGGGC ATGTGTTCAG TTTCATGCCC TGGTCTAACC CTGTGTGTTG GTTCTGGTGG GAAATTCTTC CAACCCGAGGA AAAAACCAGT TCACAAATCT GAAGACCAGT GATTTTAGAA GATGTATCTG GACTGGAGTC TAATCTCTGA CTCTGGGTCC TGCTGATATG GTATTTTTGA GATTTGGCCT AAAACATCAT TGCCCTGGTT TCCTTATTTA CCAAACAGGG CCAATGGTAG TGACTAATCA GAAAATGATA ATGCCTGGTG CACAAAATGT GTCTAGATGA GCCCATGCAC AAGGACACAT GTTTCTGGAA CTGTTCCTTA TICCTTTCCT AAAAGAAAGG AGGGAAAGTC TCCATACTAA GACTACTAGG GCAGGGGACA GCTGGTCTTG AACTCGTGGG CTCAAGTAAT CCTCCTGCCT CAGCCTCCAA AAGTGCTGGG ATTAGAGGTG ACACCAAGG TGCCTGGCCC ACAGATGAAG ACTATTTAAT GTTATCTTAA AGATACCCTA AGCTTCCTAC CAAGCCAGTG ATCTTTTGGG GCTTCTGTTT TCTTTGTTGG CATAACTGTA ACTAGCCTAA CTGCCCGTTA TCTGTTTCCT GTTTGCCCCA CACTGATTCC CACAGCAGTT TTCAAGTTAT CGGTTTGAGA TCTTGTACAG AAATGACTCC AAGGTAAAAA ATTTAAAAAC AACCCCTCTA 30 ATTITITAC CCTTGCTTAT AAAACAGCCT TAGCCAGCTA ACCCCTCACT ACATGCAAAT GAGTTTGATT CTATTCTTTT GATTCTACAA ACACTTATTA AAAGATTTTA GAATTCGGAA ATAAATAGCT TCCTTATTAA GGTGACTTAC AGCCCCAAAG TCCTTAAAAAT TATTTAGACA ATAGCCACCT TATCCCAGGG GGCAGTGTGT AATAACCCAC CCTGTTCTCT ATCCGTCAGT TCTGCCATCA TCGCCCAAGG TAGGAAGAAA GACAGGACAA CCGGGGTCAA GATTTGAAGT CTCAATGGAA AGAATAATCA GTGGTTGGAG AAAACTGTCA TICTTCTTTT GCCTTAATGC AGTACTTGAT ACTTATACTT AGTACTGAT AGTACTTAGT ACTGTATAAT ACTATAAGAT AGTACTGAT AATCAGCACA GAATTTCTAA TAGCAAGGGC AGAGACATTT TAACTGCTCA GTGCTCCAG GTTATACATA GCTAATGAAG TTCTTGCATA TCAACAATCC CCACCCCCCT CACACACTTT GTCTTTCTGG ATTGGTTAGA AAACTTACCT AGCGCCCACT ATTCTCAAAT TTAAATGAAA GATAAGATCA GAGTGGCACG CAATTAGGGA CTGATAAATA ATATTTTTGT AATTGCCAGT GTAAATGGAC AGGGGGCAAC CTTTACATAC CATATTCAGT GAACAGAATA TOTATTCCTCT CCAGTGACGG ATGGTTGGAA AGCATATAG GTGCATTTGG TTAGAGCTGT GGCCTTGGTG AATAGATACT TGGGAGAATA CATGGGAATT TCTCCCAGGG TTAATGCAAT GCCCATGTGT TGGGAACCAG GTGACTCTTG AAGAGGTCAG GTATTTGGGA GCAGTGCTT GAAACCTTAG TGGACATTAG ACCCACTTCC TAGTGGAATT GTAGCATTGA AATCCAAGGC ATGTAGGCTC TTAGAGGACA GAGATAGTGT GTCATTTTTT CAGAATTAAT TAAGAGCAGG CCAGGCGTGG TGGCTCACAC CTGTAATCCA AGCCCTTTTGG GAGGCCAAGG CAGGCAGATC ACGCAGGTCAG GAGGATCAGAG CCACTCTGGC TAACACAGTG AAACCCCGTG TCTACTAAAA ATACAAAAAA TTAGCTGGGC ATGGTGGCAC GCTCCTGTAG TCCCAGCTAC TTGGGAGGCT GAGGTGGGAG AATAGCTTGA ACCCAGAAGG CGGAGGTTGC AGTGAGCTGA AATTGCACCA CTGCACTCTA GCCTGGTGAC AGAGTGAGGC TCTGTCTCAA AAAAAAAAA GTATTAAAGA ATTACATAAG AGCAAAGAAC CATTAGAATA TCTCACTTAG TIGITATICAG CCTAGCAAG TGCCTTGAAG GTAATACAGAC TTTTTAAAAG TTTATCAGAT GAAAAGCGAA AATCAGCCAA CCTGTTTTAA TGAAGGTGTG TCCTGGGCTG ATTTACATGT CTCCAGGGAC TGATGGCTCT AGAATGTAAA GCTTGGCATC CTGCTTGTGT TGAATCTATC ACATTTAAATT TCCTGTGGGT TTCTTTTTTT TTTCTTTTTC ACTTTAAAGT TGTGTTCTTT TCATGTGAAG TTAAACTCAC ATACCTTTT TTAATCTCCT TGCCAGCCAA ATGATAAATG CCAACCCAGA GAATGCAGTA ACCATGACTG CCACTGGAAT GAAGAGGGGG TTATAATCAC CCTCCTTAAT CATTGAGAAA CTTTTGTCCA ATTCTGAAAG AGAAATCAGT AAGGCACATA GCATGAGACC ACCAGCATTA TTTCCTTAGT CTATCTCATG ATATTTGACT TTTTTCCTCC AGAAATCAGT AAGGCACATA GCATGAGACC ACCAGCATTA TITICCTTAGT CTATCTCATG ATATTTGACT TITITCCTCC
TTACATCTCC CAGTAGTAGC CCATTTGATG CCATTTGACA GATGAGGAAA CTGGCATGGG AAGGCCCCTG ATGAGTCTAC
AGCATAGGCA AAGACTGGAC CAGCCTTGCT AGTCTAATGC CTACAGAACT TCAATGCCCA GATTTGTGGT TCATAGAGTT
CCTGAAAATG CACCTAAAAA TGTTGGCAAG AATGGTCATC GTGTATTTA GCTCCATGGA CTTGTTCAAT GACTGGAACT
CTGAAACACA GAGAAGAGCT AAAAGCCTAA TACAACTTCA GGAAAAATAA AAGCCCAATGA TCTGAACTGG ATAATTCACC
AGTCAAAGGA AATCATTAAT GCTTTTACTT TAAAGCAGTT GTGCAAAAAT AAGCACTTGA TTTTTACATG CCAAGGACCT
GCACTAATTT CTTTCCAATG CAGTAGTTAC CACTTCCCTC TACTTCCTTC ACGAATAAGT AAAAGGGCAT GTTTAGAGAT
ACTCTTGTAA GTGTAAACTA AGTTCATTTG GGAGCCTCTA TTTGAAAATA CTGGTATAAAA AAAAAATCTG TCCCTGGTA
CTAACATTTG AAGGAATCA CTTTTTTACA TATTGGCAGA AGGCTCTAAGT TCCCAGGACC TCCAAGACAGA AACCTTTTCA AGGTGATTTG ATCCCCACAC CCAAATATAT GATTGAGAGA AGGCTCAAGT TCCCAGGAGC TCCAGACAGA AGGTACCTGT TGGCTTGATG AAGATGAGGA GGAAATGAAC ACTAGCTAGG CCTTAAAGGG AAATGCTCT GATAGGCCTA
ATACACAGTC CTCTGCTAAA GGCCTCCCTG CCTCTCTCTG CTCATCCACT CTACTCCCTG GCCCTGGGCA CGCAGCACAC
AGAGATCAGC ATTTCTGACA GCTTCTGTAG ATCCTACCAT TTAAAGACTT TTGTCATCCA TGCAGATAGT CTCAGGAGCA
GACACAGGTA GCTATTCTTT CACATGCTAG CTTAACATGC ATTTGCTTTA GCACCTATTG CCAGGCACTG TGTCAGGTGG
AGGGTATACA AAGATGAACA AAGACATGATC CTTCTCATAT ACAGATAGAT TTTGGAGGGCA TTAGCTTAGT GATGATTCAG GAGTATCCAT TATTTGGGGA AGTAGGTGGT CATTAGTGAC CTTTTACAGG CATTTCAATG GGCTAACAGA GATGTTAGAT

TGTAGTGGAA TAGAAGAATG GGTAAAAAGT AAATCAGTGA GTTCAGATTT TAGGAGTTAA GATGGCAAGA GGTGAGAACA AAAAAAGAA TAGATTGTCA TTAAAGAGAG AGGAAAGAC AGCCAAAGAT TTACAGTGA GTTAAGCATA CAAATTTATT
TCTAGGCCAC ATATTCTTAG CAAAACAACA TGTAAATGTT TATGTATGTC TTTCCTCATA TCTGCTCATC CATCAGCTCC
ATCGTTAAGA TTTCAGTTTT CCAGGACAAA CTTACTCACT TTGACATATT GGACTAGGAT TTGACCAGAT TCCAGATGAT
TCACAAATGG TTTTCTCTT CCCAATTAAC TCAGTTCCTT CTGAGCAGAT GAAGGTACAT GCAGAGGTAA AGCTGAAGCT
GGCCAGGGGA TGGCTACAGT TCATGATCCC CAAATCTGGT GCTGATAGAG GCTCACACTG AATCACTTCA ATGAAAAAGA
AAAAAAAAAAAAAAAAA AAAGACAAAA CAGTATTTCT GAGTAGAGAC CCTCCCTTGA GCAAAGGATT TTTAGCCAAA GCTGCCTGAC TACATTACTT GTGATATTGC TTCCAGGCTT TATTTTCTTG AGAATGATGG TGGGTGGTGA ATGAGAGATG AAGGCAAGGA AGCATTGAAA GCTGTGGGGA GAGGAGTAGC TACTCCAGGC TGCTGCCCTA GCTAAGGTGA CCCTCCCCTT CTGCTGGAAG TACCATGCCA TATGGCCTCT GCATCAAGGG CTCTTATGGG ATATTCTCAG AGAATCTCTG CCGTTTCATC TGTTCTGATA TCTACCCAAG CATTTTGAAA AACATCCCAA TTCACTGAAG CAAGTCCAAC TTCCGTAAAT TCCAGTAGGT GGGTTGACAG TITTATAATT TCAATAAGGG ATTTTGATAG CACTTCTAAG AATTAAACTA CTTAAACTAA TGCATCAGGA GCATACTTGT AGAAAAGTTA ACCAAAACTT CGTAAGTTCA GATGACATTG GTTTTCTCCC ATATGGAGAT AAGGTTGGCA GTTAAAAATG AAAAAAAAA AAAAACCTAC CITATTTCAA ACTTGAAAAG ATCAAGAGAT TGTGTTTTTG TTTTTCAGTT GTTATTCTCC TAAAAGTTTA TGCATGAGGA AAAGTAAAAG TGATTTTAAG AATAAGCCAA ATAAAACAAC CAAGAAAGAC CTCCACTACC CTGGGAAGGA AACTGGTTGG TATTAAGTAG GACACCACAT AAAACAGGTG TTATTGAGAG GAGAAGAACC AAAATGTAAC CTGGGAAGGA AACTGGTTGG TATTAAGTAG GACACCACAT AAAACAGGTG TTATTGAGAG GAGAAGAACC AAAATGTAAC
TGAGGTTCAA CAAGACATTA TTTATGCAAT GGCAATGAGA AAAATAAAAA ACACAGTATA ACCATGCTGT ATTGCTATAA
GTCATGTTAC ACACTGGGAG ATGGCTTCAG GGGTATTTGG TTTTTACTTT TTGTTTGGGA GGTTTTCAA AAAATTTAG
TTAGAATAAG TCCTTTGAGA AACATCACAG TAGGTTAAAC AAAGTTAGGT TAAATTAGGC TCCTAAGTTT GACTTCTCAG
CAAACTTCTA CTGAATGTTC TGACTGTAAG CCCAGGATTG CATGACAAAA CCTCTAGTCT GAAGTTACTC ACCTTGACAG
GTTGGTTCTG GAGATGACCA GTTTCCAAAT GGTCCACAGG TGGTTTCTTC AATCCCAGTT AAGTTTGTTC CTTCAGAGCA
GCTGAAGGCA CCTGAATCACT TCAATAGGGA AAGAACAGG TTGGGGAAGA GTTAAGAGGA ACTGACCCT GGATTTGAAT
CCTAGCCCTG CCACTTGATA ACCATGTGCC TTTAAACAAG GTTACTTGAA CCCTCCAACT TCAGTTTCTT CATCTATATA CCTAGCCCTG CCACTTGATA ACCATGTGCC TITAAACAAG GTTACTTGAA CCCTCCAACT TCAGTTTCTT CATCTATATA AGAGGAATAA TGAAATTGTG TTATCTTTAT CAAATTGATA TGGAAACTAA ATGTAATTCA ATTAGCATAA GTCAAGGACC TTAGAACAAA GCCTGACTCA TCAGAAATTC TAAGTAAACA TTAGCTAGTC TTCATATTAT TATCTTCAGC ATTATCTGTA GTGAGAATCC TTAAAGCCAA ATAGGTGTAA CTGGGAATGA CCAGCTTAGT CGGGAAATAA CTATCACATC AGAGCCCCTG AGTCTACTAG AGTATTGGGA GCAAGATGTT CAGAGAAAGA GTGGGTCTCC ATAATAAGCC TTCTTTGCAA GGAGAGAATA TAAAAGTCTA GGAAGCATTI TGACCTCAAT TCTGTCTTCT ATTCTAGCTC AGTTCCAGAA TITTAACTCT TTGATTTTG
ACAACCCTCT CCAGAAACTG TATCTATTTC CCTGTTCTGA TTGGTGGTAC AATAGGTAAA TITTAAGACTI TGAATTTAA
GTTTTCACAT TTTAGACCCT GCCATGCCAT TTAGTAAACA GTACAACTTT CATGTCTTAT TCCTCATCTG TCAAAATTTAA
GCCATTATTG CTACCTTGCT CTAGAGACTT CAAGGAAGAA TGGACTCAAG GAATCAGAAG AATTTTTGTA TTTGGAAACT ATATGAGATG AGATTAGGGA GAAACATGGG AACTAAGAGA AAATGTTATC TTTTTTCATT GATTTAAAGA GTATCTATTA TATATCAAGC ATTACTCTGG GGCTTGAAGA GCTTAGATTT CACCCTGTAG GACAAAATGG TAGGTAGAAA TTAATGGGTG GATTGTCATG TATGTGTGAT GTGTTTTAAT TGCTTTTAAT TGATCAGTCT CCCTGTAGTA TGAATAATGT ATTTGAGGGG AGCTAATTTA AAATTGTGGA ACTCATCTAA TAAACTATTG CAAGAATCTA GAAGAAAGAT AATGACGGCA ATGGTAGTAG AGCTAATITA AAATIGTGGA ACICAILIAA TAAACIATIG CAAGAAILIA GAAGAAAGAA ACAAAAGAAA GETAAAGAT CTCAGGAGAA ATGATCACAG GTAGAAAGAA TGAGAAAAGA GTGATATGAG AGAAACCAAG ACAAAGAAAA GTAAAATGTT AAAAATGAGT GAAATAGGCA TACCAATAAT TAAAAATGAG TAAAATAGGC ATACCAATAA CATAAGGGTT AAAAAATAGA GTTCAAAAAT GGGGTGAGGG TAAAGTATTA GGAAGGAGTC ATGGCCCAGG GATCAAGTGA AATGAGTTAG ATCTATAGAT CTATTTCAGT TGGTTGACAT TTAAATGTAT TTTGGTTTTA ATTCTTTATT GTTTACAAAC ATTGCTTTTT TAAAAAATTA AATTGTCCAA TTCAATTCAG GCTCACAAGC AAGTGCCTCA TATATACAGG CATTTTGTGG ATCCCAAAGA TGCAATGATA AATAGGACAC TTACTGATCT CAAGAAGTTT TCAGTACCAG AGGAGACGGA CAAGTGAACA GATGACTTCA ACATAAGTGG GAGAAATGAG GAAGAAATAT GTGGAGCTAT CAGAACTAAG AAAGCTTCCT AGAAGAAACT GTCTTTGAAC AATGTCTTAA AGATGACATG TTTTTTGGCC ATGTGCAAAA TGAGAGAGAA GGCCACCAGC AAAGTCAGTG TGCTACAGAG CACATGTGTT AAGTGTGGAG AACTGCAAGA AGGAAAGGAA CTACTAGAAG GAAAAAGCAA GATACTTTCT GGGTAACTCA GCCTCCTAAT GATAAATGGC ATAGTTTCTT CCAGACCTTA GAGTTCTAAT TAATCTAACA AGCTCATTAG ATCGTGAGCT TCTTGAGAGC GGGAATCTAC CATGCTAATT CCTTATGGTA ACCCTGACAG CTTTTATCCC AACACTGTGC TTCTTGTGGT ACTCAAAAAG ACTTGTTGAG AAGTGAGTCG AAACTTCATG CTGACTTATG AAATCTTTAC GGAAAAGGTAA CAATATTGTG AAAGCAGAGC CAAGAAGGAA GCACGCAGCA CCACACTCTC TACTTCACAA TGTGAAAACT GAGGTGATGT GAGCCTAAGT TTCCAACTGG CCCCAGCTGT CAGCTTCTCC TCCCCTGCCT TATTATCAAA GGCACTGATT GTCTAGCTCT TCCTCTGTAC TTCCTACGTA GATCTATCAT TITGATGTAA CITGATITAG GGGTATAGCT TITGTGCACA GGGACAAATC TTACACACCA AAAATTCTTA GGAGTGACAC GATGCAAGAT TATATAGAGG GCTAGATGTA TTTTAGAATG AACCAGAAGC TGTTCTCATC CCCCCACCTT TCCATGGGGT AAATCTGAGT ATTCTCTTAA CCGTGGCCCT TCCTGAGTCT GAGGCAGCAT AGCCGTCTTG TCACTCCCTA CCTGTGTAAC AGAGGGCTGC CTTTAGTTTG TGGCAGGCGT CATCGTTCCA TTTGCCTGCA TCTTTGTTTC TCTTGATATA GATCTCCACG CAGTCCTCCT TGTTCTTCTT GTTGTTTGGGC TCACCATCTC CCCAGTTCTC TGCTTCTTCA GTAAGAGATT TGTTGGTTCC CACCCACGTC CATATTCCTC CTATCTTCCG GATTCCTATC CAGTAGTAAG AACGACTGAA AGGCAGAGTC TTCTCCAGAT ACTCAATTTC CGCCTTGTTT TGTATGGCAA CTAAATCTGT GTAATTGTCT CGGCAGAATC TTCTAGCCCT TTGCCAGTTC ATGGGTTTTT CAGAATAATG GTAAGTCCAG CAGTCGGTTC CATGATGTGC CAGGAAATCT GCAAGACATC AGTGTGACCT ATGCAGACTT ACATAATGTT ACAGCTAAAA AGAACCTAGC ACTACTCCAG GCTGAGCTAG ACACTTAGAG ATGAGGAAAC AGAGCCTAAG AGTGTATGTG ACCATCTCAG GATCACAGAA TAGTTGTTTG CAGATTTGAA GTAGAACCTA

	GACCTTCTGG CTTGAATATA AGATGCTTTT ATCTAAGGTT CTATTTGAAA CAAATTTAGT GGT	TITCTAG GITTATITIC
	TTATTAATTT TTTTCTCAAA ATTATTTCAG GTGAAATTTA ACCAACATAT TTTAGACATT CAT	FATTTCTT TTTCTTTGTA
	GCTGTTAATG ATTTACAACT AATTACCGTG TAATATCATA TAACTATACA ATTTACGTAT ACT	
	TTTCTTGAAG GCCAACACAT ATGTACCTAT GGGAGAAGCA TAATAAGGAC AGGAAGAACA GTG.	ACATACT TTTAAGTAAC
5		
J		
	ATATCTAACT GTATAATTTT TAAAAAGAAC AATTTACAAA GCCAAATGGT ATAGGATTAT GAA	ATTCATT AGATCATGTT
	CTATACACAA AGAGACTCAA CTGATGATGT TTAATAAACA TATGGACCCA TCAAATATGA GGG	CTTTGAA GATATCTAAT
	TAAACACATA ATTACACAAT GACTTCATAA TAATATATGG CATTCTAAGC ATGGTATGAT CTAC	
	TACAGTAAAG AAACAGATAT AATTGATGGT AAAGAGCATC ATAAAATAAA	GTTTTGA ATGAGCATTC
10		
10		
	TTGTAGGGAC TCAGAAAATA CCTGTTGTAT GAAAAGAGCA CTAAGTTTCT ATGTGACACA GTGC	CAGACAT GGCATAAGGA
	ATGTGTGAAC GGGAGAGTTA GCATGTTTGC TTGGCTAGAG CTGAAAATCC AGGCTAGGGA GAA	AGAAGAC ATTAGTTTAC
	TTAGGAAATG AAAAACCAAG TTCAAAGCTA TTGCTGGAGA GTCTTCAAGA ATCAGATATA AAA	
	AGAAGGACCA AAAAATGATA AACCCCCGTC CCTTAATAAG CTCGTATTGT AATTGTAGAA ATG	ACATTAA TGTACACTGA
15	5 ACTATGAATA AAAAATAGAA AATGAGGTGC TAAATATTTG GTACAGATTG TAAGTACCTT AAC.	AGAGATT TOTTAATTAA
1.5		
	CATTATTCCT TTATAATTGA GGGATTTTGT GGGGTTATTG GGATTTGAAC TCTACAGCAT GGGG	JIATIAI AGGITAAAAA
	TAGTGTTCAG GAGTTTCTGG GGAAGAACTA AAGGTAAGAA GAAAAGAGAT GTTTACAGAA GGG.	ATAGAAT TAACAGCTCT
	GTGAAATAAT TITCCCTTAG ACTATGTATA ACTAGTGGAT ATTTAAGAAA AATGAATATA AGTA	
	ATATAAATAT CATAACATAC CACAACAGAG CATTGTCCAC CCCCACAACT TGAAGATGTT CCAT	TAAGTCC CTCTGGGTGC
20	0 TCTGACATTT CCATGGAAAT ATCTGCAAAT GAAATACAAA ATTATATTTA GATGTATACT CTTA	
	CCTTTGAGGT GGTGCTTACA ACTTTCTTAA TAATCAGAAT AAAACACATA TGTCTACTAA CCCI	
	TTCTCAGACA TAGATGAAAA ATTACTTCAA ATTTACATCA GAACTGATGC ACAGTTTTGT TTT	GTTCTAT TTTATTTTTA
	CGCTTTAGTC TCAAGTTGCT AATCGGTACT GCCCTGAATT TTTTCTATGG TTTGGTAATT TTT.	
	GAGCTATTAG ATAAAACTAT TTAATATTTA CTATGTATAT TTTTTAAAGT ATTGTTGCTG CTTA	AATTAAC TATTGATGCT
25	5 TATATTTAAT GTTATAGECT CACTCTTGAT CATAATGGGT CAATGCCTCA AATACCTAAA AAAA	AAAAAA ATTAGATAGC
	CAGACACCAG GAAAGAAAAG TATTTCTTTT TTTAATAAAA AGAAATACCT TTTTGAGCAA CTGA	
	ATTTCCTGCA CACCTTAAAA TATACTTAAT GTAAATGACG AGTTAATGGG TGCAGCACAC CAAC	CATGGCA CATGTATACA
	TGTGTGACAA ACCTGTATGT TGTGCACATG TACCCTAGAA CTTAAAGTAT AATTTTAAAA AAA'	TTCTATC TTCCAAAGCA
	TATCACTTCT CAGGTAGACA CAGTGTTTAT TGCAAAAGAT CTGATTTCAA TAGTATTTCT TCAA	
30	0 AAAGTCAAGA AGAGGAAATC AGCATATCTG AGAAGAAAGA TTTCAGGATC ACTTTTTTTG AGGG	GTCTGAG AAAATGTTTA
	GTTTCTATAT TATTTAAAAC CAGAATTGAA ATGGGGTGAT TCCTATCCTT GCCACCTGCC TCTA	
	TATCTGAGCA TCTAAACGTC TTTTAGGCTG AAAGGCTCAC CATGGCTTTG CTTGGTCCTT CTC	TAGTICI TCTGCAGCCC
	ATTGAGCCTC TTGACTTAGC ACAAGGGTCT CAGGTCCTTG CCCAAAGGGA GTGTGCTGTG CTGC	CAGGTAG ACTGCACTGA
	ATGTCAACAG AAAGCCTTGC TTTCTTTCAT TTCTCTAACC CAGTCTCACA TCCTCCTCCT CCT	
25		
35	5 TCCTCCTGCA CTTCTCTTC CTCTTTCCCC ACCCCTTCC TAGACTGGCC TCTATTGCCT CCCA	CTGAGA CAAAAATGAA
	CTGCTGATCA GAAAGTAATG TGACTAGATT CTCTCTTCCT TCCCTCCTTT CTATCCTTCC TTCC	CATTCTC CTATGCATCT
	TTCCTTACCC TCCTCCTCT TCACTCATTG TTGTTGCTGT TCTTCTTCCT CTTCTTTTTC CTC	
	CTTGTTCTTG TTCTTGTTTT TGTTTGGTTC TTGTTCTCCT CTTCCTCCTT CTCTCTCC TCC	ICCICCI TCITITCCAC
	CACCCTCCC TATCTTTTC ATAAATGCTA AACTAACTCT TGGCTACCTG TGGTAAATGG CCCT	TTGGAAA TTGCAAATAC
40		
70		
	TCGGTTCCTT CACCTCCGTC TITCCTTGCT CACCACCTAG TGGACGTCCT TGTTAGTGGC ACTI	CCTGAA GTTAACCCCT
	GAAGAGACC CATGCTCTCT AGCTTTTCAC CGTGTAGGTT TGGGAGCCTA CAAGTACCTT TAAT	TATTOTT GGACTATAAA
	ATGAGATGGT TTTATAAGAC TGCATGTGAA ATTAGGACCC ATATGATGAA GGACAATAAA AAGC	
	AGTCAATGAG TCAAATGCAA ATCAGATTTG CATTTTTAGG AAAATAATAA TAACAACAAC AAAA	AACTCTG AAGCTCAGCG
45	5 CCCCATATIT ATTATATTGT TTAATCTTTA TAACAGCTCT CTGCTATAGA TATGATTATT ATCC	CCATTC TAAAGAGTCT
	CAAAGAGGTT AAGAAACAAA TTCAAAAACT AGCGAAAGAC AAGAAATAAC TAAGATCAGA GCAG	
	GACACGAAAA AGCCTTCAAA AAATCAATAA ATCCAGGAGC TGCATTTTGA AAAGATTAAC AAAA	ATAGATG GACCACTAGC
	TAGACTAATA AGAAAGAAGA ATCAATAGAC ACAATAAAAA ATGGTAAAGG GGATATTACC ACTC	ADATAAADAT DOODTAE
	AACTACCATC AGAGATTACT ATAAACATCT TTACACAAAT AAACTAGAAA ATCTAGAAGA AATC	
50	O CATACACCCT CCCAAGACTA AACCAGGAAG AAGTCAAATC CCTGAATAGA CTAATAACAA GTTC	TGAAAT TAAGGCAGCA
	ATTAATAGCC TACCAACTAA AAAAAGCCCA GGACCAGATG GATTCACAGC CAAATTCTAC CAGA	
	GGTACCATTC CTTCTGAAAC TATTCCAGAG AATAGAAAAA GAGGAACTCC TCCCTCACTC ATTT	
	TCCTGATACT AAAACCTGGC AGAGACACAA CAAAAAAAGA AAATTTCAGG CCAATATCCC TGAT	GAACAT CATTGCGAAA
	ATACTCAATA AAATACGGCA AACTGAATCC AGCAGCACAT CAAAAAGCTT ATCAACCACA ATC	
55		
	GATTATCTCA ATAGATGCAG AAAAGGCCTT GGATAAAATT CAACACCCCT TCATGCTAAA AACT	CTCAAT AAACTAGGTA
	TTGATGGAAC GTATCTCAAA ATAATAAGAG CTATTTATGA CAAACCCACA GCCAATAGCA TACT	
	AAAGCGTTCC CTTTAAAAAC TGGCACAAGA CAAGTATGCC TCTCTCACCA CTCCTGTTCA ACAT	FAGTATE GGAAGTTCEG
	GCCAGGGCAA TCAGGCAAGA GAAAGAAATA AAGTGTATTC AAATAGAAGA GAGGAAGTCA AAT	TGTGTCT GTTTGCAGAT
60		
00		
	AGGTTACAAA ATCAATGTGA AAAAATCACA AGAATTCCTA TACAGCAATA ATAGACAAAC AGAC	JAGCCAA ATCATGAGTG
	AACTCCCATT CACGATTGCT ACAAAGAGAA TAAAATACCT AGGAATCCAA CTTACAAGGA ATGT	GAAGGA CCTATTCAAG
	GAGAACTACA AACCACTGCT CAAGGAAATA AGAGAGGACA CAAATGAATG GAAAAACATT CCAT	IGCICAL GGGIAGGAAG
	AATCAATATC ATGAAAATGA CCATACTGCC CAAGGTAATT TATAGATTCA GTGCTATCCC CATC	CAAGCTA CTACTGACTT
65	5 TTTTCACAGA ATTAGAAAAA AACTACTTTA AATTTCATAT GGAACCAAAA AAGAGCTTGT ATAG	CCAAGA CAATCCTAAG
	CAAAAAGAAC AAAGCTGGAG GCATCATGCT ACCTGACTTC AAACTATACT ACAAGGCTAT AGTA	
	GCTGGTACAA AAACAGATAT ATGGACCAAC GGAACAGAAC AGAGGCATCA GAAATAACAC CACA	ACATCTA CAACCATCTG
	ATCTITGACA AAGCTGACAA AAAGAAGCAA TTGGGAAAGG ATTCCCCATT TAATAAATGA TGTT	
	OLTATORIO ALACTORIA DE TORROCCIO INCORDIZIONO DI COCCATI INGLARATURI IUI	COURT ACIOUCIAUC
	CATATGCAGA AAACTGAAAC TGGATCCCTT CCTTACACCT TATATAAAAA TTAACTCAAG ATGG	
70	0 GAAGACCTAA AACCATAAAA ATTCTAGGAG AAAACCTAGG CAATACCATT CAGGACGTAG GTAT	GGGCAA AGACTTCATG
	ACTAAAACAC CAAAAGCAAC AGCAACAAAA GCCAAAATTG ACAAATGGGA TCTAATTAAA CTAA	
	ACTUALITY IN THE PROPERTY OF T	I momition a contraction
	AGAAAAAAA AAACTATCAT CAAAGTGAAC AGGAAACCTA CAGAATGGGA GAAAATTTTT GCA	ATCTATT CACCTGACAA
	AGGGCTAATA TCCAAAATCT ACAAGAAACT TAAACAAATT TACAAGAAAA AACAAACAAC ACCA	TCAAAA AGTGAGTGAA
	GGATATGAAC AGATGCTTCT CAAAAGAAGA AGTTTATGCA GTCAACAAAC ATATGAAAAA AAG	CTCATCA TCACTCCTCA
75	TITLE COLLEGE OF THE	CICATOR ICACIOGICA
75	5 TTAGAGAAAT GCAAATCAAA ACCACAATGA GATGCCATCT CATGCCAGTT AGAATGGCGA TTAT	IAAAAA GTCAGGAAAC

AACAGATGCT GGAGAGGGTG TGGAGAAATA AGAATGCTTT TTACAGTGTT GGTGGAAGTG TAAATTAGTT CAATCATTGT GGAAGACAAT GTGGCGATTT CTCAAGGATC TATAACTAGA AAAACCATTT GACCCAGCAA TCCCATTACT GGGTATATAC CCAAAGGATT ATAAATCATT CTACGATAAA GACACATGCA CACTTATGTT TATTGAGGCA CTATTCACAA CAGCAAAGAG TTGGAACCAA CCCAAATGCC CACCAATGAT AAACTGGATA AAGATGATGT GGCACATATA CATCATGGAA TACTATACAG CCATAAAAAA GGATGAGTTC ATGTCCTTTG CAGGGACATG GATGAAGCTG GAAACCGTCA TTCTCAGCAA ACTAACACTG GAACAGAAAA CCAAACATTA CCCATTCTCA CTCATAAGTG GGAGTTGAAC AATGAGAACA CATGGACACA GGGAGGGGAA CATCACACAC TGGGGCATGT CAGGGGATGT GGGGCTAGGG GAGGAACAGC ATTAGGAGAA ATACCTAATG TAGATGACAG GTTGATGAAT GCAGCAAACC ACCATGGCAC ATGTATACCT ATGTAACAAA CCTGCACGTT CTGCTCATGT ATCCCAGAAA
TTAAAGTATA ATTTAAAAAA AGTTTAAAAA AAGAAAGTTG CCTTAGTCAC ATAACTAGTA AGAGACATGG TTGGGAATTT GAACAGAGGC CAATCAGTTC CAAATCCATG CTCTTGATCA TTAAGCTGAA CTTATGGCAG GAACTTGGAA GACATGGTAA AATGGGGAAA AACGTGGAGC CAGGGAGACT TGTGAAAGTG CCAGTGCTCC CACTATACCC TGAAAGAAGT ATCTAGACTT ACTITITICT AAGTCCTCIC CTCTAATTCT CTCAATCTCT CTCTCTCTTT CTCTAAGAGA TGGGAATGCT GCTCTGTCAC

TCAGGCTAGA GTGCAGTGGT GCGATCATAG CTCAATCGCA TCAAGGAATC CTAGGGTCTA GTGCCCCTTC TCCCTCAGCC

TCCCATGTAG CTAAGACTAC AGGCACATGC CCCAACCCTC GACTAATTTT TTTATTTTTT ATTTTTGTAG AGACAGGATC

TCACTATGTT GCTCAGGCTG TAATTCTGTC TTGAAGCTTG TCCAATCAGG CTTTCAGCCA CACCAATTCC CTGAGACTGC TCTCACCAAG GTCCTACACT TCACTAACAC AAACAGCCTA TTCTCACTCC TCACTCACC TCACCAGGA GCTCCTGGTT
TTCCTCCTAC TTCACTGGCT ATTTCTTCTG TATCATGTGT TGATTCTCC TCATCTTCCC AACCTCCAAA CCCTTGGAGT
ACTCCAGAGA TCACCGCTTT GCTCTTCTG GTCTAACCTC ACTACTTGG TGGTCCAATT CACACTCTG ACTTTGAATA
CCATTTAAAT GCGAACGAAT TCTAAATTCT GTACAACCAG AACCATCTC CTGTAGCCAA ATGCCTACTC AACATCTCCA
TCCCCAAACA AATTTAGTTG TTCAATAAGC CTCTCATATT TTACATATCC CAAACTGAAC TTCTGAATTT CTCCTCCAAT
CTGTAGGGCT CTTCCCACAG CCTTTCCATC TCAGTGGATT ATAACTCCAT CCTTCCAGTT ACTCAGACCA AAACTTTTTGG
AGTTAACTGA GACACCTCTC TTTTTTTTTCA CAAGTCATAAC CCAATGTGTC AACAAATTTT GGTAGTGGAA ATATTGCGGG
ATTTTTTTAAG AAATCAGAGA GACCGATGGG GTTCAGGAGG ATTTTTTATTA TTTTAGGTGCA CTGGCCAAGT CAGATTAACA ATTITITIAG AAATCAGAGA GACCGATGGG GTTCAGGAGG ATATTTATTA TITAGGTGCA CTGGCCAAGT CAGATTAACA TCCAAAGGAC TGAGCCCTGA ACAAAGAGTT AAGTTACCTT TTAAGCATTT TGTGGGGTGG GAGAGAGGGG TATCTGTGCA GGGGGAAGCA TACTACAGAA GTGAGAAATA AAGACAGTTA TICAATTAAT TGAGACATGC ATTACATCAT TICTTACTTT TCAAGAAGAA ACATGTTTTG CGACTGAGT TTATCTGTCT AGTGACCTTG CAGCTGCACA GCTAGAGAAA CAGGGTCTTC TCAAGAAGAA ACATGTTTTG CGACTTGAGT TTATCTGTCT AGTGACCTTG CAGCTGCACA GCTAGAGAA CAGGGTCTTC
ACAAGACCTG GGAAAGGAGG AGAGGTAAGT CTCACTAGCC ACAGAAAAAC AGCCAGTTAA TTTTTAAAGG GCTCCAGCTC
TTTCTCTTTC TCAGGGGGAG TTGGGTTTTG TTACATACAA CTGAGTTTCC GCTTACACAT TATTTAATTT CTTTTAATTC
CTGTTCCAAA AGAAGCCAGA TACAAAAAGGT TACATGTTGT CTGATTCCAT TTATATGAAA CATATAGAAG AGGTAAATCC
ATAGAGACAG AAAGTAGATT AGAGGTTCCC AGGGGCTGAG GAAGAAATGG GGACTAACTG CTTATAGGGT ACAGAGTTTT
CTTCTGATAA AAATATTTTG GAACTAGATA GACATTTTGT TAGGCCATTC TTGCATTGTT ATAAAGAATT ACCTGAGACT
TGGTAATTTA TAAAGAAAAG ATGTTTAATT GGCTTACACT TCTGCAAGCT TTACAGGAAG CATGGTGCCG ATATCTGCTC
AGCTTCTGGT AAGGCCTCAG GAAGCTTACA ATCATGGCAG AAGGTGAAAAG GGGAGGCAGGC ATATCACATA GCAAAAGCAG
AGCTAAGGAG GGGATGTGGG GAGGTGACAG TCACTTTTAAA ACAGCCAGAT CTTGTGAGAA CTCATTCACT ATCATGAAGA GAGCAAGAGA GGGATGTGGG GAGGTGACAG TCACTTTTAA ACAGCCAGAT CTTGTGAGAA CTCATTCACT ATCATGAAGA CAGTACCAAG AGGATGGTAC TAAATCATTC ATGAGAAACC CCACCCTCAT GATCAAATCA CCTCCCACCA GGCCCCACCT CCAACACTGG GGATTACAAT TTGACATGAG ATTTGAGTGA GAACACGGAT CCAAACCATA TCAGAGATGG TGGTTATACA ATGCGATAAA CGTCACTGGA TIGTACACTT TAAGATGGTT GTTTTATGTT GTGTGAACTT CACCTCAATA AAAAAAAATA TTTAATGTAC ATTCAGCCAA AAGAAGATTT GGAATAGGAA AGGTCATGGA GATATATTAA CAGCCATTTG ATGGGTGGTA AGGAAAAGAG TGGTTATTAG ACTGTTTTGT GGCCCTCAAA AGGTAGAACT AGATCGAGTT GGTGAGCATT ATAAAACCAT CACAAAACCC TGGAGAGAGG ACCCAGTGCT GAAGAACCGT TTGCCTGCCA TGAGACATGA GGGAAGTACC AGTGAATGCC ATTGAAAGCA GCATCCCTGG GTCCAAGGGA TGGTCAAAGG ACCACTACCC AACCCTTCCC TAGCCTACGC CTCCATTACA GATGACCGCA AGATTTATTT GCTCATTGCT GCCAACCAAG GCTGCACTCA CTGCAGTTGC TATCAGTTTA TCATGGGTAA AAGGAATGTG CAGTAGAGAA CTAACTAACT GCCCACCTAC CTCCACAATC CTATCAGGAC AAATCACCAT GGCTCACATT TCCTTACATT TGGCATGTAA GCCCCTCTTA CTGTCTGTCA TCTATCTCCT ACACAGTTCA CCTAAACTGT TCTCTCCTGA CCCAACCTTG ATTTTCATCC CAAATGCTTC CTTGCCATCT CTGGGATTCC TGTCTTCACC ATCACCAAAC TCCCCTCAAT CTTCCAGTTT CCTGTTCAAA CTTTTCTCCT ACCTCCTTGC TTTGTCATTA GCCCGACTGC CTCCCTAGGA CATCACTTCCCCTGCAGATC TCTCAAGATG ACAATATTTA TTCTCCACAC AGCACATACT TCAGGGTTGG AAGGCAGGGG CAATCTTCTC CTITATAATG AGTGCCTCTT ATATATGTTT ATTCATCTGC CCTCTTGTAA AACACACA CACACACA CACACACA CAAAGAAGAA ATAAAATAAC TCTGCTTCTT TGAAGCTTGT GACACTGAGA TAAAACCATCT CACTGTCCTC ATTGTAGTGA CCTCTCAACT CCTCATGCAA GATTGGCTTT GGCACCTAGT TCCTGATCTT CCTTTCCCTG TAAGCACTTC TCATAGTCTT ACGGGACTTC ACCATCCATG GCACAACCAA TACCACAGCC CAGATCCTCA GCTCTCCAAT GACATTTTCC TCCACTAGAC TTGAGCTACC TCTATGCTGC ACTATTAAAA CTGCCTTGAC AAAAATTATA ATAGTGAGAA AATTATGACA GTGAAAGAGA TCTGAAATAA TCAACCCCCA TCTTGCCTTT ACCTTCCAGA CTGCCCTTAA TAATTCCTGA GCTTGGGCCA AGCTATCTTT GGCAGAAATT TAGTITATAG TITAAATGAT AATAGCCCTT CTCCAAAACT AAACTGCCTT TGTAAAACTA ATAAAAGACC ACCAATGAAA GGTTAGGAGG ATGAGAGGG CCTGAATTCT GCTAAGGTGT AGATGTAAAC AATTACCAAC TGTTATTCCG GAGGTCACAA
GATTTGCAAC ATCGCCAATT ACTCCTGCAG ATAACAGCAC TATCATAGAA TCTGATTGGC CTTTTGAGAT GTCTTTTCAG ATTCTTACAT TTCAACTGGT GGCTCTACCT GGACCCATCA ACAAGTCCTG TGGCTCCACC CAGAAGCAGA CTTAACATGC ATTOTIACAT TICAACTGGT GGCTCTACCT GGACCCATCA ACAAGTCCTG TGGCTCACC CAGAGCAGA CTTAACATGC
ACAAGGACCA TITTCCACAC CGCTATGATT GCATCCCAAC CAATCAGCAG CAACCATTCC TCTGCCTGCC AAATTATCCT
TGAAAAAATCT TAGCCTTAGA ATTTTGGGGG AGGCTGATTT CAGTAATAAC AAAACCCCGG TCTCCCATTT GGCTGGCTCT
GCATGAATTA AATTCTTTCT CTATTGCAGT TCCCATCTTG ATAAAATCAC TTTATCTGGG CAGCAAACAA AAGGAACCAA
TTGGACAGTT ACACTGTTGG CAGATATAC TTGCTTCCAA AATTGGATT TTGTTTAATG AATTTATTCT GTTTTCTTGA
AGATGGATAG CTAATTACTC ACACTGGGG GATGTGACCA TCACCCGCCACT GTGCAAATGA ATGTTACCCA TTGTCCACTT
TTGCCAAACT ACATTACTCT ATATGGTATA TGGCTCAAT TICCCAAACT ACATAGTGTT ATATGGTATA TGACCCAATC AACGGTGGCA AAGCTCCAGA AATACCACAT AGACATCAGG
GACACTITAA ACTAATCAGC CTATAGTCCT TITICAGTAA TITICCAAAACC TGGTTGTGCA TCCAAATCAC TTGGTAACAT
TAAAAAAAACA AAAAATAATA CACGCAACAT TCGCTCCCAA TCCTACTGAA TCAGAATATT TTGGGTTGTGT TCAGGAACAT
TAACAGAGTTT TTCAGGGTCC AACGCTATATA TAAATTCAGCA TCCTACTGAA TCAGAATATT TTGGGTTGGT TCAGGAACAT TCAGGAGTTT TTCAGGGTCC AAGGTTTATA TAATTTGAGG TCTCTCTTTG AGAAAAGGAA CGTAAAAGCG TCTTGCTTTT ATAGATCTTA CAAAGATGTA TTACCATGTA AACACATTCC TAGGACCCAG GCCCTTGTAA TTTAAAGGTT TATCTAAGTA

	ATGGGCCCTG AAGCTTAATT TTCATTATCT TCAGGGCAAA TTACCTGTGG GTTAGGGTTT AGGAATATAT CTCTCTGTGT
	ATGTGTGTG ACATTAGCAT GTACGCTTGT GTGGATTTTT TTTTTTTTTT
	TCGCCAGGCT GGAGTGCAGT GGCGTGATCT CTGCTCACTG CAAACTCCGC CTCCCAGGCT CAAGCGATTC TTCTGCCTCA
	GCCTCTTGAG TAGCTGGGAC TATAGGCACG CACCACTATG CCCAGCTAAT TTTTGTATTT TTAGTAGAGT TGGGGTTTCG
5	CCATGTTGGC CAGGATGGTC TTGATCTCTT GACCTCGTGA TCCACCCGCC TCCACCTCCC AAAGTGCTGG GATTACAGGC
	GTGAGTCACC ATGCCCAGCA CTTGTGTGGA TGTTTTAAGC TCCCAGGTGA GTGAATACAA AACTAGATCT TTCCCTTCTG
	TAGCATCTGT ACTGTTTACT CTATGCATCT CAATATTTTT TCTTTTAGTA TCTTTCCTTT TTCTCTCTA TTACTTCCTC
	TIGIGCTATT TITACACCTC CTITTITAAA AAATTTITIC CCTTTTATTT CTATTGACCT TTAGCCCTCA CAATGATTCC
	TACAAGCCCC ATTICTGTAA ATGGGGATTG AAATAATTGC TGGACTTTTG AGAGATAGAT ATATTAAATT GCAAACTGGC
10	AGTAGTGGGG GCAGTTGATA CATAACTAGG TTTTAAAGTC TAGCCTTCTG AGACCACTCA TTCCATTTGT GAAAAGTGAT
	TCTACTTCTT ATTATGAGCC AAAATATGCA TICATTCACC CATGCATTGA TITATTCATT CAATAAATAT TTGTTGGATG
	TCCACTCTGT ATCAGGAATG TGCTAGGTTC TGGGAATACA GCAATGAACA AGGTAATTIT TCCCTACCCC TAAGGAACTT
	AGAGTITAGT GGGGAAGACA GACATTAAAC AAACAATTGT GCAAGTAATA ATCTATAATT ATTTATTACA ATTAAAGGAA
	GGAAGAGACA TATGGATTAT GAGGGCATTA AAGAGGAGAC CTAGTGTAAG TAGCCAGTTC TCGTGAAGGG ACATGTATTA
15	GTTGGAGTTC TCCAGAGAAA CAGAACCAAT GGTGTGTGTG TGTGTGTGTG CGTGTGTGCG TGTGTGTTT GGGGTGTGGG
13	GGTGTGGTAT TTTTTATAGA AATTGTCTCA CACAATTATG GAAGCTGAGA AGTCCCATGG CCTGCTGTCT ACGAGCTGAG
	AACCAGGAAA GCCAGTGGAA TACTTCAAAG TCCAAAGGCC CTGGAACCAA GAGTGCCAGT GTTGGAAGGC AGGAGAAGAT
	GGGTGTCCCA GCTTAAAAAG ACAGTGAATT CACTCTTTTT GCTCTACATA GGGCCTCAAT GGGTTGGATC ATGGCCACCC
20	ACATTGGTGA AGGCAATCCT CTTAGTCTAC CAATTAAATA CTAATCTCTT TGGAAATACT CTCACAGACA CACTGAGAAA
20	TAATGTTTTA TCAGGGTGAT AGAAATCTTC TGAAGTTAAA CAATGGTGAT AGCTGTACAA TCACATACAT TTTTTAAAGGG
	TGCGTTTTAT GGAAAGTGAG TITTATCTAA ATAAAATTTC TAAGAAAGAG ACTTAACACA GAGATAAACA TAAGCACATT
	TATTOTCAAC CTTTATAGTG TTATGTCAAA TAGGTCTGAC ATAAGCTTAA ATAAATATAT ACTTTAAAAA TTATAAAATA
	TITTAAGITA TAATITAAAA TICTCAATAA AACTCAAACA CAAACCACAC TGGTATITCA CACAGCTAAT TICTAATGCA
25	GITTACATAA ATATTTACAA CACTTAAACA ATTTCAAAGA AAATAACACT GTATTCCATA CATAGCCTGA TCACAGTAGT
25	TGTTCTCTT TATTTCCCAG AGTTTTTCTG CCCCTTTAAA AGAACCTCTG CTGTTCTGAT CCTTATCACA TCTCTGTTTT
	GACTGTTGGC TITGTTGTTG CCAGTGTTCA GCCAGAACTT CTCTGAAACT TTTTTTTCAA CACATGCTAA GTTAATGGAA
	GTGTAGGAGA GTTTTGATTC TCACACTCCT CAAGGCTAGA GCAGCTTTGG CAATTACTGA CTGAGAATTT TTCATTGCCA
	GTGATCAACT GAAAACTGGA GATTCCTTTG GAATTGTTAA ATCTGCTTAT AAATAAACAT AAATGCTTGC TCACACAGGC
•	ATTCCTCTCT TCCAGAGCAC CCTAACATAC AGAAGAAAAC AAATAGGGAA TAACTATTAG ACATCTTCAT TCGTTAAAAA
30	TCTACCAGAT GACTCTTTTA CATGGTGAGT TTCTATTGTG AATTTAAAAT CTTCCATAAT ATACAAGAAT TATGTTTACA
	TATCATATCT GACAAACATC TTTGTAGGAA TGCAAAGCAC ATCCATCTTT CTGTATTCTT TTCCAACAAA GACATTCATA
	AAATTATACC TTTGTGTGTT TGCATTTATG CTTTTATTAG TTCAAAACGT TTGGCCTCAT GGAAGTTTTT CATCGTGGAA
	ACCACATATT TCTGAAAAAA TATCTGACAA TATACAAACC TTCCATTCAG TTTTTACTCT CCAATTCTAC CATGTTTTCA
	AAAAACAACT GTAGTAAAAA CACTCAGAAC TITATTCTGG TTAACATCAT GCCTTGCTAG GGGACAATAG TITCCCTTTT
35	TGAAATAAAT TTAAAACAGA TGTAACATAA TTTGTTAATA AACAATGAGG GGGTAATCTA GAATAAGTAA CTTTTACCAT
	ATCATAGTTG ACAGCATTTA CAAGTTTTTT AAGTCCCTAC CACACTTGTA TTGAATGAAG AAGTATGGAA GATTATAATA
	TATTCAATGC AAGTAAAAAT ATCACAATCC TTAAGAACTC TTTAAGAAGC ACTGAATCCC ATAGGGATGA AAGTGATTAA
	ATTGTGCATA GTAACCCTCG CACAGAGCAT TCAGTAGGAT TTGCACCATT AACAACCCTC CATGCATTTG CCTGTGGGCA
	TTCAACATCT GTCATTTTTT TAAGTTATAA TATTTTTAGT CATTTTTTTC CTCTAAACTC TGGATAATTA TTATTCATTC
40	TTATGACAGC AACTGTGTAA TCAGCTGTCG AAACACTGTG AAGGGCAAAA GAAAGAAAGC CACAAAATAT TGTGTTTCTG
	TGCCAAGATT TTACAGCGAG CAAGGGAGAG TTAGAAAAGG AATTCTGAGA TTTCAGAGTC TTGGTCTCTT CACCTTTGCT
	TGGAAGAAA TATCCTTTCC CTTCATTAGC CAACACTTTC TTGATCCTGA GAGTAGGAAA GGGAACACTG AGTCTTTTCA
	GITGAAGGCC GTCCTTGCCT GCTGGACTTT GATCTATTGA AGTGGTGATG GGTGTTGCGG TTTCAGCCAT AAAGGCATCT
	GGCATAGTAG GCAAGAAGGG CCAGAGACCC GAGGAGAGTT ATCTGTCTCT GTTAACTTCA GTGTATCCCT CTAGTTCCCC
45	AGATGCACCT GTTTCTGTAA ATATAAACAT GCATGTCATC AGAACACTTA ATATTCTGCA TACTGATCAT GACAACAAAA
	TGTACCTTCT AACACAGACA CTCTCACTAG GATAGACCAT GTAGGAACAT CGAATTCTAT TCAGTTAGGA CAGTGATGAT
	GTCTACATAT TATACCTCTG TCAAAACCTA CAGAATATAC AACACAGCAC AGAGTGAATT CTAATGTAGC CTGTGGACAT
	TAATGAATAA TAATGTATCA ATATTGGCCC ATCAGTTGTA ACACTAATAT AAGATGTTAA TAACAGGGGG AATTGAAGGG
	GTGGTGGGGA GATATGTTGG AACTCTTTGT GCTTTCTGCT CAATTTTTCT GTAAACTTAA AACCGCACAC ACAAAAAAAG
50	TTATTTTAAT TTTTTAAAAA GTATTCAGAG GGACTTGACC TTTCCAAAGT CTCTCAAAGC AGGTCGGAGT AGTTAAGAAC
	ACAAATTTA GAACCAGACT GCCAGAGTTT GAATCCTGGC TACACCACTT ACTAGCTTTG AGATTTCAGA CAATTTACTT
	AACTTCTCTG TCTCATTTTC TTCATCTGTG TGATAAGAAA TAAAGTAACA GGCCAGGCCC AGTGGCTCAC GCCTGTAATC
	CCAGCACTTT GAGAGGCCAA GGCGGGTGGA TCAGGAGTTC AAGATCAGCC TGGCCAACAT GACGAAAAAA TACAAAATCT
	CTACTAAAAA TACAAAAATT AGCTGGGTGT GGTGGCAGGC ACCTGTAATC CCAGCTACTC AGGAGGCTGA GGCAGGAGAA
55	TIGCTIGAAC GCAGGAGGTG GAGGTTGCAG TGAGCCAAGA TCATGCCACT GCACTCCAGT CTAGGCAACA GAATGAGACT
	CCATCTCAAA ATTAAAAAAA AAAAAAGTAA AAAGAAAAGA
	TTAGAAAAAT TCCCAGAATA TAATAAGTGC AATGTAAGGG TCAGCTATCT TCATTATTAT TATCTATCAT AAATGAAATT
	ACACAATAAA GCTAGATCCG TTTCTTTCCT CTCCTTCTAC AAAAAATAAA GCAACTTTCC AGAACAATAC CCAGGTGATG
	ATTICTCCCC TGCTCCCTCC CTAAGATATT GGCAAGTTTG GAGGGTTCAA GGAGAAACAG AGCATGTAGA GAAGATACCT
60	CTCTCATAAC CATTTGTGAT TTACAAGTCT TACCIGATTC TTTTGAACTT AAAGGATGTA AGAAGGCTTT TGGTAGCTTC
	CATCTGATTC AAGGCTTTGG CAGCTGCTGT GGAATACATG AGAACACTAG GTAAAGCACT GTCTTCCAAC ATGAAGAGAG
	AAAAATATGT GGAATGTTCA ATGGCATGCT TIGTATAAGA ATGCAACTTA CCTGGCAGGA ACAAATTTCT TTGCTGCAAA
	AGAAAAGACA AACAACCATT AATTCAGACT AAATGACTTT TAAGGATATA TTAAATCCAG ATACAATATG ACTTAATTCA
	TCAAGTGTTG CAAACTCGAT GCTTCAGGGC CTCTGTAATA ATCAGAGCAC AAGCATGGCT CTGTGGCATC TAGGGTAAAA
65	
05	TGCAAAGTGC ACAGCCATCC AAAGGGCATA GCAGCTTCCT AATGCCAGCA AATAGCTACG GGGTCATCTT GCCCAATTCA
	GCTCCCAATT TTTCATGAGA AGTCCAAAGT CTTAATTTAA ATGTGAGATT TCCTATTTTG TAAACGTCAG AACTTAACTC
	AAAAATGTTT TAAGTACTCT TAAACATGTA AGCCAAACAA ACCATGAGTG TAGTCAGATG TGCTTCCATA TTCCTTATGA
	GAGACTOTCA AATTTAAGCC TGTACTCCAA ATAAATCTCC TTAGGAAGAA TTTTATCCAT TTTCCTTAGA GTGCTCATCA
70	TGGCAGTTCC ATTGCACAAT TCCGGGAGGC ATCATATAAT TCAACATGAA TAGCACCCCC TGGAGTTGTA CAATATTAGG
70	CACGACTAAC ATTITATIT CCTGAAACAC TTCCCACACT GAGTTGTACT ACTAACTCTT TTCTTAATAC TTCTGCTTAA
	TTATACTGCA TTTTATCCAG ATTCTAATTA TTGTTTAAAT CAGTAAGCAA GACCATGACT TATCAATGAG AAAGAAATGT
	ATTITICAAAA ACATTITIGA AGTACATTCA TAAACTTCCT CACCTTICCG TAAGCATTIC CGAAGCCAGA GGAGAAATGG
	TGCTAATGTC AGGAGGGAGA GTCCAGCAGC AGAAAGTCCA GCTACCAAGG GAATGTTGGA CTCAGTGGGA GCTAAGGAAG
	TAAGAGACGA AGAAAGGTCA TGAGGAAGAA TTGATGTTAA AGTCTCTCCG TCCTGTCCCT TTGGCCTTTT TTCTGTACAT
75	TCATTACTAG GAGCAGAAGA GCTATCTAGT TTAATACAAG AAGCAGAGAT GTGGCATTAC AGGCCTTTGA GATCTGCTCC

	AAGCCACCTT TGAAGCTATT TCCACCATTG GCAGGCAGAA CTCTAACTTG CCAAGCTCGT TCACAATACC ACACCACACC
	TIGGITAATA AACACIGCAC TIGCTIGCTC TCTIGCTCTC ACTCCCTCTT GTTTTCCATT TCCCCTTTCT CCTCTCCTCT
	CTCTGTCTCC TTTTTCCAGT TGTCAGAATT CTACCCTTC CATCAACATG CAACTTCTGT TTTTTCTCTA TCCCCATACA
	ACTTAATATT CACAACTTGT CAACCTGGGC GAACTTTCTG GTTTGGATAT AATGAATAGT TGATTACTGT AACAAGATAG
5	CTCCCCCTTT TTCTTTTTAA TCACCAGACA ACCACCATCA ATCAATGCAT CACCTTCACA GGTAGGTAGC AGGCCAGACC
	AGTGTCCTGT GGCTCCACAT GTCCGAGCTG CAGAGCCATT GAGCGTCCAT CCTTCAGGAC AGGCGAACTT GCACACAGTG
	CCAAACACGG GCTCCCCACT GCAGCTCATG TTGATCTTTC CCGGAACTGC CAGGCTTGAA CATTTTACCA CTGCAAATGT
	TAGGTACACA GGCAGAGTTT CAGAAAAATC TACTGGAAAA CTTCCAAAAC TTGCTTAAAA GTCAACAATG AATGTAAAGT
10	GTAAGCGCTA CTTAGTTTTC AGCATGTAGG AAATTAGGAC CAAACCCCTT TGGGGCAATC TAGGTTCAGA AACTTTATGA AGTATTTGAC CTGTACCCTA AAAAAGTCTG CACTCAATTC TACCTTGGCA GGAAGGAACC TCTTCTGTCC ATTGTCCCTG
10	AGATGTGCAC TCAAGTTGAG TTGATCCATG TAATTCAAAT CCCTCCTCAC AGCTGAAGGC ACAAGAGGAC TTGTAGGTGA
	ATTCTCCAAT AGGGGAATGA GCACACCTCA CCAAACCCTT CGGGGGCTGG TGGACAGCAT CGCATCTCAC AGCTGGAACA
	CACGAGAGAG CACTITAGAA GTTTGTTTGC ATCTCCAGCA ATACGTTTCC CAAGGTAACC AAGTTCCCAA GCTCTTCAAT
	AGITCTTTIT ATCTTAAAAT AAAATAAAAA CAAAGACTGT ACCTTCACAT GTGGGCTTCT CGTTGTCCCA CTCCCCTGTG
15	GGGCCACATT GGAGCCTTTT GGATCCCTTC AACACAAAAC CCTGCTCACA GGAGAACTCA CAGCTGGACC CATAACGGAA
	ACTGCCAGAA GCACTAGGAA GACAATTCAT GTAGCCTCGC TCGGGGTTGG ACAAGGCTGT GCACTGGAAA GCTGAGACAT
	CAAAATGATG GTCAGAAAAT ATTGCAGTGG AACTAGAGAG TACTTGGCGT TTGTTGAGTG AACCCAGTTC ATTCAAGCAA
	CACTTGGAGA ACTGAAGATT CTTTATAATT CCCTGGACAA ATGGGAAGAT GGCTGTGTTT TCTTTGAATT TCAGCCCCCT
20	CACTGATCAT GGCACTAATT AAAAGACTAA TTAATCAGAA CATTAGTTCC TGAGCACTGT TCTTCTAACA CACAAAATAA
20	ATTATGGTCC AAGGAAAGAT TTCACGCAGT CTGAGGACAA CATATGGGTC ATGGATGTTT ATAGATGGTG CCAAAAAGAA
	AGAAAAGAAA GCACCCCTAT AAAATTIGTC TGTTTTGCAG TTTGGTTTTT GTGTTATGTT TTGCTACTGG AAATCATTCT GTGCTGGCTI TGGCTAGGAC AAGGCCAGTG CCTGATAGTA AAAACTGCTT GTTTTCAATA TCCTTGCTCT CACTTTAAAG
	TGAATTAAAA TTTACTGCTT ATATATGCAT CAATACTATC TCTGTAGCTG ACACCATGCT TGAAACAGTC TCATCACTGC
	TAATTATGAG CCATTICAGA AGACAGGTGT GATGAGAGTT TTACATTCAA ATCATGTTCT CATTATTCTG CTTTCCGAAT
25	TITCTAATAT GATTCCTTTA GATTAAGAAT TCTGTCTATT CCATGCTAAT GTCTACAAAG TTTTATCAGC ACATCACAGT
	TAAAAAAAA CAGCAAAGAA TICATICTIA ACACATATGA TCCTTTCCCT GGCCAAACAT TAGTTCTTTT AAATGAATCT
	CAAAGATACG AGGGTTGCTC ATCAAATCTG ATTTCTATAG TTAAAGTGGG TATTGGTTTT TTTTTTCACT GTCCAAGTTT
	GAAGATGGTT GTTCTTTAAG AAAGTATAAA TCGAAGGATC TCAAGCTTAC CTTCACAAAC TGGGATTTGC TGTGTCCACT
	GCCCTTGAGT GGTGCATTCA ACCTGGGCTG GTCCCTGCAA CATGAAGCCT TCCTCACAGG TGAAGTTGCA GGATGATTTG
30	AAGGTGAACT CTCCAGCAGG GGAATGGCTG CACCTCACAG AGCCATTCTG AGGCTGGCGG ACGGCCCTGC ATGTCACAGC
	TGTAACAAAT ATACGCATTG ATATTAGCAC GGCCTAGAAT TAGCTTGCCC ATTTCCAGTA TGGGTTGAGA GAAAGAATGT
	TCACAGTAAG TCTCCATGTG GAACAACTCT ACCTTTACAC GTTGGCTTCT CGTTGTCCCA ATTCCCAGAT GAGGTACACT
	GAAGGCTCTG GGCTCCCATT AGTTCAAATC CTTCTTCACA GTCAAATGTA CAGGTTGTGT TCCATGGGAA GCTTCCAGGG TTTTGGAAAC ATTCCACGAA CCCATTGGCT GGATTTGTCA CAGCATCACA CTCAACCACT GAGGATTTTA AAGAGCACCA
35	TGAATTITAC AGAAGAATGA TCTTTTCACT TCCTATTGAG CTGGGTGCCT AACAGAGTGA GGAAGCTGCC TTCAAAGGGT
55	AGATCCCAAA GTCCTATGTC AATTCTTAGG GACATGCACA GCCAGAATAA AAGCTTTTAT TCTTTTTCAT GGATATTCTA
	TCTTTTCTGA TTTCCACTTT GCCTATGCTG AGTGGTCTCT AATCTATGTT ATCATTTACG TGAGGTAAAA ATTTAAAAAA
	AATAGATTCC AGATTAGGAG TTATGACTAG TACTGACATA CGTAGGCTAT TCATTTATTT TAGCCCATCA GAGCCTGAAG
	AACTGATTIT TCTTTTTTTG GCCTCTGGTT CAGAAAGATA AAATTAAGAG AGAAAAAGAG ATACTAAGAC TGCTTGACTA
40	TCATGGTCTT AAGTTAGTCC CATGGCTTGG AAAAGTTAAA CAGGGAAACA AGATGAGAAA TCCATTGAGA TTTCTAGAGC
	TTTATTGTTT TATGGTCTCC CTTACAAATC ACCAGAGCCT CAGAAACACC CATTTCAAGC ATAGAATAAA AAAACCTCTC
	TCAACCCAAG CAGGTACTGG GTTGGCAATA TACATTGGCT GAGAGAACAA ATTGTATTAA AAACAAAAAC AAAAAAAAAA
	CTTTCCCTGA AGTTTTGAAA ATGTAAGTTG AATCAAAAAA CAGAAGCAT GAGGGATGAG TTACAGAACG TTCTGTGCAT
45	TCTCAGAGGG ATTTACCATT GCAGGCTGGA ATAGGAGCAC TCCATTCTCC AGAGGACATA CACTGCATGG TCTCCATGCT GCTTGGCAGG TAACCCCTAT CACAGCTGAT AGAGCAGGAA GAATTGTAGC TGAAGTTTCC CAGTGGGTGA CTGCAAACCA
73	GGCTTCCATG CTCAGGGGAT TCCAGGGCTG TACAGTTCAC AACTGAAAAA GAAACCCAAA TCAGTTCTGC TCATCTCTCA
	CCTITIAACAG ATAAGAACAC TGGAAACTAG AACTACAGIT TGGTTTTTT TTTTTTTAGT TTAAAAATTT ATAAAAATTT
	TAATGGAATT TGTAAAATTG ACTGTAATTC TACCCCTTTT CTTTTATTCA AGAAAATGCT GATCCATAAC AACAACAACA
	AAAAAGCAGT GATGACAACC ATAAAAAAGA AATATTGAGT GATATGGGGA GAGTAGTGTA ATTGTGTTTA CCTCAAAACT
50	GTTCAAATTA TATGAACAAA CACAGCAAAC TTAGGTACCA CAACAAATTT CTTGTTACTT TTCTCACAAC TGCTAAAAAT
	ACTACAGTAA GCTTCCAACC AGGATGAGAA CCATTCACAA AGCTATATTT CAAATTTAAG TACTAGAATA CATTACAAAT
	TTTAAAACCC TAATGCTGCA CTGTCTACTA TAGTAGCCAC TATCTGTGTG GCTACTCAAA TTTAAACTTG AATTCGTTGA
	AATCAAATAA CATTTAAAAT TCAGTTCCTC AGTGTCACCA GCCACATTTC AAGTACTCAA TAACCACATG TGGCTCATAG
<i>E E</i>	GTACACACTG GAAAACACAG CTATGGAACA TITCCATTAT CACAAAAGCT CTACTGCACA ACGCTGTGCT AAGGAATCTT
55	GGAGAGAAGC TCATCTAACT CTCTTAATGT ACAAATTTAG GAACTGAGAC CTCATTTCAT TCAAGTGACT TGCTCCATGC
	TACACGGCTA GTCATTACAG AGCCAGAGGC CAGAGCATGA ACCAAGATAC CCTGGACTCT GTAACTCACT CATTTCTACT GCAACGTCTT GTTACCACCT AGATGAGGTG AGTACATGTT CCTCGCAGGG ACACAGAATT ACAGTTTATT GAATGTGTCC
	TOTGTGCCAG GCACCATGTA ACCATGAGCC TATGAAGTTC ACACTATTAT TATCCTCATT TTACAATGAG AAAACTGACA
	TAGAGATTA AACTATCTTG TCAAGGTGCC AAAATAAATA ACTGGTGAAT CTAGGACTCA AACCCAGCAG GGTCTGACTT
60	CATAGTCTCA GCTCACGATC ACCATATGAC ACCATCTGCA CCAGGGAAGG GAAGGCATGC AGACCTGACT CTAATGCCAG
	CTAGGACGTG AGATGGTGCT ACCATCTCAA GTGAAGAAAG AGGCAAGAAC CAGACTTACT TTGCTCACAC TTGAGTCCAC
	TGAAGCCAGG GTCACACTTG CAAGTGTAAT TATTGATGGT CTCTACACAT TCACCGTGGC CACTGCAGGA TGTATTGGTA
	CAGGCAGCTA CGGAAAATAC AAAGCATGAT GAGGAGGACT ATTACTGTGC TTATACTGAG TGCCTTTGAT TTTAGAATCA
	ACAGTGTGCA ACAGAGACAT CAGCAGTCCT ACAGAGTGCC ATAGACTITA ACTGAAGTGT TTTACAAAGT TCCAAATCTG
65	AGTITICAGGC CCACCTATCC TAAACCTIGA TGCTAATGTA TAGCTGTGGC TGGCACCTAC CGTAGAAAAT TTACTTCTTC
	ACAAACTCTG AAGACAGTTC CCCTACCACA AATAAACAAG TAATTAAAAT ATGTATTGTG TGTGTGCATT TTTATATGTA
	AAGAACTACA TATTTGCCTA CAGTATTTAT ATATATTTA TATATATACA TACACACATA TATGTGTGTA TATGTGTGTA TATATATATA TAAAATCCTA TATATATATA TAAAATCCTC TACACACATA TATGTGTGTA TATATATATA TAAAATCCTC TACACACATAT ATATATAT
	TGTATATATA TAAAATGTAT ATAAATGCTG TAGGCTATAT ATATATACAC ACACACATAT ATGTGTGTGT GTATATATGT
70	GTGTGTGTGT ATATATAC ATATCCACAT ATTCTTGCCC ACATTCACAC AAAACAGCAA AAGAGAGAAA CTTTAGCAGT TAAACAGAAT CTTTTGGAAC ATAAAATGAC CACAATAGAG AGCAGTTTTT GCATGCTGTA AATTTGCCAA GATGCCCACA
, 🗸	CACTGAAACT ACCTCCCACT GCTGCCGCAA ACTCCCTACC TGTGTAGCAT AGGGCAAGCT TCTTCTTGCT GCACCTCTCA
	TCATTCCACA TGCCCACATC TTTTTCTCTC TTGATGTAGA TCTCCACGCA GTCCTCATCT TTTTGCCTAT TGTTGGGTTC
	ACCTGGAGCC CAGTTCTTGG CTTCTTCTGT CAGAGGTTTC TGGGTTCCTA CCCAGACCCA CACATTGTTG ACTTTTCTGA
	TICCAATCCA GTAATAACTT GGTGAATAGC TCAATATGGA GTTTAGGTAC TCAATCTCTT CTTTGTTTTG AATTGCAACC
75	AGGTGTGTGT ACCTTTGCTG ACAATAAGCA CTGGCCTCAT CATAAGTCAT AGCTTCCGTG GAGGTGTTGT AAGACCAGGC
	167
	107

TCCACTCTCT TTAATGAGAA GCACTAGTGG GAGAAAAAGA AAAGAAATGG TAGAGTTTGG TACTGTTGTG GTTTAACTCT GACAACTGTG CITTITATTG TCTTATTTTT GGCAATGTTT GTGACATGGC CCAGACTTTT CTCATCTTTT CAAAAGAAAGA AAGAAATGG TACGTTT CTCATCTTTT CAAAAGTAAAGAAAGAAAGAAACAAG CGACTTATT GTTATCTCTT TTGTGACTGC CACCACTAG GTACCTTATC CACAACTCACT CACAACATTA TAGTATACCC ATTTTGTAGT AGAATAAATAA TCAGAATAAC TAAGCTTTAT TGAGCACTTA GTATGCACCA AGAAGCACTG TATGAGGTAC TTTCCATGAA CCATGCTATT GAATCCTCAC AATGCATCTG GGAAATAAGGT CATTATGATC CACACTTTAC ACTTAAGGAA AGGGAGACAC CAAGAGGTAAA AGTAAATGAC CCCAAGCCCA GGGAAGAACA CATTGCAGGT AGAGGTCAAG GATGCTGCCA GATATCCTGTG GCAGGACAAG CACAGGACATT TCAGGCTGAAA ATTCTATAACAC TGCGAGAATG AGAAATCTTG GTCTAATGGC ACTGACTTAC CCAAAGTGAG AGCTGAGAGA AACTGTGAAG CAATCATGAC TTCAAGAGTT CTTTTCACCC AAAGGTTTAG GCTTGAAATA CTTTCCTGGG GAGATAAAAC ACAAAATGAA TTAAAGAAGG AAATCGTGGG TAGCTAGTTA CATTATTCTA CCATGATGTT TAAGGCAGCA TCCTAAGATT TTGGGCAAAG GACACTAGTG CAATAATCTT TATTTCAGAG TITAATCAAA TAAATAAACA AATTTTAAGA CTITCATTAT TAGGTCAAA GAGAAAAGAC AGGTTTTAGC TACAATAACAA TAAGAGCTTG TACAGATGTG GTTTTTATTA GAAGGCCTTT TGCATATCTG TGTTTCATGG CCCGAGGCTG CCCTTATAAA GCGTTCTGCA CTTACCGTTT TGGGAAGCAG TTGTTCAAAC ACAGGATCTC TCAGGTGGGT ATCACTGCTG CCTCTGTCTC AGGTCAGTAT AGGAGTTTTG ATGTGAAGTC AGCCAAGAAC AGCTGAACAC TACTTCGGCT GAGGCCCTTT TATAGGAGGG ATTGCTTCCT GTGAATAATA GGAGGATATT GTCCACATCC AGTAAAGAGG AAATCCCCAA CAGGCGGATC ACCTGAGGCC GGGAGTTCAA GACCAGCCTG ACCAACATGG AGAAACGCCA TCTCTACTAA AAATACAAAA TTAGCTGGGC ATGCTGGCGC ATGCCTGTAA TCCCAGCTAC TCGGGAGGCT GAGGCAGGAG AATCGCTTGA ACCCGGGAAG TGGAGGTTGC AGTGAGCCAA GATCACGCCA GTGCACTCCA GCCTGGGAAA CGAGTGAAAC TCTGTCTTAA AAAAAAAAA AAAAAAAGAA AAGAAAAGAA AAAAAATAAA ACGGAAAACT ATATATATA ATTTAATTGG TCAAAATTTT GTTTAAAATT TTTGAAATGT TAATGTGCAA AGAATAAAAA TTCTTCCACA ATGTTAACAG TGACTAACTC TGGATGGCAG GATTTGGGAT AATTTTATA TCCTTCATTA TTATTTTCAG GATTTTAAAG TTTTTTTCAA TTTCCCTTTT TTTCACCTTT ATAGTAACAA GAATACAGTT TAAAGAAACT TGTCTCTAGG CCAGGCATGA TGGCTCATGC CTGTAATCCC AGCACTTTGG GAGGCTGAGG TGGGTGGATC ACCTGAGGTC AGGAGTTCCA GACCAGCGTG GCCAATATGG TGAAACCCTG TCTCTACTAA AAATACAAAA ATTAGCCGGG GTGTAGTGGC GCATGCCTGT AATCCCAGCT ACTGGGGAGC CTGATGCAAG AGAATCGCTT GAACCCAGGA GGCAGAGGTT GCAGTGAGCT GAAATCACAC CATTGCACTC CAGCCTGGGC GACAGAGCAA GACTCCATCT CAAAAAAAAA GAAAAAAGA AAAAGAAAAG AAAAGAAATT TGTTTCCAAA TGCAACAGAA GGAGATGTAT GTGGTATCCT ATATTCCTGC TCHTCATTITT GACATTICTT CTGGGTGATT GTATACATTC CCCATCTCTG CATCTACCC TATCTAAATG ATGGTAACAG
TAAATGGGGA TCATTTTAAT TTCCATATTC TGTAGGTTTT CAGAGCTCAA GTCAAGCTAA TATTCTATAT CTACAGCCTT
TCAAAATAGG AGGTCTATCT AAAAATGTAC TGTCAGCAGA CCTGAACGAG TAGTGGTAAA AGCCTCGTTT TTCTCTTTAC TTGTTAGCAC TGGTCTTTCT GTGTTCATAA AGATGTCAAG ACCCAAAAAA AAAACAAGAA AAGAGAAGAA AAATTCCAAA AAAGACAACT GATTAGAAAA AAATAACTTA ATTAACGAAT TTAATTCAAC CCCTATCAAA AAGCATAGAA TITATTCCCT CCACCTTACC ACTCTCTTAC ATGATCCAGA TACTGACATT ATTCCCAACTT TTTATCCCAC TTTACTTAGC TCAATGTGGT TGTTGCTTCA ATAAATTCAG AAGAGTAATC ACTCATATAG TGTTTATTTA GATTTTAGGG CAGAATGTCA AGTTGGGTTA ATACATTATC TGTATGTATT TTATTTTTAA TAAAGTATGA ATACATTATC TGCTATTTTT AAAAAGCATG GTCAAATGTA TAGAGTAGCC AAATCTTAAA AAACAATTTA TCTTCGATAT CAATAAAGTA CCTAATAATT ATATTGCTAA TAGAAATTAG TCGTTAACAT CCCTAGATAA CTAACTTAT TATTGCGAAT TTTTCATAAC TAAGTTTATA GTTTATCTCT TCCCCTTTTT AAAAATTAGTT CAAAGATATC TAAAAATAGC CCCAGTGGTG ATGAAGTTTC TATTTTACTT ACATATATAT GTCCTGGACC CCCAATTATA ATCTCTAACA TITATIGAGT GCTTACTATG TGCCAGGCCA TATTCTGAGC ATTITTGTATG TTCACCTATT GATTATTCAA TCCGTACAAC AGCCTATGAA ATAGGTACTC CTATTATCCC CATTTTACAG ATGAGGAAAT TGAGAATCTG GGGATTTTAT CTCATTCAAA AGCACAGAGC TAAGGGTTGA AACCAGGCAG TTGATATCCA GAGCCCACTC CCTTACCTGC
TACTCCAAAC CATGATTTCT TTTGTTGTTA TGCCCCGAGA TTCCTTGTTC TACCCAAGTT TCCTGTACTC TTCTTGCCCT CTTCTTCCTG AGACATCCTT GACCATCACA GCTCTCCACT GAGATAACTG TGTCCTGGGT TCTGAGACAT GGGGCTGGA
AGGGACCCCA GGGACAGTGA GCAGTAGGA GAGGATGCAG TGAGAACAGA CCCTGGATCC CCGGTGCATA GGCAGGGAGA AAGTGGACAA AGGAAAAAAC AAGCAAGGCA GGTGGAGCCA TGCCTAGGTA AAGTTGATCC CTAAGCCACA GTTCCCAGAA GTTCCTGATT CAAAAGCAAA TTTTCTCTAA GGTCAAAGGG CAAACTGATT ATTCTAAATT CTAAACTGAT TATTTCTAAA AAGGGGCCAT AGACAGACCC AGCITTICCTC TCGTGGAGAG GCCCTGGGCC AGCGCTGCGT GGGAGTGGGA TTACAACCAG ACTATAGCTT CTTCACCTGC TTTTTCCTAT CAGGATTTCA TAAGAGGCAA TTGCTTGTTT TTTGAGGGTG GGGGCAAATC AGGGGGGAGTT GAAGAGGAAA TTGGGTAAGA TTTGAATAGT TGGGCATGTT GAATATTATG AATATCATCT CCCTCTTCAA ATAATCCAAA ATATACCCC AAGAAACAGG CTGATTAGAG GTGCTTCAAG GCTCCACTGA ATCTCCCAAG CTCTGAAGAT GTAGCTAGCT GTTACCGGAT TGCCGGTTTT CAAGCCTCGC CTCACATGGA CCCTCTTGGC AGTTTCTCGC ATGGGGGAAG CATCCGCTAC ATAGATGGGA ATGAAAAGAG GAAAGAAGAC CGTGCAAACT CAGGCACACC CCGGTGTCTG CCACCAGTGC
TATTTAATCT CTGAGGTGTC ACCCTTCCTG GCTTTATTGT CTCTTCCTGG AAGTCTCTTG TCCTCCTCC CACACCCTTT
AATCAGGCAT CAAAGACTTT AACCAGTTTT GCTGTGTGCC CAGGCCCACT CATTCTCACT TTTATGGCAA AGGGAGTGGG AGACAGAGAG ATAGCCAGAA AGAAGAGATT GGGGACCCCA AGACAAATGT TAGAATTTTA ACCAAGGCCA CCCTGTGGAC AGGAGATTAT TGGGTTTAGT GGAAAGCAGC ACTGGCCACA ACCACACGTG GCAAAAGCAT CTATCGAGGA GTGAAGTTAT

	ATTTGGTGAA	TGTGACCGGG	A A GC A GG GG C	AGTGGTGTCC	TOOTGOOTE	CTCACCCACT	CTCTTCCCTT	ACCTCTGCGA
	AGGCTTATTT	TACCCCTGAG	TGCTTAGTTT	TGAAAGCCTT	AGTTCCCTCT	CTCCCATAAA	AAACCTCTAC	TCTGCTAACA
		CTTTGCAGAG						
5								TTGATCAAAA
,		TTTGATGAAA						
		ATATCTGAGT						
		TTTAGAATAA						
		CAGGTCTGGG						
• •		GATCCTATCA						
10		AGCTATAGGT						
		TTGTAAAGTG						
		AGAATTCTTA						
		CTTTTCTCCT						
		TTCATGTGCT						
15		AATGGGAATT						
	CTGGTTAATT	AAGAGAACTT	TTCCTGAATG	TAGCCAGACT	GTTTGCCGAC	TGTTGTTAAC	ATGAGGGAAG	AAATACCCCT
		AGAGCCCCTT						
	TATTATTAGC	TTTGTTCTCA	CGTCAGAAAA	CTTCTGCTCT	GGCCACTTTT	AAACATATAA	CTTGGATITT	ACTGTATTAG
		AATTACAGAC						
20	TAAAATAGGT	GATTTTGGAG	AAGTAGGAGA	AAAACCTGGA	TTTTCTAGAT	CTCTTTAGAG	CTCAACAACT	GATATAGTTA
	ATTATGTAAG	TCTTTGATAT	TTGGAAATGA	TTGGATTAAC	CGGATAACAA	TGAATATTTA	AATACAGTGA	TTTGGCCAGG
	AGCAGTGGCT	CATGCCTGTA	ATCCCAGCAT	TTGGGGAGGC	TGAGGCGGGT	GGATCACCTA	AGGCCGGGAG	TTCCAGACCA
		CATGGTGAAA						
		AGGCTGAGGC						
25		GGCAACAAGA						
		AATGAGCTCT						
		GTGCTTTACT						
		AAGCGTTCTT						
		GCATGGGCCT						
30		GGACAAGATA						
50		TGTGTTACTC						
		GTTTTTACAT						
		ATCGGGTTCC						
		TAGTAGGAGA						
35		GCAGCCATGG						
55		TCTGCCTAGG						
		TTCAAGTGGA						
		TGCTGTGTTG						
40		AACACATATT						
+0		ATTGCCAATA						
		TGTTGGCAGA						
		AGCTTCTAGA						
		TCTTCAAATG						
15		TGGGATTACA						
45		CAAAGTCCCT						
		AAGAAAGAGG						
		GTCATGTCTT						
		ATAATACTTA						
50		ACAACATGCA						
50		AACAACCAGG						
		ACCTGTAATC						
	GCCATGGTGA	AACCCCATTT	CTACTAAAAA	TACAAAAATT	AGCCAGGTAT	GGTGGTGGGC	ACCTGTAGTC	CCAGCTACTC
	AGGAGGCTGA	GGTAGGAGAA	TCACTTGAAC	CCAGGAAGCG	GAGGTTGCAG	TGAGCCAAGA	TTGCGCCGCT	GCACTCCAGC
	CTGGGAGACA	GAGCAAGACT	GTCTCAAAAA	AAAAGAATTC	TGCCCATCAT	AGTAGGCTGT	CCTACAGAGA	CATAACCCAG
55	GAATTAGGTG	AATGGCTAAC	CTAAATTAGC	ACTGTGATGT	GTTTTCTGAC	TTGGTCCTTA	TAGCTCCTCT	GCTTAGATGT
		CATGAATGCA						
	TGCCTCATCC	ATGTCCCCTT	GGCATTTATC	TTTCTTGGAT	AACCCAACTC	TATTAGTTTT	TATATCTCAC	TTGTTCCTAT
	ACTCTGTGAA	CTGATGTCCC	ATAAATAGAC	ATTTCATTTT	GCCAGTCTTC	TTGAACAATA	ATTACGATTA	TTAATCTAGC
	AGTTATCATT	AATTGGCCAC	TTCACATTAG	ACACAGCACT	TAGGACTTAA	GAATACCATG	TCATTTGATC	ATCATAATAT
60	GGTCAGGAAT	TAAGTATTGC	TATCCAAATT	TTACAAAGAA	GGCACTGAGG	GTTAGAGTTT	AAATAACTTG	CTTAAGATGT
	CATAGCCTGT	AAGTGACAAA	ACTAGGACTC	AAATACAGGT	CCATCTGACT	CCAAAGTCTA	TGTTCTTGGC	TACCACACTG
	CCTCTCCTAC	AAGTGACCTG	TGGTTTTACT	ACTATATTCA	CACTCTACTA	ACTITACCAT	CTCCCATGAG	TCTGTCTAGA
	GGAGGGCACA	CACAGCACAG	AAAACACATG	AATGCAAAAT	AAGGAAGGC	CTACTTACTA	CACAGAGCCA	TTCTAATACC
	TGATGTTTGC	TCTAATCCAG	TTTTACTATT	AATTAGTTGC	TGGTGCCCAA	GTTTTTACTG	AGAAATGGGG	ATAATTTTGG
65	AAGTCATAAT	GATGCCTTCT	TCTCATAGGG	TATTTATTT	GTTGTTGTAT	CTCCAGGCCC	CAACACAGCC	TGGCTTTTAG
	TAAATGATCA	AAAATACCTG	TTGAATGAAT	AAATGGAGTC	ACCTGAAACA	TCTTAAACAT	TTCTTCATCT	GTCCTAATCG
	TGGATTTCAG	GATAGTAAGC	ATCCTAAAAG	GAAAGCATGC	ACACTGTTCT	TGCTACATTA	ATTTCTCACA	ATATAAAAA
	AGAAAAGCAT	CTGAAAAAAG	CTGCCACCC	CTGTGTCTCC	TAATATCAAA	ALIMONIODI.	ATATOROACA	CCLY YCCGG YC
	AGGGATGATG	GGCCATGCCT	CTAACCTCAT	CATGIGICIC	CTCCTCCCCC	TCAGACCCCA*	CCACACOACA MANAGAMANA	A A CTTCTCTTTT
70	TGAGGGATAC	ATTTCCACAG	TEGALATAAT	CAGACTTAAA	TAAATATAT	ATACACACCOM	CAACTOTTT	TATOTOTALL
, J								
		TTTCACAGTA GCTATCTCGG						
	CTGGGACAAC	AGGTGTGTGC	CATTACACCT	COCTAATTO	TOURITURA	GIGALICICC	COTTTO CO	TOTTOGGGAG
	CIGGGACAAC	A A CTCCTC LC	CTCACCTCTT	CTCCCCCCCC	OTGCCTCCC	ATOTOTOTO	GGTTTCACCA	TOLOGGECAG
75	OCTOMICIOS	AACTCCTGAC GCACTTCTAC	TCATACOATT	TAGAAAGGGT	TOTTAGAATA	AIGIGCIGGG	ATTACAGGCA	A CTALL ATTO
,,,	CACICACCAA	GCACITCIAC	IGAIAGCAII	IACAAACCCI	ICIIAGAAIA	LIAAAAAII	CIAAGAGAAG	VOITAVATION

	GCCTTCCCAA	CTAATACTAG	GAGGTTATAA	CCTTCATACC	AAAACTGGAC	AATGCTTGCA	CAAAAGAAGG	AAGCCAATGA
							CAGCCACCCC	
	GTATGAGTGG	ATGAGGGTGA	CTTGTCCACA	GACAATAGCC	ATCTAGCTGT	GATAAAGGAG	TCAAGGTAGT	CAGCTGCATC
							ATCAAAGATG	
5	CAACCTGACA	ATGAGTACTA	TGCTGCATTG	TCCAGAAAGG	AACTGTGGAA	GATTTTGGGC	TGAATTTCAA	AACAGAATTT
	CCTCACTCTC	TGGATGTTGG	CTTACTTGGC	CTTTGATGTT	CAGAGGTGGT	GCCTTTGTGT	TGTTGAACAA	TGTTGATTTT
	GGAGAGAAAA	CAGAGTTGAA	. AAACCCACAA	GTCATTCCCT	GGGGAGTATT	ACCGGAATAC	AGAGGATAAT	TTCAGCAAGC
							TTTTAAGAAG	
	TCGCCTTATC	TCATAGAAAG	ATGCCTCCAG	TCTGTCTGGC	TAAAGGTAAT	TGGCATGGGA	AAGTCTTTAT	CTGTGATTCT
10							TTTCTCCGAT	
							AGTCACTTGC	
							GGTCTCTACT	
							AACAAACAAA	
1.5							TTCTTCATCT	
15	ATAICIGIAA	AATGGGAATT	ATTTCATAT	CATAATGCTG	TAGCITTAAA	AAATAAAATA	AAATGGATGA	GATAATCAGA
•	ATTACAGAGC	ATOCCCCAAA	COMPONE	ATAGCAGCAT	GIAAAGATCC	TGTTAGAAAT	GCTAATTTTA	CAGITAACCA
							AGAATATGAA	
							TAGTATTGAG AGCAAGGCTC	
20	CTGGAGAGGA	TGAATTGAAT	TCTAGAAGAT	CAACTACCCA	AGIAAAACCC	CCTTCTTCTC	AAATGGATTC	1 CIAGAGGCI
20							TACTTCCCAG	
							TGAAGACTCT	
	AGCATGTTAA	ACAGTCTTGA	GAAGTCCTGC	AGAGCAGAAA	TTGCTTCACA	TCTGCTAAGC	CGGCAGTTTC	CCAATATACT
	TGATTATGGA	TAGTTTTTTC	CTTACAACAC	CATTCTCTGA	TATGCTTCCA	ATGACATGAA	ATAAATATAT	ATGCATGAGG
25	TTCTTCATTA	GGGCATACTT	TTTAATAGAA	AATATTGAGA	ATAATCTAAA	TATAAATGCA	CAGCATITAC	CTTTTCTGCA
							AACCACATTC	
							TTTTTACTAT	
							GGCTGGTTTG	
	CAGACCACTA	AAACTTTCTT	CATATCAGCA	ATAAGGCTGT	TTCACTTTCT	TACTATTTT	TGTGATAGCA	CTTTTCCTTT
30	CCTTCAAGAA	TTTTTCCTTT	CTATTCACAA	TTTGTTTGAT	ACAAGAGGAC	TAGATTTTAG	CTTATCTCAG	TTTAAGGTGT
	TTACATTGTT	AGCTAAAAAT	GCTAATGATC	ATCTGAGACT	TCAGCAAGTC	ATAATCTTTT	GCTGGTGGAA	GGTCTTGCCT
	CAGTGTTGAT	GTCTGCTGAC	TGGGTGGCTT	TGGCAATTTC	TTAAAGTAAG	ACAACAATCA	AGTTTGACAT	ATCAATTGAC
	CCTTCCTGTC	ATAAATGATT	TTTTTTTCT	CTGTAGCCTG	CAATGCTCTT	TGATAGCATT	TTACCCACAG	TAGAATTTTC
2.5							TTAGAAATCC	
35	TITCAACAAT	GTTCACACCA	TCTTCCCCAG	GAGTATATTC	TACCTCAAGA	AACCACTTTC	TTTGCTCATC	TATAAGAAGC
							TCTACTTCTA	
							GTCACTCATG	
	ATCCTCAACC	TTTTCACAAC	CTTTTCACTT	ATATTTIGAC	CIGCICCCAT	GATTCATGGG	TATTCTTAAT TATCTATGGA	GGCATCTAGA
40							AATGCAGTGG	
70							ACTGGATTAC	
							CTTGATCCAT	
							GCTCCTGGGT	
	ATTGTCAAAT	GAGCAGTAGT	ATCTTGAAAG	AAATTTTTTT	TCTGAGCAGT	AGATCTCCAC	AGTGGACTTA	AAATAGTCAG
45							AAAGCAGAGT	
							TITITITIT	
							GCTCTGCCTC	
	ACCATTCTCC	TGCCTCTGCC	TCCTGAGTAG	CTGGGACTAC	AGGCACCCGC	CACCATGCCC	GGCTAATTIT	TTGTATTTTA
	GTACAGACGG	GGTTTCGCCA	TGTTAGCCAG	GATGGTCTCG	ATCTCCTGAC	CTCGTGATCC	ACCCGCCTCG	GCCTCCCAAA
50	GTGCTGGGAT	TACAGGCGTG	AGCCACAGCG	CCCAGCCTGT	CTTCAACTTA	AAGTCGCCAG	CTGTGTTAGC	CTCTAATAAG
	AGAGTCTGCC	TGTCCTTTCA	AGCTTTGAAG	CCAGGCATCA	TTCTCTTCTC	TAGCTATGAA	AATCTTAGAT	AGCATCTTCT
	CCCAATAGGA	AGCCATTTTT	TATGCCCTAA	AAATCTGTCG	TTTGGTGTAG	CCACCTTCAT	CATTGATCTT	ACCTAGATCC
							TATGGGGATG	
<i></i>	TCTAACCTCA	TAAACTAACC	TCCACTAGCC	TCACATTCTT	CTTTTACAGC	TTCCTCGCCT	CTCTCAGAGT	TCACAGAATT
55							TTCTATCCAG	
	TECCTTCAL	ATCAGCAATA	AGACIGITIC	ACTITICITAC	TATITITGT	GATAGCACTT	TTCCTTTCCT	TCAAGAATTT
	ACTALOGETC	ATCATTALC	GACCGIIIGA	TATGAGAGGC	CTAGATTTTA	GCCAATCTCA	GTTTACACCA	TGCCTTTTTC
	COTCCCOTTCA	AICATTTIAG	CHITIAITI	AAAGTAAGAT	GIGIGACCCT	TCCTTTCATT	TGAACACTTA	CATGATGATG
60	TOOTONATTE	CCCATTACAA	CCCATTCTAC	ACTOTOTAL	TAGGGGCTAA	CACAGCIGGC	GACTTTTAAG	TIGAAGCCAA
00	AGGCCTGAGT	ACACCCACCC	ACATGGGGAA	ACACCCACTC	111GCC1AA1	IIIAAIAIIA	TGGTGTCTCA (CTTTATOAGG
	TTGAGGGCAC	ACCTCATCAT	ACTTCAAAAC	ATTACAATA	ATAAAATAAA	A A TO A TO A	TCGCAGATCA	CCATALCACE
	TATAATGATA	ATGAAAAATT	TGAAGTATTG	TGAGAATTAC	CAAAACGTGA	CACACAGACA	CAAAGTGAGC	A CATGTC ATT
	GGAAAAGTGG	TGCTGATAGA	CTTACTTCAT	GCAGGGTTGC	CACAAATACT	CACACAGACA	AAAATTCAAT	TATOTACATA
65	GTACCATAAA	AACAAGGTAT	ACCTGTTTAT	ATAATCAAGA	CCAACAGAAC	CCTAGAGAAA	ATAGCTCACT	CCCTACCTIC
	GAGACATTCT	AACCAACATA	CACTTACCTT	TCTTTTTGCT	GTGTACAGAA	TTCAAATCCC	TGTCTCAGCA	AAATTGCAAA
	GTATCAAATG	TCATGTCCAT	CTAATACTCA	AAACTGCAAA	TGTTAAGTCT	TGTAAGCCCA	GAGACCACTG	TATATACAAG
	TGTTGCTATA	AGCATTAGTT (CTTCTCCAAA (AAAATAGTC C	ACTTGGTAG A	AACAAACAA A	AAGAAAAAA A	AAGAAAGAA
	AAAACATTTT	TTACAAGAAG	ATTCAGTCTC	TTACCTACAT	AAGCAAAAAT	ATGAGATGTT	CTCTTATCAT	TITTCCATCT
70	ATCTTATAAT	CTITGGTGCT	GACTTAGACA	CTCATTTTCC	TITTTGTACG 7	GACCATGTA	AAAGTTCAAG '	TCAAGAAAAA
	CTTGTTTTGA	CATTTGTTTT (GCTGAGTGAT	GGGTCCCTAA	AAGAAATTTG	GCTTTGCTTT	TGAAAAGTTC	AGCATGATAT
	TGTGTGAATT	TTTCATGGCT	AATGATTTT .	AGAACAGTTG	TGATGTGTTT .	AGGTGTTTTA	AGAATATGAA	GCATTCAGTG
	GTTTAAGTTG	GTTGTTATAA A	AATGAAAGAA	TATGAAGGAA	AGCCTTCTTG	TCTTAGAACA	CACTGATTCA (CAAATAAGCA
~~	GCTTCTCTCA .	AAATGTTGTA .	ATTACAAAAA	TTCCAAGGCA	AATATAATAA	ACTCCTTGTC	GGTGCTATGT	CTAGAAACTT
75	AACAGCCCCA	AAGAAAGTCC	TGACAAGGCA	AAAAATATAT	ATATATATAC .	AAATTGTGGA .	AGCAGGGTGT 1	rgaaagaaga
				• •	••			

	ATAAAGACTA TATAAGGACA AACTGTTTAA AAGGGAGGGT ATCCTTGAAA GCTTGACACT TGACTCTTTT GACGAGGCTG
	AGGGAAAACA CTCAGTTTCA TAGATTGCTG GTACGGATGT AAAATAGTGA CATCCCTATA GAGAGGAATT TGGCAATATC
	TAGCAAAAGT GCTTATGCAT TTATTCTTTG ACCTAGTAAT CCCGCTTCTA GGATTAGTGG TGAAGATACA CCTCAACAAT
	AAAAATATAT ATACATTAGG TTATTAGTTA TGGTTTAATT TTTAATAGCA AAATATTTAA AACAACCTAC ATGAACAAAT
5	AGGAGACITA CTGAATAAAC TATGGTATAT CTGTACAATA AAGTGCAATT CACTTATGTT GTTAATTTGT TCCAAAAAATC
	CAGAGCCAAA GAGTATITGT TATGCTCTCT TTAGTATAAG AAAGGGGAAA TAAGATATGT GTGCATCTGT TTATTTTTGT
	GAAAATAAGT ACAGAAAGGA TAAGTAAGAA ACTAGTAAAA CTAGTTATCT CCTAGTGTTA GTAGAAATAG AATGAAAGTG
	AATTAGGCTT CTTTGAGTAT ATGTTTATAT ATAGTTTTGA CTTTTGAATT ATGTTTATGT TTACATAGTC AAAAATATAA
	ATTAATCAAC AGAAATAACA AAAAAAGAAG AAATCACAAG CTTTAAAATT TAATACAAAC AGAAATAATT GAATCTAACA
10	GTATATCAAA GTGATAACGT AAACTCAGAA GAAAAAAACA TAATCCAACA TACCAGTGGA ACACAATATT CTAACTGTAT
	ACATTCAGTG GTTATAGTCT AAGGACAAGA AAAATTGCAA AAATATCTTG AACTTTAGCT TGTAGGATTT TTATTGGTAG
	CAATACTAAT GTACTAATTC TGAAATTAAT GTTCGTGTAT TATAGAATTG AGTAAATGAA TAAATATGTT GATGTTATTG
	GGAACTAAAA TTATCATTCT GGGAGTAGAG AAATATAAAT ATGGACTTGG CAAATGAAAC AAAGACCTGC AGAGAGATAA
	CCATATAAAC TCATTATTTT AAAAATTATA AGTGTCCTAG CTCTGTTACT GAAAAGGCCT AGATTCAATC TTATCTTGAT
15	AGACAGGAGG GCACCCCTTT CTCAGAACAT GGTTTCCAAA TGCCATTCTC CATTAAAAGG AACAAGGTCT TCTTGGAGAA
	AAGACTGATT CTAGGTCTGG ATTAGGTAAA GTACAACGTT AGTCTGGAAT TTCTTGCTGA ATCAGAAGTA AGAAAGTGCT
	CAAAAACATG GGAACATGTC ACAAACACAC GTGAGGCAAC TTGAATCCTC ACTGGCCATA TTTAGGACAA TCGAGCATCA
	AAAAAAAAA AAATGTTGAG AATAATGGAT TCTAACACTT AAAACAAAAA ATAATCCATA GCCCACAGAA GGGGAAGAGA
	GGGGGAGCTC TTATTTACAG ATGAATATCA AATAGCAAAG ACAGAAGAAA TGACAGAATT AGAGAAACAT CATTTTGCAA
20	AACACCACTG TAATAATCAA TTCAGGCAAG TATTATTAAT GGATGTATTA CTATTGCGTA AAACCAGTTG GGGAACAGGA
	TATTCATACA GTCTGAAGGT GTCACCCTAA ACATAACTTA TTACAAGTGG AAAATGGTGC CTTTACAATG AAGAAATCTA
	GCAGAAACCA TCTTAATCTA GTGATCAAAC TTAGTATCAC CAATAATGGA TCATACTGAG TCATGTGTCT CCTAATATGA
	TGCACCAGGA AGGATGCAAC GTCATGAACG TTGTATTCTT TTGTATTCAA CAGACCACCC AGGGTAAAGG CAGCTTTCTC
	ACTTACTAAT CAGAATTGTT GGTTTTAATT CATTTTGGAT TTTAAGATTT CTTACTTTCT TGTCAGCTCA GAAATTTATT
25	TAAGATGATT TITATCTTTT ATTCAATACT TTAGCTIGGA GAACCATTCA GAGTTTCTAA CTCATTGTAT TGCCAAAAAT
	AGAAAACAGC ATGGTTTCTT TTGAAAATGT CTAACTTTAA AGTTACTTGT GTGTGTCACT CAGATTCACA TAGCTTTTTT
	GCCTAGTAAT GTAGTATCAT GTGGCAAGGC TATAAAAATG TTTACAATCT TTTATTTAAT ATGACTCTTG AGAGTTTATT
	CTAAGGAAAT AATTGAATAG TAACAAAACA CTATTAACAC AAAGCATAGC AATTTGATTT GGGCAACCAA ACACTGGAAA
	CAACCTAAAT GTCCATTACA GGAATCATIT ATGAAGCAAA CACTAAAATA TTTATTGTGA AGATTATGAG AACATAGAAG
30	ACAGTTATGA GAGTAAATTT GAAAACCTGA ACACAAAACT TACATATACT CCAATTGTAA CTTATAAAAA ATACGTGCAT
	ATAAGGATAA AACAGTACAA ACAAAAAAAT AGTTGCGTTA GATTGGTAGA ATTATGGCTC CTTTTGCTGT CTTAATTTTT
	TCCTTTTACA TTTTGATACA TTATTTTAAT TTTAATTTTA AAATTCAAAA GAATTTGCCA CTCATCTTTG CCACTTCAAG
	GAAAAAAGAA ATGTGTTCGA TTATTCTGTT CTTAGTATAG TTTTGGCAAT TTCCTCACGT GTAAAAAGAG AATACTATTA
2.5	ATAATTICAG TATCTATAAG ACAATATAAA ATTAAAGAAT CTAGCCCAGT AACTGGTACA TGGAACGTAA TTAATAAATC
35	ATTATGGACT TITTITCTCA CACCCAAGTA GGGAGGAATC AGTGGTCCCC TAGAGGCCCA GTGTAGAGGT GGCAGCACCA
	ATCCCTAGGG GAGAAGATCT TGGTGATGAT AATTCCTGAG CAGACAGTTA GCTGAGAATT CAAGAGCAGA AAAGTAAGAA
	AGAAACAACT TCTTGCTAAC ACCTTTCCAC CCACGTTTCC CTGTTCTGTT
	CAGAGGAAAG AGAACCAAGT TIGCTCTTAG TCATTCACTA TGTTGTTTAA TCTGCCTTCC ATCTTTCTTA TCAGTTCAAA
40	TTAGAATGTA GACCTGAATT TAAATCCCCG TTCTGTCAGT TATAATGTGA CCCTAGACAA AACACATCT CTGAACCTCA
40	GAGAACATTC TTCATTTGTA GAATGGGAAG ATTAATCTAT ATTCCACTTG GATGGCAAGT CTTTTATAAAC CTTTATAACC
	TAAACATGTG TGAGTTGCTA GTATCATTAT GTTGGTAAAG TTATTCTGAG ATATGATAAC AGAACTGTTT TGTCTAACTC
	CACTAGCATG GITCAGGTTT AGAGAGTGTG GAATTAAAAG GCTTTATCCT CAAATATGAC TTAAAATCCGA TTTTTCTCAT
	CCACTTTCCT CCACAAACAA ATCCTCAGGA AATGACAAAC TTTACATGGT TAAACATCAG TTTTGTTTAG TCTTTGACAT CCACATGGTT AAATCATACA TTTGAAAACT GCTTATATTT GTGTTGTCTA TGTCTAAATT GAAAAGACTT ATTGAGGAAT
45	AGAAGACTAC ACATTITICA GCAAACACTG CACGTTTTGC AGAATTTCCC CAGGCACCAG TCTCCAGGAA TTTATTGGCT
43	ACTAACAATA CTAAGATATG GATGAATGAG GAAATCAAAA TGGAGATCTT GCAAGTTTTG TGAGAATGGG TGAATGTCC
	AAATGAAGAG ATAAGTTGTG AAATATTAGT ACAAGTAAAA ATTATTTACA ATGAAAGACA TTTTGTCAAT AGCTATGAGA
	ATTITIACCAT TGACCCAGAA ATTICCATTIC TITCTICAGA AATACCCACG TAGGTATACA TATAAAAAAGT TATTCATTAC
	AGTATCGTTT TTCATAGGAA AAAGTTTTAA AAATCAGAAG CTATCTAAAC TATGGTATAT CTAGGTCATA GAAATCAAAT
50	GACTAAAAAT GTTAATATAA GCATATGTTT TTAAATTAAC TTGGCTTGGG TCTTCAGCAA AATTGGCTTC TTAACATTGC
50	ACTCCAGAGT TAGACTTACC CACTCAGTCA CTTATCATGC AGGAGCAGAC TCCTAATACC ACATATCATA GAGCAGAGTA
	GGACACAGGT TCTCTGCAGG CAGGCAAATC CCAAAGAGAA GGGAGGAAAG GGCTGAGACA CTGCATGGTC AATTTCTTCT
	GAACTCTGCA ATGTACGGAG GTGGACAGTG TCCACAAAGA TTGCTCCCCT GGACCCACCA TCATAATAAC ACAACGGCTT
	TGTTTTGTTT TTGTTTTTGT TTTTTGACAC GGAGTTTTGC TCTTGTTGTC CAGGCTGGAG TGCAATGGTG TGATCTCGAC
55	TCACCACAAC CTCCACTTCC TGGGTTCAAG TGATTCTCCT GCCTCAGCCT CCTGAGTGGA TGGGATTACA GGCATGCACC
	ACCATGCCCA GCTAATTTTG TATTTTTAGT AGAGACGAGG TTTCTCCACG TTGGCCAGGC TGGTCTCAAA CTCTTAACCT
	CAGGTGATCC ACCCGTCTTG GCCTCCCAAA GTGCTGCGAT TACAGGTGTG AGCCACCGCG CCCAGCCCAC AATGGCCTTT
	TGTTTACATC TCTAGTGCAG CACTCATTTC ATGTTCTTTC AAGAAGAATA CATATTTCAT CTTTTTATTT TATACAGCAA
	TTAGCACAGT GCCTGGCATA AGGAAAATGA TCATTAAAAG CTGGGTGAAA AACCTAATAA AGCTACTGAG GATAGGAACT
60	GCAGACCAGC ATGGAAAGAA AACTATGAGC CAGATATTGA CATCATCCTG AAAGGCAGAA GATTTAGTAT AGGCAAGAAG
	TATGCTTITG GAATATAGAA AATCTGGATT ATGATAAGAA AAGAATCATA TTTGTCTTAT CTTACCTACT CACTTCTCAG
	TICCACATGT TICTGAGGCT GITTGTCTTT ACTITCTTTT CTGTTTTATC CACTCTTCT GITCTTTAGA TIGGATCATT
	CCTATTGAGC TGACATCAAG TTAACTGACC TTTTATTTTG TCCAAACTGC TGTTAAATGC ATCCAGTGAA TTTTTAACTT
	TATATAGTAT ATCTTTTAGT CCTAGAATTT CCACATGAGT TTTTTAAGTT TCCATTTCT TGCTGAGATC TCCTATTTGT
65	TCATTCATTA TGACCATATT TTTCTCTACA TTATTGAGCA TAATTATAAC AGCTCTTCTA AAATTCTTGT CTGCACATTC
	TAACACCIGA ATTATICTGG GGTCAGTCTC TGTTACATTG CCTTATTACA AAAACAGTAT AAGTCACATT GCCTTGTTTC
	TTAATATGCA AAATGATTTT TGATTGCAGA CTAGACATTT TGAATTAAAC ATTATAGAGA TTCTGGATTC TCGAGAGAGAGT
	ATTGACTTGT TTTTTCCATC AGGCAGGTAA CTTGACTGGA CTCAAACTCC AAACTCTAGG TCCTCTGTAA TGGGCAACTG
	CAGTAATCTT TGTTTAGTTC TTTAAGACTT ATTGGCCAGG CACGGGGGCT CATGCCTGCA ATCCCAGCAC TGTGGGAGGC
70	CAAGGTGGGA GGATCACCTG AGGTCAGGAG TTCGAGACCA GCCTGGCCCA CATGGTGAAA CCCTGCCTCT ACTAAAAATA
	CAAAAATTAG CCGGGTGTGG TGGTGGGCGC CTGTAGTCCC AGCTACTCAG AAGGCTAAGG CAGAAGAATC ACTTGAACCT
	GGAAGGCAGA GOTTGCAGTG AGCCGAGATT GTGCCACTAT ACTCCAGCCT GGGTGACAAA AGCGAGACTC CCTCTCAAAA
	AAAAATTTAT TGGCACTGCT TGGCATCTGC TATGAATACA TGAAGTTCAT GGGTCAGCTA TAGATCTGGG CACGTTATAC
	ACAGAATTIG GGTCTCCCTT TCTCTGGATT TCTCCTTTTC TGGATTTCTT TTCTCATTIT CCAGCAGCTG TGGTTGCCCT
75	AAACTCGGTC CTCTGTTTCT TTACGGCAGT AAGATTTGGG AACTTTTAGG TTTTACCTGC CTCTCAGACA AAATAAAAAA

	TAATTTTCAT	CTTGATGCTA	CTCCTTTCTT	CCAGATGTAG	ACACCTCTCT	AATTTCCAGT	TGCTTTTTAT	TGCTCTCCAG
			TTTCTGTGGG					
			AGTAGTATTC					
	TTTTTCTCAT	CCGTAATCTT	TTTATTTTCA	TACTTCCTAA	GTCAGACAAT	TTTCCTACTT	GAAGATTCAG	TGACTGCTAT
5	CAAATGACCC	CCATATTACT	AAATACAATA	TCCCCAACTG	CATTTATAAA	AAGAAAATTT	ACTGTTTATT	AGTAAACAAT
	GTTGTAGAAT	AGTAAAATAT	TGCTGGGCTT	TGGAGCCAGA	TAATCAAGGT	TAGAATCCCA	GATTCTAACT	TACTAGCTGG
			CTGCTAATAA					
	AATTGACTCA	CAGTTCAGCA	TGGCTGGGGA	GGCCTTAGGA	AACTTACAGT	CATGGTGGCA	GCAAGGAGAA	GTTCCAAGCA
			* AAAACCATCT					
10	CCCTCACGTT	TAATTACCTT	CCACCAGTTC	CCCCCCATGA	CACATGGGGA	TTATGAAAGC	TATAATTÇAA	GATGAGATTT
	GGGTGGAGAA	ATAGCCAAAC	CATATAATTO	CACCCCTGGC	CCCTCTCAAA	TCTCATGTCC	TCACATTTCA	AAACTCAATC
	ATGCCCTCCC	AACTGTCCCC	CAAGGTCTTA	ACTCATTCCA	GCATTAAGTC	AAAAATCCAA	GTTCAAAGTC	TCATCTGAGA
	CAAGGCAAGT	CCCTTCTGCC	TATGAGCCTA	TAAAATCAAA	AGCATGTTAG	TTACTTCCTA	GATACAGTGG	GGGTACAGGC
			CCAAATGGGA					
15	ATAGGGCAGT	CATTAACATT	AAAGTTCCAA	AATGATCTCC	TTTGACTTCA	TGTCTCACAT	CCAGGTCACA	CTGATGCAAG
			TGGGCAGCTC					
	AGGCTGACAT	TGAGTGTCTG	TGGCTTTTCC	ATGAGTATGG	TGCAAGCTGT	TGGTGGATTT	ACCATTCTGG	GGTCTGGGCC
	AGGTGCAGTG	GCTCATGCCT	GTAATCCCAG	CACTTTGGGA	GGCTGAGGTG	GGGGATCACA	AGGTCAGGAG	ATCGAGACCA
	TCCTGGCTAA	CACGGTAAAA	CCCAGTCTCT	GCTTAAAAAA	TACAAAAAAT	TAGCCAGGCG	TGGTGGTGGG	TGCCTGTAGT
20	CCCAGATACT	TGGGAGGCTG	AGGCAGGAGA	ATGGCGTGAA	CCCAGGAGGT	GGAGCTTGCA	GCGAGCTGAG	ATTGTGCCAC
	TGCACTCCAG	CCTGGGCGAC	AGAGCAAGAC	TCCATCAAAA	AAAAAAACAA	AAAAACCATT	CTGGGGTCTG	GAGAATGGTA
	GCCCTTACAG	CACCACCAGG	CAGTGCCCCA	GTGGGGACTC	TGTGTGGGGG	CTCTGACCCC	ACATTTCCCT	TCTGCACGGC
	CCTAGTAGAG	GTTCTCCATG	AGGGTTCTAC	CCCTGCAGCA	AACTTCTGCC	TGGACATCCA	GGCATTTCCA	TACATCCTCG
	GAAATCTAAG	CCGCGGAGGT	TCCCAAACTT	CAATTCTTGA	CTCCTGTGCA	CCCACAGGCT	CAATACCACA	TGTAAGCCAC
25	CAATGCTTGG	TCAGGGCTTG	AACCCTCTGA	AGCAATGGCC	TGAGCTGTAC	GTTGACACCT	TTTAGCCTAG	ACATCTAGGA
			AGCTTCATAA					
	CTCCAGGCCT	GTGATGGGAA	GGGCAGCCAT	GAAGGTGCCT	GACATGCCCT	GGAGACGTTT	TCCCCATTGT	CTTGGTAACT
			GCACCAACTT					
			ATCATGCTGC					
30	GAAATTTCTT	CCCCCAGATA	CCCAAAATTA	TCTCTCTCAA	GTTCAAAGTT	CCACAGATAT	CTAGGGGACA	AAATGTTGCC
	AGTCTCTTTG	CATAGCAAGA	GTGACCTTTA	CTCCAGTTCC	CAACAAGTTT	CTCATCTCCA	TATGAGACCA	TCTCAGCTTG
	GACTTAGTTG	TCCATGTTAC	TATCAACATT	TTGGTCAAAG	CCATTCAACA	AGTCTCTATG	AAGTTTCAAA	CTTCCCCATG
	TTTTCCTGTC	TTCTAATAGC	CCTCCAAATT	TTTCCAACCT	CTGTCTGTTA	CCCAGTTCTA	AAGTCACTTC	TACATTTTTG
			ACTCCCCATG					
35	TCGAGACTGG	GTAATTTATA	AAGAACAGAG	GTTCAACTGG	CTCACAGTTC	AGCATGGCTG	GGAGGCCTCA	GGAAACTTAC
	AAACATGGTG	GCAGCAAAGA	GAAGTTCCAA	. GCAAAGAGGG	AAAAGCCCCT	' TATAAAACCA	TCAGATCTTG	TGAGAATTCA
	CTATCATGAA	AATAGCATGA	GGGTAACTGC	CCCCATGATT	AATTTACCTC	CCACAGGGTC	CCTCCCATGA	CAGGTGGGGA
	TTATGGGAAC	TACAATTCAA	GATGAGATTT	GGGTGGGGAC	ACAGCCATAC	CATGCCAGCT	AGAGAGCCTT	AAGAAAGTCA
40	CCTAATCTCC	ACAAATAAAA	GGTTTCCTAT	TTGTTCAACA	AAAATAATGA	CACCCCTTTT	ATGGGATTTC	TGTGAGGACA
40			TGCATAGTGT					
			TTTTATGTAC					
	CCCCCAAGCA	CAGATAGCCT	CCCCCAGTAT	CAGCATCCCG	CACCAGAGTG	GTACATTTAT	TATAACTGAT	GAATCTATAT
	IGACGIGICA	TTTTCATCCA	AAATCCATAG	TITATATTAG	GGATGCCTCT	TGGTGTTGTA	CCTTCTATGG	GTTTTGACAA
15	ATGTATAATG	ACATGIATIC	ACCATTACAG	TATCATAAAG	AATAGTTTCA	CTGTCCTAAA	AATCTTTGAT	CTTCTTCCTA
45	TTCATCACTC	CCTCCCCATT	AATCCCTGAC	AACTACTGCT	AATTTTCCTG	TCTCCATTGT	TTTGTCTTTT	CCTGAATGTC
	ATATAGITTA	AATATACAGT	ATGTAGGATT	TTCAAACTGG	TITATTTCAC	TTAGTAATAT	GCATTIGATG	TTCTTCCATA
	ICTITICAAA	GCITCATAGI	TCAATATTTA	TAGAATTGAA	TAATATICCA	TTGTCTGGAT	GTACTACAGT	TTATGTATTC
	ATTCACCTAT	CAAAGAACAC	CTTGGTTGCT	TCCAAGTITC	AACAATCATG	AGTAAAGCTG	CTATAAACAT	CTATGTACAT
50	TOTTE ACTOT	TOTALCALAC	TTTTCAGCTT	TITIAGCICC	ATTCCTAGGA	GIGCAATIGC	TGGATTGTAT	GATAAGGGTA
50	CTCTTCCTCC	AGATAGTOAG	TGCCACGCTC	TICCIAACIG	GAIGIACIGI	TITGCATTCT	CACCAGCAAT	GAAAGAGTTC
	CIGITOCICC	ACATACICAC	CAGCATTTGG	IGICGICAAT	GITTGAGCA	ATAGCATTT	GATCIAACIT	TICCTAGGIA
	ATTELLITION	CCACTCTCTC	ATGACAGATA	ATAGAGAAAG	GATATACGAG	GACAGIICIG	ICCITIATIT	ATAGICCATC
			CACACTTGGT GTTGTGTATC					
55	TTTTTTCAG	ACCCACACATO	GCTCTGTCGC	COACCCTCCA	CTCCLCTCCC	GAAGCAIGG	CTOLOTOGLA	COTTOCOCCTO
55	CCGCGTTCAC	GCCATTCTCC	TGCCTCAGCC	TCCCCACTAC	CTCCCACTAG	ACCOCCCC	CICACIGCAA	GCTCCGCCTC
	TEGENTETT	AGTAGAGGCG	GGGTTTCACT	CTCTTACCCA	CCATCCTCC	AGGCGCCCGC	CACCACGCCI	CCCCCCCCCCCC
	TOCOTOCCAA	ACTOCTOCA	TTACAGGCGT	GIGLINGCCA	GCCCCCCCC	UAICICCIGA	CCITGIGAIC	TTTCACATCO
	AGTOTGTCAC	TCTGTCACCC	AGGCTGGTGC	AGTGATGCAA	TCTTCCCTCA	CTACAACCTC	CATCTTTCAC	CTTCAACATGG
60	TTCTGCCACC	TCAGCCTCCC	AAGTACCTGG	CATTACACCT	GCCCCCCACC	ACACCCACCIC	CAICITICAG	ATTENTACTA
00	GAGACGTAGT	TTCACCATGT	TGGCCAGGCT	COTOTOATTO	OTCA COTTCA	CTCATCCACC	TCCCTTCCCC	TOOGLALOTO
	CTGGGATTAC	AGGCATGGGT	CATCACATGT	GCCCCATIC	ATGACTITIA	CTTTAATCAT	ATCAAATACT	CCTCTCTATT
	GTTATCTATT	TGALATGCCA	CACCTCCTGA	CCTA A ATTCC	AACCTTTTAT	CCACCACAA	CCATATTTAT	ATATATTACO
	ATGATACCAT	GACACATATC	AAAAGCTGTT	ATATATICT	ACCTCAATTC	ATTOTTTOTO	ACTTAACACC	ATATATTAGC
65	TAGCACTTTC	ATACCGTTAA	TTTTTCATTT	TGTGCCCAGC	CCCTACTCTC	TGAAAAATGA	AGTIAAGAGG	CTTATCATTT
-	CCCTCCCAGG	CCTTTTCTCC	TTGTGGACAA	TCTCTCCCTC	AAGACAAAAT	TCACTCACTA	AATOAATCCI	CTCCACAAAC
	TCTTTATCAC	CTCTCACTGT	TCTCAAGTGA	CATAGAACAG	AACATCCATC	CAGTGTCTTA	CALATTOTOT	COTATATACT
	AGGCACTCAA	TAAATGTTTT	TTGAATAAAT	GCATACATCA	ATCCTATTCC	TATATATACT	ATCCTACACA	GATCATTCAT
	ACCCAAAGAT	GCCCVVALCE	TGATCCCCAG	AACTTCTCAA	TATCTTACAT	TTCATCTCAA	AAGGGACTTT	COTA ATOTOA
70	TTAAGGATTC	AGACCCTTCC	ATTGTAAGAT	TATCCCCCAT	TAJATIAJA	CAATCTAATC	ACATCACACO	ADIDIAMIOD
			GTTAGAGAGA					
	CCCACTGTTG	CTGGCTTTGA	AGATAGAGGA	ACTAGGCCAC	A A A C A A C C A	GTATGAGTCC	CCTTYYGYYY .	TARRANALLIA
	CCCTCATCTC	ACAGCCITOR A	AGAAAGCAGT	CCTCTGACCA	CAAGAAATTC	GINIONGIUG	CCITAAGAAA	TGAGCAACGA
	AATGGATTCT	CCCCTAGAAC	CTCCAGAAAG	GAACACAGCT	CTGTAATCCC	TTGATTTAG	CCACCTCAAA	CALCALLACON
75	ACTITICACC	TATGGAAATA	TAAGATAATA	AAGTTTTATT	GTATGCTCCT	AAATTTCCCC	TACTTTATTA	CTGAAGCAAT
		II GOYMMIIA					WINITIM	O. OMNOCHM1

GGAAAGCCAA TACAGACAGA ATATACAGAG AGAAAGAGAA TGAGTTCTTT CCTGATAATT TGTAAATATT TGGGTCTTCA CTGGACAAGC TTCACAGAGG ATTCACTGGT TCCCTAGCAA ACCAGCATGT CCAGTCCTGC AGCCTCCCTT TCTTAGGCCC AGCATATGTC AGCTGTGTGC ATAGAAAAAAT CAAAGCAGGA CCCTGAGTAG TTGGAAAGAA AAGATGGTTG GAAATGGGTT GCACTTCAAG TGAGGAAACA AGAGGTAGGA GACCGGCATC TCTTTCTCAT ATGTCCCAGG CTGACTCTTG TGAGTTGTTT TCCCTTGGAG GCTATCGATG ACAGTCACAG TAACCTGATG GAACCTGGAT CATGATGAAA GAAGTAAGTG TCAATGGCTC
CGACTTCCAA GGACTCTGAT GTCCCACAGC ACTAGCTAAA CAAAGCCAGT TGGAAATGAG CTTAAATGGG GAATTTCCTG
AATATATCC CTATTGTTAG GAAGCCAGGT TGGCTTCCTT GCCTACAATT ATGCCAAGCA GTCACACTAT AGAGTCCCTA
GGGACATGAT ATTAAGTGAT TCCTTTAACA CAAACCACTT AATAATCATT TATACTAATA GCAAAACGGC CAACGGCTGA
TATTCCACTT CAATGTCAT TCCCTTATCAA TATTCCACTT GAAGTAGAAT TGGCTATCCA ACTGGAAGAG AAGACAGGAA GACGTGATCT CCAGGGAGCC ACTAAAAGGA
TTGGCACCTG CCTCTGGATT CCCCTTTTCC TTATATTACC TCTCAGCACT GGCAGGCCTT TATTTCAGGA TACAGTTTCA
CAAGTATTAT GTCACGTCTC TGAGAATTAT GTTGGTAGAT ATTTGCTCCT CTGGCCAGAA AGACCTAGTT TGGAGTCTGG
AGTCATGAAG GTGACATACA TGTAGCTAGT GACATAAGTG TAGCTAGTAA AAATAGTGAG TAATGGCCCT GAAATTCTAT TGAATGCCCA AAGTGCTGAC CAGGAACAAG CATGCTCTAG CTTATCTCAC AAGGAACTTG ACAATTTCT TCAAAAATCC TAGTAGCTAA GATTTCTTAG TAACAAAGCC ACTAAGGCAC AATTATGATT AACTTGACCC TTAGGTGACT TTTAAGGACT ATTCTATAAA ATATTACAAC TAATAGTGGA TCCAAGCCAG CACACTCTGC TATATAAGAT TAATTGACAG TGTCCACACT ATTICIATAAA ATATTACAAC TAATAGTIGGA TCCAAGCCAG CACACTCTGC TATATAAGAT TAATTGACAG TGTCCACACT
GGTAAAATAA GTTGTTTCAT AAATACATTA GAATTCATTT GCACTTTCTA CACAGCCCCA AGTCCAGAAC TTTCCCCAGA
ATAGGTCTAT GTTTTGCAAT CTGCTACTCC ATACAGAGAT TTGAGTTCAC TTGGCAATTT AGTGCTGCTT ATATGTGACCA
AGTTAGTCTG TTTTACTTAT CTATGCCTTA AACATTACTA TACTTACTAA CTCCAAGATG CCTGGTCTCA ACTTGACAAA
AATACCCCAA GTTGGGAAAT CCTTATGTGA ATATGTAGAT AGTCACAATT GCTGGTTGAT GATGATCTGT CTTTTCCTGT
ATTTGAGAAA ATGGAGATAA AATGGACCAA TCCAAATAAT GGATTAAACA TGGGAATAGG TGAGAGAGA AGAGGAATAC
ATGGTGGCTC TCAGTGTCTG GCTTAGGCCA TAAACACTTT CGTTAATAAAA GACGGAAAAT AAAAAAGGAA TAATTGGTGTT

TTAGGGGAAA ATAATAGGT CAACTTTTAA CACTTTTACTACT CACCACTTCA ACACTCTATA TACACACTTTA TACACACTCTA TACACACTTTA TACACACTCTA TACACACTTTA TACACACTCTA TACACACTTTA TACACACTCTA TACACCTACACTACACTACACTACACTACACTACACTACACTACACACTACACTACACACTACACTACACACTACACACTACACACTACACACTACACACTACACACTACACACTACACACTACACACTACACACACTACACACTACACACTACACACACTACACACAC CTAGGGGAAA ATAATGAGCT CAAGTTTTAA CACTCTGAGT TCCCGGATGT GAGACATCCA GGCGCATTTA TCCAAGAGGC AGTTGGAAGC AACGTTCCGG AGCTTAGGAG AGAGGCATGA CCAAAAGCTG GTGGGACTGT GAAAAGGTAT GGCCATTCTG GAAAACTGTT TGGCAGTTTC TTAGAAAATT AAACATGTAC TAACAACCCA GCAATTGTAC TCTTGAGCAT TTGTCCCAGA TAAATGAAAA AAAAAAAAAG CATTTTTTT ACACAAAAAC ATATACATGA AAGTTCATAG AAGTGTTATT CATAAAAAAC TGGAAAAAAC TGAGATGTCT TTATTGAGTG AATGCTTAGG CAAACGGTGG TCTATCCATA CAATGGAATT ATGCTTAGCA ATAAAGAGAA AAGAACTATT GATACATGCA ATAACACAGA TGAATCTCAA AGGAATTAAT GCTGAGTGGG AAAAAAAGCA CATCTCAAAA TGGTATATAC TGTACTATTT TATTTACTTA ACATTTTAAA AATAGCAAAA TCATAGAGAT GGAGAACAGA TTAATGGGTA CTGTGTTTTG GGATGGGGAG TGAGAAAAGG GTAAGGTGTA AATATAAAGG GGTAGCACAA AAGAGCCTTG TGGTTGAAGG ATTCTATGTC TTGGTTGTAG TCGTGATTGC AGGAATCTAC ATGTGATAAA ATTGTATGGG TCTACATACG CATACACACA AGAGCATATA AAACTGGTGA CATGTGAAGA AGCTCCGCAC ATTGTGCCAA CATCAGTATC CTAGTTTCAA TATCAGACTA CAGTTATACA AAACATTGTC ATTGAGGGAA ACTGCGTAAA GGGAACACAG GACATTTGGC ATATATTTTT
GCAATTTCCT GTGAATCCGT AATTATTTA AAATAACAGA TATACTACAT ATCAAAAATT TAATGTCATA AAGTTGATGA
GTTTACCTAG TGGATAGCTT TGTTAATATC TGCTATAAGA CTACTGAAAA TGACAGTTAT GCAAGTATAA GCTCAGAGAA CTITICCTCCC CCTTGGTAAA TGAAATGAGC AAAAGAAATG AAACAGGAAA GGCAAGCAGT ACTGAAAACA GGGAAGGGCT CTTCCCCATA TAACTATATC TGCGACTTCA ACAGCTATTC ATCCAGAAAC ACAGCCTCTT GCGCTAAGAG GAAACTTTCG ATAACAATAT GTTTTCACTC TCCAAGAGAG AAAATGGATA GATTAATTTT TAAGAAAAAA AAAAAAACCT CACCAATTTC ATCCTGTGGC TTGCACCTTT AATCCCAGCT ACCTACAAGG CTGAGGTGAG AGGCTTACTT GAGCCCAGGA GTTCAAGGCT ACCTACAAGG CTGAGGTGAG AGGCTTACTT GAGCCCAGGA GTTCAAGGCT GCAATGAGCT ATGATTGAT GTGCTATCGC ACTCCAACCT GGAGTACTAA GCTAAGAGCT AAGAACACAG CTGAGAGCGG
AGAAGAAACA AACAAATCTG ACCAATAACC CCCACTCCCC TCATTTTACT GGAGTGAGCT GAGACTGCTG GCAAACATGG CCTTTGACCT AGCCTGAACT GTAGCAAAAG TCATCAGATA TTTTTCCACC AATCAACAGA CAGAAGTGGG GAGAAAACAA TCGTAGTTCA TAACTACAAC AAGCAGATAA ACGAAGGCCA TGGTGAGGGA TGGAAGACAT TGTGATATAT CAAAGGCAGG CTCATTTAAA ACTCAACCCA AATTCCAAAC AAAATATATA ATTGAATATG TATTAATGCC AAAGGAGCTT GAGTGAGCTT TAGCACAAAC CCCGCCCTCC AGCCCCCACC CAAAAAAATC ACTCTGTTCT CTCCCCATTC TTTGATAGGC ATACTTGCTG TTTTCTCACA GCCAAGGTAC AGAGGGGACT TAGAGGAACT AGAACTCTAA TACACTGCTA GCAGGAATGT AAAATGAAGC ATCTACTTCA GAAAACCATT TTATCAGTTT CTAGAAAGTT AAACATAGAC CCACCATGCA GCCCAGCCAC TCTACTCCTA AGTATTTACA CAAGAGAAAT GAAAACGTGT CCCCACACAG TTGTATTTAA AGGTGATGGT TAGCCTTGTG TGTCAACTTG GCTAGGCTAT AATACCCAGT TACTGAATCA AATAGTAATC TAGGTGCATC TGTGAAGGTA TTTTGTAGAT GTGGTTAACA GCTACAATCT GTTGACTICA AGTAAAGGAG ATTGCTCTTG ATAGTATGGG TGGGCTTCAT CCAATCAATT GAAGGCCTTA AGAGCAAAAA GTAAGGTTTC CCGGAGAGAA AGAAATTCTG CCTCAAGACT GCAGCCTCAA CTCCTGCCTG AGTTTCCAGT CAGCCAGCCA GCCTAAAGAT TTGCTAGGCA TTATAATCAC ATCAGCTAAT TTCTTAAAAT AAACCTCTTT ATATATATTG ATACAATGAA TGGTTATAGC AGCCTTATTT GTAATAGCCA CAAACTGGAA ACAACCTAAA TGTCCTTCAA TAAGTGAATA CATAAACAAA TTGTGGTATA TCCACAATTT TTACGCAGCA GTAAAAAGGA ATAAATGGTT GAATAAGGAA TAAACACTA ACAAGGATGA ACCTTAAAAC CGTAAGGCTG AATGGAAAAA GTCAGACAAA ACTAATACAT ACTGAATAAT TCCATTTATA TIGAAGTICT AGAAAATGAG GACTAACCTA TAGTAACAAA AAGCAGAAAA ATTTTGCCCA CTGGTGATGG AGGGGGCGCA
GGTATTGTAG AGTATCTGAG AAAGGACAAC TGGATAAAAAG GGGGCACAAG AAAACTTTTG AGGGTGATTG ATATGTTCAT TATCTTGTGG CATGGTTTCA TAGGTGCATA CATATGTCAA AACATCAAGT TATACACTTT TAAAATGTTC AGTTTACTGT TATCTIGIGG CATGGTTCA TAGGIGCATA CATATGICAA AACATCAAGI TATACACITT TAAAATGITC AGITTACTGI ATATCTATIA TACITCAGTA GAGAGGAAGG AAGAAAGIGG GCAGGGIGGG GGAGAAGGAA GGAAACGAGG GAGGAAAGGC CCTAATAGGA AGGATTITGG AGITTAGATT TTAAAATGAT AAAGGATGIT TGACACTCTA GGCATATGAC GAATATAGGA TTATGAGTCC ACAAAAACCA CCAGGAAGTC ATGATGITT ATACTITTAA GTGAAGGATC AGTGGATTAT CAACTCCCTA ATGCTTIGCC TCTCTATGAC TGGCTGCTTC CCTTCTCATC CCAATACTCC TTCCAAAGCC CCTTGCTTAA ATGTAAGCCT TCTTCCTCC TTTCAACACAC TCCTGCATTC CGTGACAAAA TAAGTTTTCC TTAAACAGAA TGTACAGCAT ATTATTTGTA CAATTAAAAA TTTTTTGGCCA GGTGTGATGA CTCATGCCTG TAATCCCAGC AATTTTGGAG GCCGAGATGT GTGGATTACC TGAGGTCAGG AGTTCGAGAC CAGCCTGGC AACATGGTGA AACCCTGTCT CTACTAAAAAA TACAAAAAATT AGCTGGAGTGT AGTGTGGCAG GTACCTGTAA TCCCAGCTAC TCAGGAAGCT GAGGCAGGAG AATCGCTTGA ACCTGGGAGG TGGAGGTTGC TTGAGATGGA GTCTCACTCT GTCTCCCAGC CTAGACTGTG GTGGTGCGAT CTCTGCTCAC TGCAACCTCT GTCTCCCGGG

TTCAAGTGAT TCTCCTGCCT CAGCTTCCCA AGTAGCTGGG ATTACAGGTA CCTGCCACAC ATGGATGATA AATATGATCA AGAGACCAAT TCCCAAACAT GAGCATTTCT TAGGAAACAC AGTAAAGATC TGAGAGACCC AAGAGCAGAA GGGCGAGAAA CCAAAAGCCA TCAGTTTGCA TAGGAAACAC CTTGTTTAGC CTAATCTTTT TATTTTTATT ACTCTATTAG TCACTACAAC TATTTTCTGA TTGCTATGGT GATAGATGGT TTAAAACAAG CCTTCATTAA GAATTGTCAC ACCATGGTCT CAGTCAAAAA CACCACACATT TTTATTGGTA TTGACAATTA TGGGAATATC CAATTCCAAG AAGACAAGGA GACCTCTGAA CTTTCTAAAT
GAAGACTCCA ATCTTCCTGA TCTGATGGGA AGCAGCTTGG CAAGATTACC AACCACCACC ACAGAGATG GACTCTAAGC
TAAGACTTAA AAGATAAGTA GAAATTATCC AGGTAAAGAT GTGTACAGAG AAGGAAGTAC ATCCAGGGGA AAAGAACAAT ACGTGCAAAA GTACGGAAAT GGTAAAAAGT AATACTACAT AGTCAAAGCC AAGCAGAGTT CAGAAGGGAT CTGGTGGTGA AAAATACGGC TAGAGAAAGC AGCAAGGATT GGCTTCTAAA ACCTATGTAG TATCTTGGAC CITACCCTAA ATGTAATGAG AAGCTTCTAA AGAATCTTTC ATTATTCAT TCATTGAACA AATATTTTGA GGCTTTCTGT GAAGAACATC ATTCTAAGTA GTAAAGATAC AGCAGTGAAT AGGACACATA AAATCCTAGA TCTCACAGAA TTGACATTCC AGAGAGGGAA AGGTAGACAA TAAATACATA AACAAATCAT ITAACAAGAT GATTTCAGAC AATGGTACGT ACTGTGAAAA AAATGAAACA AGGTAATGGA CAGCGAAAAG GCACTGGAAG GAAGCCTGCT TACCTTTGCA TGGTTAGAAA AGATCTCTCT AAGAAAGAGA CCACATGTGA GCTGCGACCT GAAGGATACC GAGAAGCTAG GTGTGCAAAG ATGTGGGGAC AGAACTTTTG GACTGAATAG CAAATACAAA TGCCCTTGGG TGCAAGCTTT GCCTGTTCAA GGACCAAAAA GAAGGCCAGT GTGCCTGCAG CATACTAAGC ACAGAGGAAA ACACTGTTAT ATGCTGAGAT TGGAATTATA AGTAGAGCCA GATAATATAG TCTCTTATAG GTCATAATAA GGCAACCAGA TTTTATTCCA AGAGGATTTA AAAATCACTG GAGGTTTTGC ACTAGGGTGA GAGGTGTGAT TTGTATTTTT AAAAGATAAT CCCAGTGGAG ATTTCAGGTG AGTGGAGCCC ATTGAAAGGT AAGGGACAGG GTCAGGTGTG GTAGGTCAGG CCTGTGATCC CAGGACTTTG GAAGGCCAAG GCAGACAGAT CAGTTGAGCT CAGGAGTTTG AGACCAGCCT GGGCAACATG GGAAAACCCT GTCTCTACAA AATATGCAAA ATATTACCTG GGCATGGTGG CATATGACTG TGGTCCAAGC CACTTGGGGG GCTGAGATGG GAGGATCACT TGAGTACAGG AGGCGGAGGT TGCAGTGAGC CAAGATCTCG CCACTGCAAA CCAGCTTAGG TGACAGAGTG AGAACCTGTC TCAATAAATA AATAAGAAAC GTAAGGGAAA AGGAAATTAA TCTGATCATT GGCAAATGCA TAGTATTTAA AGCCAGGGGA GTAGATGAGA TACTCAAAGT AGGTGAAGAT AAGGAGGCAA TGAAGGCCTA GGACTCTGGT GTACATTTAG 30 ATGGTTATAA GAGGAATAGA AACTGGCAAA ATAAGTAACA CTGAGCACCC AATGAGGTGG AGAGGAAAGC CAGGAGATGA AGCATCATAG AAGGCAAGAG AAGAAGGGTG TCAAAGAGGC GAGGCAGTCA TCAACTTCTG GGCAGTCAAA TAATATAAGG ACAGAAAAGT GACCATTGGA TTTGGAAATA TGATGAGCAC TTTGAGTGGA GTGTTGAGAC AGAAGACCAA TTAGAGTAGA TTGAGGAGAT AACGAGAAAT GAGAAAATGT AACCTGCAAG CACAGACAAT TCTTGAGAGA CTTTTCTGTG AAAGGAAACA AGAAGAGAT ACTGGTAGCA GAAATAAAAA CAGCACTGGA GAAAGAAGAG TTTAGATTTT TATTCTTTGG TGTCAGTTAG ACAGGAAAGT AAGACATTAG AAGACTCCTT AGATAATTTA TGTAATTGTT CACTTAGGAT TTTTAAATGT GATCACTGAT ACAGGAAAGT AAGACATTAG AAGAGTCCTT AGATAATTTA TGTAATTGTT CACTTAGGAT TTTTAAATGT GATCACTGAT ATTGGACATG TTCCTAGTGA AGCATTTTTG GTGTTTCACT GGTTGAAGTT AATAACTGTA AAATTATTTC CCGTTCAGGA CAGAAAAACA GAAAACTTGA AGCTCCTATT AGAAAGTTCA AGATTTCTCTG GGGTTCTTAG GATTATCTGT TCCCAAAACT CTGCAAGAA CAAGAAAATG ACCTGTATAC TTAACTGGTC TAGGCAACAG TGGAAAGACA ATTCTCAGAG AAGATTTGTT TTAAGAAGAC ACTTTCCATA GGAATCAAC AATAGCTTTC AGGGCACACA ATTGTTAAAT TCATAAACTT ACCAAGGACT AACCAGCCTC TGGGGAATTG CTGTATACTT TCGACCCCG TGTTCCTGAA ATTGTTAAAT TCATAAACTT ACCAAGGACT AACCAGCCTC TGGGGAATTG CTGTATACTT AGCAAACTTA CAATGGACAT ATTTATAAGC CATAATGATA ACTGACTAAT AGGAAATACC CTCAACTGAA AATGAGAGAT CATCATTTGC AAATGAGTTC CCTTTTCCC ATGGCCCCAG GCAACTACTG GGGAAAAATGT CATCACTGAAAAAAA AAAGTGATTT GATAAACTGA TTTATATTGT GTCCAAATGT GATTGTATTT TCAAAGATAA CCTAAAGGAG AAATGACTGT TGGCCCAACA CAAGGGACT TTTATATTTG TCCCAAATGT GATTGTATTT TCAAAGATAA CCTAAAGGAG AAATGACTGT TGGCCCAACA CAAGGGCTCTC GACTTCATTT CAGACACTGT GGCCCAATGGT TCAAAGATAA CCTAAGGGGA GAATGCTGTC TGGCCCAACA GCAGGCTCTC GACTTCATTT CAGACACTGT GGCCAATGGC TGGGAAACAG GTATGAACAG TAGGTTTCTG AGTCCCCTGG AATTATTCCA TTTATGTAGC CACCTCCATG ACAGGAAGCC TCCCTACTCT TACTTCCCAG TTTGTTCATT CATGGCACCA GGTTGCAGAT TAAAAATTTGC TCAGTGACCT TTTATCTAAT AATGTGTTAC CTTCTTCTCT TAAAAAAGTAC AAGGGACAAA TGCTCATGGT ATACTTTTAG GAGATTGTGG CTCTCTATTA ACAGTATTTA TTCAACAAAC ATTTATTGAG CATTTATATG TGCATCATGC TAGGGACTGG AACCTAGTAA GTGTAGCACA TATTATTTCA TTTAATCCTC ACAACAACC CATGAGGTTG GTTTTATGAT CCCAATTTTT CAGAAGAAGA AACTGATATT CAGAACCAGT TAACTAACTG GTTCAAGGTC ATGCAATTTC TAAGATACAG AACCAAGAGT CAAAGACATG ATTTTAAACC AAAGCTTTTT CTGCTACTCC ACATTGCTTC CCTAGGTGAG ATCTGAGGCA TTCCGCGAAA AGAGAAGGGT CATAAAGCCA AGGGAAGACA AGCTTAGGAA AAAAAAGGGA AATGTCCTAA ATAAACAGCT TTCCTATTTA CCAGAAACCA CTAGTTTAAA AATATAATGG GAAAAATCCT ATTCACTITA ACAATGTTAA AAAAAAAAA GATAGAAGAA ACATAGGGAT AAACTTAACA
CATTIGTAGG ATATGTAAAG AAACTAAAAG ATGTTAATAA TGGCCTAAAG AAAAAAAAAC TTACATGTAT GGGGAGATAA
ACCATCTTAC TGGATTCTAA TATTTAATAG TCTAGGTGTT CCATTTCTCA CCAAATTAAT GTATACATTT AATACAATGT
CAAACGAAAT ATCTTAGGAA TTGCTTACAA ATTGTCAGAT AATTACAAAG TTTACCTGGG AAATATAAGC ATATATGAAG
AGTGAATGGG ACCCACCAC TCCCCCCAAA ACAAAAAAAGG TCTGAAAAAGG ACAGAAATCA AGGAGAGTC TGCCTCCACAA ATACAAAATT CTATTATAAA GGTGTATTGA TGAAAACAAT TTAATACTAG TGTAGCAATA GGCAGCAAAG CAATGAAACA GCATAAAAAG ACCAGAACTA TACCTAATTA TGATGAAGAT TTAAGGTATG ATAAACATGA CATAATTCAA ATCAGCAGAA ATTGGCATAG ATAGGGTTAA GACAAATAGC TAATCATTAG AGGGGAGGAA GGAAAGGAGG GAGGATAAAA TTAGGTTCCT GCCTTCATCT TACATTAAAA TAAATTCCAG ATGTATTACA TITAAATTTT TTTAAAAAAA GAAACCACAA AATACTTGAA GAAAATATAA GTTGTTATAT AGTCTTTTGA TGGGAATTTT TTTTTTTTTC AGAGACAGGG TCTTGCTCTG TCACCTAGCC TAGAGTGCAA TGGCATGATC ATGGCTCACT GCAGCCTTGA ACTCCTGGGC TCAAGTGATC CTCCCAGCTC AGCCCCCAG GTAGCAGGAA CTACAGGCAT GCGACACCCC ATCCAACTTA TTTTTATTT TTTGTAGAGA CAGGGGTCTT GCTTTGTTTC CCAGGCTTAT CTCGAACTTC TGCCTTCAAG CACCTCAGCC TCCCAAAGAG CTGGGCTGAT GGGACATTTT TTAACATAGT GCCACATTAC CATAAATGAA AAGCTTGTAA AATACTAATT TTTAAAACTA ATAATATTAC GAAAATTTTTA, TAAACAAAGT TAAAAAGCAA ACACAAAAAA TTTGTAGCAC TTATGACAAA TATATGTATA TATATGAATA CAAAAAGAGC CTTTACAAAA CAGTAAAGAA ACAATGAATA CTCCCAATGG AGTATTCAAA ACTAAACTGC TAAAAAGCAAT TCAAAACAAA AAACATAAAC TATGCATATA TOTATGTGAA AAAGTTTAAC CTTATCAAAG AAGTAAACTC TCAAAGAAAT AAACATCAAA TAAGGAAATA GCCTTTTCCC ACAAATAACC AAAATCTGTA AGAATACTGA GCTGCGAATG TTTCAGAAAA AAAAAAAAAT CATACACCTA GTTCGGCATG TAATTAATAT AGATCAGAAC ACTTTAAAAA TATTTATAGG CCAGGCACGG TGGCTCATGC CTATAAATCCC

	ACCACTTTCC	GAGGCCAAGG	CCCCTCCATC	A COTGA A GTC	AGGAGTTTGA	GACCATCCTG	ACCA ACATGG	TGAAACCCTG
		AAATACAAAA						
		AACCCAGGAG						
_		CAAAAAATAA						
5		AAGGGTTTAC						
	TAAAAATATA	GATTAAGACT	GTACATTGTG	GTACAGTCAT	ATAATCAATA	GTATACAGCT	TTATTTATT	TTCAGCCACT
	GTCCAAAATA	TAGCCTGGCC	TAACAACATT	CTGTTAGGAT	ACGCAAGCAC	CGTGAGGAGA	TCAGCTATAA	AGTATCAGTG
		CTGCTCCTTT						
		TCTCTGTTAC						
10		TCAGCCTTTC						
10								
		TCTATATCTC						
		TTTTCTCTCA						
	TTTTGAGACA	AGGTCTTACT	CTGTCGCCTA	GAATGGGGGG	AAGTGGTGTG	ATCACAACTC	ACTGCAGCTT	CTACCTCCCA
	GCTCAACAGT	CCTCCCACCT	CAGCCTAGTG	AGTAGCTGTG	ACTACAGGCA	TGTGCCACCA	TACCCCACTA	CTTTTCATTT
15	TTTATTTTT	GTGAGATGGA	ATCTCACTAT	GTTACCCAGG	CTGGTCTGCT	GATCTCAATT	GATCCTCCCA	CTGTGGCCTC
_		GGGATTACAG						
		TATTTTATCA						
		AGAGCCACCA						
		CCACAAAACA						
20		AACTGCAAAA						
	ACTGGATCAC	ATTTTTATTG	CTGTTGGAGG	TGCCAAATGT	GTGTGTTTAT	GCTAATCCTC	CACCTCAGGC	AACACACAGT
	CAAGGATCCT	ACCAAGTGTT	ACCGTCAAGT	GTCTGTTGGC	AGCTCAAGGC	CCCAGCGTTG	TTCCCTTGCA	CTAGGGAAAA
	GACATATTCC	AGGTACAAGT	ACTCCCACTT	TGATGCTACA	GAGGAGTTGC	TGAACTTTGT	GTCATTAATC	TCTCTTCGTT
		CCTGTTTAAA						
25		TGCTCCCTTT						
23		TGTCAGTCAT						
		TCTTCCCCCC						
		CCACAAACTC						
	ACTGCCTATC	TGTGCTTCTA	TCTAAGGCTA	ACCCTTCCAC	TTCAGTTTTG	AATATTATCA	GCTCTTACCA	ACTCAAGGCC
30	ATTGCTCTAG	CAATTCTCTC	ATTCTCTCTC	ATTITCTTCC	ATCAAGTTTT	CCTTTTCTTC	AATTAACAGA	GTAGCTCCTA
	AAGGGAAAAA	AAAGTCTTCT	TTTTCAATGC	TCATCATCAC	TGGCCATCAG	AGAAATGCAA	ATCAAAACCA	CAATGAGATA
		CCAGTTAGAA						
		CTGTTGGTGG						
		CATTTGACCC						
35		ATGTTTATTG						
33								
		AATGTGGCAC						
		AGCTGGAAAC						
		TGAACAATGA						
	GTGGGGAGGG	ATAGCATTAG	GAGATATACC	TAATGTTAAA	TGATGAGTTA	ATGGGTGCAG	CACACCAACA	TAGCACATGT
40	ATACATATGT	AACAAACCTG	CACGTTGTGC	ACATGTACCC	TAAAACTTAA	AGTATAATAA	AAAAATATAT	ATATATATAT
	AAAACAACTA	AAAATAAATC	TTCTTTTTCT	GCAGGATCAG	TCCATCACCA	CACACACAGG	CTGTGTTTTA	TGTTGTTCCC
		GATCGTTCTC						
		AGTTACATAT						
		TCTAATTGCA						
15								
45		TCTCGGCTCA						
		ATGCACCACC						
		CTCTGTTGCC						
	CGATTCTCCT	GCCTCAGCCT	CCCGAGTAGC	TGGGACTACA	GGCATGCACC	ACCATGCCAG	GCTAATTTT	TTGTATTTC
	AGTAGAGACC	AGGTTTCACC	ATGTTGGTCA	GGCTGGTCTT	GAACTCCTGA	CCTCAAATGA	TCTGCGCACC	TGGACCTCCC
50		GATTACAGAC						
		CTCAAACTCC						
		GCCATAAAAC						
		CTACGGCATT						
E E	CITTIACCI	CTTTTATATG	CICTICCAGI	CICAGGCICC	TTTGGGGATT	IGAAGGIAIG	TIGCATTIIG	CIATICAAIG
55	AATAATGACA	AGTAATGATC	ACTTAAGACA	TTAAGTGGTC	AGTTCCTTTA	CTAGGATAAA	AATAATITTC	TTCCCAACAT
	GGGGCATATT	CCATTTCCAG	TCTGACTGTT	CTGTGTAATC	TTTGTATTCC	TTGGCAGCCC	CTTTTATATC	AGTTCATCTA
	CTGTGCAGGA	AATTGGACAA	ACATTTGCAC	TGGTATAACC	AAATACAGTT	GAACTTTTGG	CTTGACTCTT	AGCTGAACTC
		ATTTCTGTAA						
		GAATTTCAGA						
60		AGAACTAATC						
00		AGTCACTGTC						
		GGGTGCTTTG						
		GGAGAACTTT						
	GTGGTGCTTG	GTAAGAGATG	CCAGGACCAG	TGGTACCCAC	TGGGAGCACT	GCCAATACCC	AGCAAGGAGC	ATGGGTGCAC
65		TGCACTGTGA						
		AATGICTTCT						
		ATACAACCCC						
		CTCCTGGAAA						
70		TTTTCACAAC						
70		TTAGTTCAAT						
		TGCACAACGT						
	ATTTACATTA	GGTATITCTC	CTAATGCTAT	CCCTCCCCCA	GTCCCCCACC	CCCCGACAGG	CCCTGGTGTG	TGATGTTCCC
	CTTCCTGTGT	CCAAGTGTTC	TGTTTATGTG	ATAGATTACG	TTTATTGATT	TGTGTATGTT	GAACCAGCCT	TGCATCACAG
	TCACTTGCTT	ACAAGAAACA	AACACTTCAC	AGATGGATCA	TTATGTGTGA	TAAGTGAAAT	CCAAGGATTT	ATGCTCAGAG
75	GTGGGCTTAA	CAGGTAGGAA	GAGCAGTATT	TICCTICAAC	CATGAGTGTA	TGCAGGTTTT	TCTTTTCTT	TTTGAGATGG
	210000111111	JACOTAGOAA	. 3/100/101/111	-1001101110	2 2.1010IV		.011110111	

	AGTCTCACTC TTTTACCCAG GCTGGCGCG AGTGGTGCGA TCTTGGCTCA CTGTAACCTC TGCCACCTGG GTTCAAGCA	A
	TTCTCCTGCC TCAGCCTCCC AAGTGGCTGG GATTACAGGC ACCTGCCACT GTCTCCGGCT AATTTTTGTC TTTTTAGTA	G
	AGATGGGGTT TCACCATCTT GGCCAGCCTT GTCTTGAACT CCTGACCTCA TGAATCATCC TTCTCAGCCT CCCAAAGTG	C
	TGGGATTACA GGCATGAGCC ACTGCGCCCA GCCCACAGGT TTTTCAAAGA CTAAACTTAA AAAAAAAAA AAAATTTCC	C
5	AATGAAATAT AAAACTAAAG TGCTAAACTG TGATAGACTG TTTTACAAGA ATGCCAGTTT TCACAAGTGT CTATAGAAC	
,	TGTAATTTAG ATAGGTAAGA TGAAATTTTG ATAGTATTTG ATGGCAAATT TAAACAGGTA TACAACAAAA ATAAAATTC	
	AAGCCCCTCA ACCAACTGAA TGGACTCCTT CTCTCAGCCA AAGGAATACC AAAGTAAACC TGAAAAACTA GTTTTGGCC	^
	GGATTGGGGG TAGGTGGGGG AAGCCCAACA TGACTCATTA TTCTCTCCTC CCTTTGGAAT TCAGGCACAA CTGAATGTC	Α
	GCATTGACAC TAAAACACAG ATCTTAAGAC TGACAAGCCA GACTCTTTGT AGCAGAGAGC CAGGCCCTGG AAGAAATCA	А
10	GTTATTTAT CCCAAAAAAT ATTTCTTGA TATATTTTCA AATGGCCCTG CAAAGCTGTC TCTTGTGGGG AAAATTGAC	A
	TGCTGTACAG AATTTCCTTC TCTTTCCAAG TTTTTACTGA TCCAGGAGAG ATTTAACTAA GAGGCTAGCA TGTTTTTTT	T
	TTTTTTTTT TGAGGCGAG TCTTGCTCTG TTGCCCAGGC TGGAGTGCAG TGGCGTGATC TCAGCTCACT GCAACCTTC	
	CCTCCCGGGT TCAAGCGATT CTCCTGCCTC AGCTTCCCGA GTAGCTGGGA TTACAGATCC ATGCCACTAT GCCCAGCTA	
	TTTTTGTATT TTTTGTAGAG ACAGGGTTTC ACCATGTTGG CCAGGCTAGT ATTGAACTCC TGACCTCGTG ATCCGCCCA	Ċ
1.5	CTCGGCCTCC CAAAGTGCTG GCATTACAGG CGTGAGCCAC CGTGCCCAGC ACAAGACATT TACCGTCTAT TCTCTCTGA	
15		
	GCTACTATCT AGAGGCTTCA TCAACATAAT AAGACCCTTG GTCTCCACAA CTCCTTATCT TATCCTATTA GTTTCTACT	
	ATTCCAGGTC TTTAGATAAT AACAACTCTT TCAACCAATT GCCAATCAGA AAGTCTTTGA ATCCACCTAT GACTTAAAA	.G
	CCCCACTCCT TCAAGTTATC CCGCCTTTCT GGACTGAACC AATGTACACC TTATATGTGT TGATGGATAT CTGCCTGTA	A
	CTTCCATTCC CCTAAAATGT ATAACATCAA GCTGTAACCC AACCACCTTG GGCACATGTT TTCAGGAACT CATGAGACT	G
20	TGTTGCAGAC CTTGGTCACT CATATTTGGC TCACAGTAAA CTTCTTTAAA TATTGTATAG AGTTTGGCTT TTTTCATTG	iΑ
	CACAGGAAAA ATAAAGAATT GGAAGGTCTT TCATCAGTCA CTGAGCCAGC TTCATATCTG ACTGAGGTCA TACAGTTCA	.G
	TGATTTGTAG CTTTGCTACT TAGATTGCTA TCCATTATCT AGAAGCATCA GGATCACGTG GGACCTATTG GAAATGCAG	
	CTTTCCTCCT AGAACCCAGG ACCTTGGAAT ATTCTTGGCA CATAGTAGGT GCTCAATACA TATTGAACTC CTAGGTGCA	
	TTCATTAATT CATGAATTAA TGAATTAACA CGCTCTCAAA GTTTAGTGCT TTTTCACAGA CTAGTCTTTC TGCCTCTTA	
25	GCACTCAGCT CACCACGCTT CCAGTCTCAC TCCCCTATTA GTCTGATTAA AATCTGCTTA CATGTGAGTC TGAGATCAA	c
25	GCACICAGCI CACCACGCII CCAGICICA ICCCCIAIA GICIGATIAA AATCIGCIIA CATGOAGCA	.U
	TGTTATCTCT TCTGAGAAGT CTTCCCTCAC TGGCCCAAAG GAATTTCTCC TCTATTTTAG CACTGTCCCA GTTGACTTC	
	CATTATICTA GICITTITCA TATTAGTIGI TITICATATA TATGITATTA AGGAAACTAG TCATTICCCC TAATAGAAC	
	AAATTGCTGG CCTTTGGGGT TGGCAATGGA GGGGAGGCTC TTCTTGAAAA GGGGGAAGAG TGTTCTCCTA ATATTTTTC	
	TACGAGATIT ATGITGCTCA TCTTTAGCCT TTAGTCCCCC ATTGCCTGCC TACAGTTGGC AGAGACCATC TGTTCTCTC	
30	CTGTCAGGAA CTGTCTCAAT TCTTGAAGTT CAGAGTCAAA AAAGAAGCAA GTTTTCCTAG CTCTTTGATC AACTTTCAA	А
	GTTTTACTTC CATTTGAAAA TTTACTAAGT CACCAGGAGA TGGTTTATAC TGAGAAATAT CCACTCATAC TCTTCCTCT	T
	CAACTITCTI CCATATACAC CCTATTACAG GGATATAGTC TTACTCTATA GCTCAAAAGG ATGACCCTAT CAGAAACCI	Ğ
	CACAGTATGT AAAACATTCT CACCAGAGGT TCACTTGTGT ATTTCCACCC TAGAATGGAA GCTCTACAAA AGCACAGAA	T
	GTATCATTIT AACTITAGAT TCTATTITCA CACCCAGTGC TTGACACATG ATTTGAAGTT AATATTATT TATCAAGTG	
35	TIGITITIAAA ATCATGACTC ACTCAACAAA GITATAAGAA TAAGAATAGT GITACAGAAT TGGTATACAC AAGCTGACC	
55	TAATCAACAC ACCTATTATC ATTITITITGC GACAGGTTCT CGCTGTCTCA CCCTGGCTGG AGTGGACTGG CATGACCAC	
	GTTCACTGCA GGTTTGAACT TCCAGGCTCA AGCAATCCTC CCACCTCAGC CTCCCACATA GCTGAGCCCA CAGGTGTGT	
	CCACCATGIC CAGCIAACIT TITAATICIT TGTAGAGACA GGGTCACCCT ATGTTGCCCA AGCTGGTCTT GAACTCCTT	
40	GCTAGAGAGA TCCTCCCTCC AAGGTCCCCC AAAATGCTGG GATCTCAGGC AAGAGCCACC ATGCCTGGCC ATAATCAAT	
40	CACTTTTAAG AATGCTAGAA TGTTATATCA GATGCATACT TCAGCACTAT CTCAAGCAAA CTGGGGTGTG GGTTATTCI	
	CATATAAAGT TCAGCAGTGT TGTTCCACAG TCCCAAACTC CAACTGAGGT CAAATGTAGG GTGCAGCAAG GTCACTGGG	
	CTGTCATCAA GGGCCTCTCC TTGCACTCTT GCCAACCCTG TTTCTTGATT GTCTCTACCA CCATGAGTCA CCAGCAATC	T
	CCCACAGTCA CTTGTTTAAA AGTTCACAAG TATTGTGTGA ATTGCAGGCA ACCCCTTGAC TCCCTGATTG CCTGGTCTT	C
	TTCCTTGGGC TCTACCATTT TTTTTCCCCA GCACTCTTTC TGCTGCTCTA AATTITAATT CATGCAATTC CATATGTGT	T
45	TCTCTATCAT TCTTCATCTC TTTCCTCTCC CTTCCATCCA	
	TTTCTCTTTT TCTGAGAAGG CTTGAGTCCA AAACTCTCAG TTACCTGTTG TTCTGTTTCC CGTTAGTTAA TCTCCGAAC	
	TTCATAAATT AAATCTGACA AAGTCCCCTG ACTAACAAAG GAAATGCACA AGTCACAGTA AAAGGGGCAC ACACAGAAC	!Ā
	CAAATAGACC CAGGGTCTTT TCTGTTCATC ACTCAGCTTT TTATAGGAGA TCCAGGAGAA ATGAAGTGGA AAGGGAAGT	
	TGTTGAGTTA CTATACAACA CAAGAGTAAA CTTTCTTATA AGGGTAATT TTTTTTTACA GGAATAATTG AAAATTGAA	
50	IGHIGAGHA CIAIRCAACA CAAGAHAAA CIIICHAA AGUGHAAH HITHIACA GGAAAAAHAA AAAAGGAA	in.
50	TTACCTTCTC TACTCATAGT AAGTACTCAG TGCGTTCTTG ATGGGATGAG AATGTGTTTG AGCTTTAGTG TAAGGCAGA	
	TICIGITING TOTGCCAGTA TIGGAGAAAA ATAAAACACA AAGGGACTGA CATGTAGGAA GTGGCACCTG GGAGGGTCT	
	AATTCTTCCT ATTACAAAAA TGCCCCAGAG AAATAAAAAG CTTGTGTACA TGTTGAGATG GGAGAGTTCT CTGGCCCCC	
	TCGCAGGATG TGTGACAGTG GGGTGGCTCT CTGCTGCGCC ACCATGAGCT CAAACCCCTC ATAGGAGGGG GAGCACACA	
	GCAGGAAGGT GCAGGAGCTG GGCGAGCTCT TTGGGCTCTG GCCCCGTGGT ACTGTCTAGA GGTGGGTGCC TGCAACTCC	
55	GAAAGCCCAA GTGGGCATGT GTTACAGTGC ACTCTTTCAG CTTTGCTGTC TGCAGCTTAA GCGTTAACCA GCTCAGTTT	C
	TICTTGGTAC CCAGGTCCTT GTCTGGCATC CAGGAAGAAT CAGGTTACAC ATGGACTTGA AGGATGAATG TGGGAGTTT	ſΤ
	ATGGAGTGGT GGAGGTGGCT CTCAGTGGGA TGGATGGGGA GCTGGAAGGG GGATGGAGTG GGAAGATGAT ATTCTCCTC	
	AGTTTGGCTG TCCAGCAGCC GATCTCCTCT CCAGTCGTCC CCAGCCTCTC GACGTTCAGA TGCTCCTCTT CTCTCCTTC	
	CTGCCATGCT GTTCTGCCGT TCATCTGCCT GTCTCTCTCT GGAGCCTGGA ATTTGGGGTT TATATGGTAC ACAATAAGC	
60	GCATGGCAGG CCAAAAGGGA ACTITITAGG TGCAAAAAAC AGGAATGCCT CTTCTCACTT AGGGCTATAG ATTITCAGC	ìC
00	TIGAAGGTGG GGCCTITACC AGCGAACCTG TATTTCCCTG TCTCCTGTGC ATATCAATGT AATCAAATAC TGGGCTGAT	rC.
	CAGGATGTTT CTTTAGACCA ATTATGGGTA AAATAATTTA CATTCAGGTT TTTATATTTG CTTTTGTCAT TTCTTTTA	
	CAUGAIGHT CHIRACCA ATRACCION ARABITA CATICACHT THAIRTIG CHIRACT ACLIENTE	r'A
	GCAATCATGT AAAATATCTA TACGACAGTA ATAGATGATA GCGAACCTAA TTAAAATTAC CAGAAACTTA AGAATCTCT	.A.
	ATGATTICAA CIGTAACTAA GGITATTICT CTTTATGTTG AACAATGTTG GGAGATAAGA CACAAGAGTT TCTGAAGTA	
65	TTCAGAAACA CAAAGAGGGA GGTTATATAA ATAATATTT TTTCCTACTT TGGGAAAATG AAAGCTAGTC ACAAAGTTA	ıA
	ACGAGTGGTT ATTITAATAT TTAAAATACA GGCTTGGATG TATTTCCTGT TAAAGAAAAT AAAATGCAGA ATATTCAAA	ı.A
	COTCTGACCA CCCTTCTAAG AAAATGCATC TCTGAGGTAT TITTCCTTAG AAGTTATTGT AAAAATCCTG GAGAAGCTI	ľG
	AACACAGCAA AGCAAACAGG ATGCAGAGTT TAATCTGTGG AAAGCTTAGG GAAGAAAAGC AAATCATTAA AAATAGGTC	T
	TCCTCTGAAG ATTTTTAAAA CGCAAAGAGG GTGGAATAGC AATGATAATA AAAAAGCTGG CATAGAGAGT GGCACAAT	T
70	GCTGTGCCAC TGAGCTGACT GGATGTGTTC TGAATTTCTA GGCATTAGTG TACCTTTCCA CACGCATTCT CCCTTTAAA	A
. •	AAAATGCCCA CACACTGAAT ACTITITICA TGCAATITAA AATAAGCGCA CCATCTAGTT TACAGAAATT CACTAGAAC	ЭT
	TATTTATCCT AAAATAGCAG AGATCTAGAA GAATTTTGAG CTCTAGGACA TTTTAGACAC ACAGAAAGAA GAATCTGGA	(C
	AAGTCTTGAC CAGACATGAC AGAATAGAAA TTTCTTTTCC TATTTATCTC TTTGAATAAA ATTTTCAGGA TCTTACAGG	ī
	GACAAGTITG TTATCTACAC ATIGTGAAGC ACATTGATTT CTCCTCTGTA GCCTTAGGAA GATCTGAGAG GTGACTGAC	:0
75	TAINTOLING TIMICIACAC ALIGINAAC ACAIGATH CICLICITA GCCTIAGGAA GAICIGAGAG GIGACIGAC	٠٠.
75	TGATTGAATG ATCCGTGACC GCTCTACTGG GACCAGTAGT AGAACTTTAC TGGTGGAGAC CTGCTGGAGG TTTGAGAGC	,A

	GACTTTGAAA ATTACTAGAG CTACACAGAT ACTGTGTGGC TAACTGGATT ATGTTTAGAG GCTTTCAGAA CTATGCTGCT
	GCTGCTGCAG TGTAGCCAGG ACGCACAGAG AACATCTAAG GCTCTTGAAT GGGGCGATAG GGACAGATTT CAGCAGCCAT
	CTGACTTCAG TGCTCATTTT GATGCTTTCC CTGCAGGGTG CAGTGTGCAG TGTGCAGTGT GCAGTGGTGG GAGGCTCACA
	CAGGAATACT TGCTTCTGTA GCCCTAATTT CCGGTTCAAA CTCTGCATTC ACCTTGACAG AFTCTTTCCT TGGCCAAAAT
5	TTAGTTAGGC TTCTGGGCTT TCTCTTATGC CCACCTGCAG ACTTTTTGGT AAAATCCAGT TTTAGTAAAG AGCTCTGCTA
	AGTCAGTTTA GCAAGAATCC CCACCTCAAA AGTCACTATC TCCCTCCCTG GTAGTGTCTG GCTTGTCTTC AGCGAGAATT
	CTATTAGGTT CTGTTAGATT AGAATCCTCC TTACCCTTGA TGCTTCCTCT TAGTATTTTT TCATCCACTG ACTCCTTGAC
	CCACCITGCT CCTCGGCTAT AAATTCCCAC TTGCCCATAC TCTGCAGTTA AGACTATTTT CTCCCCACTA CTGCAAAATC CCATTGCCAT GGTCCCTATA CTATCTCAAT GGTAATGAAT AAAGTCTGCC TTACCATGCT TTAACAAGTA ACATTGAACC
10	ATTITITICI TTAACAATCI GCIGCACAAT GAGATTACTA AAACTITATT CCATTITIGC ATGCTGGATG TCCTCAATGG
10	AATGGCTCTT GTGAGCACCA AATCATTGTG AGAAGGAAAA CCCATCTCTT ACAGCCCCCT GTAACGTGAT GTATGTTACA
	TGTGATGTAT GTTACATAGT TTTTTTTCAT GTTGATCACT TTTTGCCCAT TTTCCTATAT CTTATCAGTT GGAAGACTGT
	GGAAGTTTGT AGTACTAAGC CACAAGATGA CTAAGAAGAG TTGAAAGGGC AAGTGGGGCT AAAAACAGAT TTTGTTTGAC
	TTACCCCACC ATTCCCCTA TCATGGGGCT GAATCTGCCT GGAGGAAGGA GCATCTTAT CTTTGTACTG TGAACCACAC
15	AGTCTAGCAG CAGCACAGCC AAGGCACTTG GGGTTTCATG AGACTAAGTA CATGCAATTC TATTGTAAAG GCTTAAAATA
	TATACAACTG ACCCTTGAAC AACATGAATT TGAATTGCAT GGTCAGTTAT ACGCAGATTT TCTTCCACCT CTGCCACCCC
	TGAGACAGTA AGATCAATCA ATCCTCTTCC TCCTACTCCT CAGTCTACTC AAAGATACTT GAAGTCTACT TGAAGATGAC
	AAGCACAAAG ACATTTATGA TGATCCACTT CCACTTAGTG AATAGTAAAT ATGTTTTCTC TTCCTCCTAA TTTTTTTAACA
20	CTTTCTTCTC TCTAGCTTAA TTTATTGTTA AGAATACAAT CTATAATACA TATGACATAC AAAATATGTC TTAGTTGACT
20	GTTTATGTTA TCTGTAAGGC TTCAGGTCAA GAGTATGCTA TTAGTGGTTA AGTTTTCGAG GAGTCAAAAG GTGTATGTGG ACTTTCAACT GCAGGGGGGT GGGCACCCCT GCCCCCATGT TGTTCAAGGG TCAACTTTAC TGCCAAAGGC AAGCCTTTAC
	ATCCACTTIT TCCATCCCAT CAGTAAATGG AAAAAGATAG CTACAGTATC CCTGCGTCAA ATCTTTTTT TTGCAGATCA
	CAAATTGGCC ACTCACCTTG CTCTGTGAGG GGTAAAATGC CCCACTTTCT TTAGTAATAT TTAAGTTAGA TAATATTTAA
	GTTATAAAGT TGTTCTTTGT AATCGTTAAT TGTAATTTTT ACATAGTTTC TTTCAAACAG AAATAGCATT TTTGTTAGAT
25	AACCTCCCGT ATAGATGATG AAACTCCTTT TAAGGGCTAT CTGAATTTTA ATTCCTTGAA AAGGCAGAAA TTGGATAGCT
	AGTAGTCATA AATGTACTGT GGCTTCCCCC AACCATCTGG GCTATATAGA AGCTGCATCC TTGGACTGCA GTAGAGGAGT
	CTTACAAAGC ACAGAGCAAC TTCTCTCCTG GGTTGCGCTA GTTATGATGG CAATTITAAA TGTGTACTIT TACCCAAAGA
	AAATCCTTAT TATCAACAAT CACAATGCCA TCATAACCAT GGTATAAAAA ATTCAAAATG TCCCAGCTGA AGTGGAGGCA
20	AAGACTCAAG TTCATGGAGT CAGAGTTTCC TTGCTATTCC TCTTTTTCAA ATGACCATT AGTAAGCACC TGAAGAAAAT
30	ACTATGGACG GCATTGAAAA GTGAAGATAG GTTTAATCTT CTCGAAAATC TAATTCTCCA GATGAAACGC TGACACTTAT
	CCACCCCACA GACCCTATAG CAGATGTGTC ACTGGCCATC ACATTTGACA CAGAGAAGTC ATAACTCAGT CAGCACAGAG ACATTTCCAT GAGTTTCTGA ACCATGGACA GAACGTCGTC TGTGGGACAT GAAAACTGGA ACTTAGAGGA CAGGCACATC
	TGAGAAATGG GCAGTITIAAA GGCAGAACAT AGCACATATG TGACTGGGTT TTAGAAGCAA ATTTACAAGA CGCACTCTTC
	TICATCCTAA ATAATCTGCA ACCAAAGCTT CCAAAAAAAGA CAATTTAGGA ATGCAGAGGT GAGGAGTAGG GAGGGGAATG
35	GGATGAGAGA GAGTGGAGAT TAATGGTGGG CAGAGCGAGG TTTAGAACTT AGTGGTTTCT TCAGGTTCTG AACTGAAATT
	TGTATACTGT AAAGGCACAA ACACCATTTT TAACAAAAGT GAGCAGGACT TCCTATCTGG TTCAGAAAAT AGGTGAATAA
	ATAGTACGAA TTATTAAAAA TAATAATTTC CACITATACA TAGGAAACTT GATAGGAACC ATGATAAATG CTTAACTCTT
	AATCTTCAAG GAACTCTGCT AGGGATATAA TATTATAAAT CTTGTTTTGC AGATGGAGAA ATTGAATTTT AACCCAAGTT
40	ATCATAACCC TTAAATGATT AAATGATACT GTTACATGAG AAAGCTGCGT ATCTGTTTCC TGGATTTGTA GCCATAATTT
40	GTGTCTCAAG TCCCTTTTGC TGCCAGCTAT CTTGGGTAGG TGTGTTCCCT TTGGGCTGTT TGATACCCCC ACATTTATCT TTTTTTTTC TCTTTTTTTG TTGAGAGAGT CTTTCCCTGT TGCCTAGGCT GGAGGGCAAT GGCGCGATCT CGGCTCACTG
	CAACCTCCGC CTCCTGGGTT CAAGTGCTTC TCACGATTCT CTTGTCCCAG CCTCTCTAAT AGCTCGGATT ACTGGCATGC
	ACCACCACGC CCACCTAATT TTGTATTTTT AGTAGACAAG GGGTTTCTCC ATGTTGGTCA GGGTGGTCTC AAACTCCTGA
	CCTCAGGTGA TCTGCCTGCC TTGGCCTCCC AAAGTGCTGG GATTACAGGT GTGAGCCACC ATGCCTGGCC CCAAATTTAT
45	CTITAATGCC CCAAATTATC TAGITCCCAT GACTGGGCTT CTGCTTTGAT CCTTTCTGCA CTTGCTGGAC CCTCTCCCTG
	GGAAATGAGA TTGTGTCCTG AGCCCCTAGT TAGAGGCTAT GTCTCTGCTG TTCCTGAATG GGCCTCCTGG ATGAGACCTC
	ATTAAAAGTC TAATTCTCTT GGAGAATTGA GAGATACCTA TTTGTCTCAA AATCATTGAA ACCAATTAAT GTATTATGAG
	CCTCTATCCA GTGATTTGTA CCTCAATTCC CCAATCCAGC TGTCAAGGCC AATTTGTTCT ACCTTACCTA GTAGGTAAGT CTGGAATTGT AGCTGTGGCA TTTTCAGTAA TGGTACTCTA GGTTAGCAGT CCCCAACCTT TTTGGCACCA GGGACCAGTT
50	TIGTGGAAGA CAATITITCC ATGAAGGGCI GGGCAGGGA GGTAGTTCAG GATGAAACTG TTCCACCTCA GATCATCAGG
50	CATTAGATTC TCACAAGGAG TGCGCAAGCT AGATCCCTCA CACATGCAGT TCACAATAGG GTGTGCACTC CCATGAGAAT
	CTAACACCGC TGCTGATCTG ACAGGAGACA GAGCTCAGGC AGTAATACTC ATTTGCCTAC CGCTCACCTC CTGCCGTGCA
	GCTCAGTTCC TAACAGGCCA CGGACCAGTA CTGGTCCACG GCGCAGGCAT CAGGGACCCC TGTTGCTAGG TATAAGCATC
	TGGCTGCTGC ATGTCTTCTG TGTAGCTACA TCTGTATGTG TATCTGATGA GATATAAATT ATTTGATTAT AAATTACTTT
55	CTTCATATTA GAGTTGTGAA TGAGTATCAC ATATAATTAT ACATAAACTA GGAATATGCT TTTTAATAAT GTATATAAGT
	AAGTITICCTT AACTATGACT ITCATCTTAG CGTAGTAAGA GGGTGCTAAG AAATATTTGT GATGAAAATA GGCATTGGTA
	GAGTIGAGAC CACTGGGTGA TGAAAGAGIG TAAAGATITT AAAGCCTTCA GATGCTGGTT CAAGGTGAGA AATGTGATIG
	GGAGCAAATC AATTAACTTC TTGAAGTCTT ATAGGGCAGT TATGAATACT TAATGTTAAC ATATGTAAAG CTCTTCTGCC CTGTATACAG TAAATGCTAG TTAGCTATTA TGATCACTAC TAAAATGGGG ATGACATAAA CCTCATAAGG TTTTAAGTAT
60	TATGCAAGAT ACTATACAAA GTCCAGTAAA TATCACATTC AATTGAATCC ATGATGTCCG ATTATTTTAG CTACTTCCAA
00	GAGAGAAAAA AATGCTGTCA GTTTTACTGT TCTTATAGAG AGCAAGGCAG ATCCCAATTC CCAATGTGGT AACGTGAAAA
	TTTTTGCATT TGAATCAACA AAACACTTTC TCCTTTCTTT CCTACTATTT AACAACTGGT AAGTCTATAC TCCCCCAAAT
	CTGGAATTCT CCTTTCTTAT TCTTTTTCCT CCTACCAAGA CCGCAGGATC TTTTACTTGG CTATAAGGGG TAAACCTCAA
	GTAGTACAAG TTCTCTGTAT TACTTTTATA CTCTGTCACA GATTCCCTTT GTTTCCTCAT CTCCATGTGA ATTTAGTTAA
65	ATTCTCAGCA TTCTGATCCT TACTATACAA GGTAAATGAA TATAAAAACA AAACGAAACA AAAACCTCTT CCTATTTACA
	TAAGGCCCCA ACCTAATATT TAGTGATATA TATTAATGTG AACAAGGAAC TAACGAAGAC TGGGAAGAAA TTCACAGACT
	TGAGAGAAGA AATGGCAGGA TTTCCTGGGA ACAATTTCAT GTAACGTCAA AGGTGGTAAA AGGTCAAATA GAATGAAGAT
	GGAGAATACC GGATTTCCTT ACAAAATGAT TTCCCAGGAG ATCTCATCAA ATGCACGAGG ATACCTTCTC AGTTTCACCT
70	AGTGAGTAAA AGACTGGTAA CATAGCTCAC TTACAATTTG GATAAACAAA ACTAAACAAA CAACATCAAA ATTTCAGAAA AAATAATAGC AAAACAGAAA TCAAACACTC AAATTTTTGG TCCTTCTGTT TATTTCATTT TGGATACTCA GTGAATGTTA
, 5	ATTAACCAGG AAACTTAAAA GTTATTTCAA TTATGAACCT CTTCAATCCT TCATCAATTA TTTTGAGTAT TCTGGTCTTA
	AAAACATCTC TTTCTTCTAC AAACTTCTGA AAGAGATGAA CACCTCCACC TACACCAAAA TAATGTGCTT TGCTGGCCAA
	AAGTACACGT CCATTTTTAC TTAACAGTCT AAGGAAAGTC TGGTGCAAAT TACTATAATA ATCTGGGTTG TAAATGGTTT
	CTGAGGTGAG AATGAGATCA TATTTTACAA AAAGTTTTTC ACTACTTAGT ACAAGCTTAC AAAACTCAGA CCACTCACCA
75	GAAAAAATC GGCATTTATA TAGTTGTGTT ACTTTTGGTT TCCTGCATCT TTTCACATCT GGCTCATTTA CATCATTTTC

	TICATCTICC AAAGTGGAGT TAGCTACTAC ATTAGGTAAG GTTACTTCAT CAATCACCAT ACTGTTATAA TCTTGAAA	СT
	GAATITCTIT GGACCCICCC TIGAATGCAG ITATACCTAG TAAACCIGAT CCACAACCAA GATCCAAGAC TITITTICC	
	GCAAATTICA CITTGGCCTT TGTGAAATAA GCCAGGAGGT CAAAGGTACA TTCCCAGATT TTTAAGCCTC CCTCATAA	
_	ACCTGTAATC AGATCAGAGT GAGAAGAAAA GCTTTTTGAA ACTATGTTTT CTCCAGGGAA GTTCTCTTTC AACAAGAT	
5	TITTCACTAC TGATAACTTA ACATGCTGGA AACCTGGTAA TGTTTCTATG ACTITATTTT CTAACATCTT CTTTAAAT	CT
	TTAGGCATAG CATGCTCTTT GGCAGCTCTC AAGGAGGGCT GTTTTCCATG TGGCTCCAAG TTCCTTGAAC TGCTGGCT	GC
	ACTGAGTGGA CTGTCTGTGT CTTGAGAGGG AGCTGCATTT TCCATTGACT TATGTTCCCA CAAGTGATCC TGAGGCAA	GT
	CAAATTGTTC TGCAGAACAT TTTCTGTCCC TCTCTTCTC TTTTTGACTT TCTGAGACTG ACAGCTCTTT TGAGGAAT	
	AGGGTCAAAG CTCCATCTCT AATGGGTGTT AATTCATTTT CCAGATGGTC TTCTATAGTG AAATTAAACT GAAAGGTC	
10	CCICITATTA AATGCACACA ATCTITAAAT TCAGATICTI CAACITCTIGG ATAGAATTTIG ATGATACACA CAAATCTG	
10		
	TCAATTATTC AATTAGTTIT GTTGGGCCCA ATTTCTCTTT AGCAGCTTAT ACATGGTAAC AAATATTTAG AGATATTT	
	AAATGACTIT TTAGACGTCT TTGGTCCTCT TTCCAAGCAG CTCTGGAAAG AAAAAAAAA AAAAAAGAAA GAAAATGA	
	ATTAAAGCAA AATGGCACAT TTCACTAAAG TGTAATATTA AACAGCCACC CCCACCCCTC CCTGTCCCAC CATACAGC	
	CTTTTTCTTA AAAAGTTGTG GGGAAGAGAG AGAGATAAGA GATTTGGACA CTCATACACA CCTTAAGGGT TCCAAAGT	GG
15	GAGAAGAAAA TCAACTATAA AAACAAACAG AAGAACAACA GCAACCACCA CCACTACCAC CTGGACAAAC ATAAAGTC	CA
	AGATATTCAG ACAGGACAGC CTAGCTACTT GCTGTCTTTC AGCTGTCTTG ATTTGTGTCC AACCATATTC ACCCCCTA	AG
	CTTCCAGAAT AACTTCACTT CTGTCTTTTA CAGAAGAGGT GCAGTATTTT ATTTTGGTAA GTCAGCGTCC CTTTAAAA	
	ATGCATAGGT ATGGCCTGGT GTGTGTAAAT TCATCCAAGA CTTCACTCCA AACATTTAGT CGAGAACAGC AGCCCTAA	
20	GTATAGAAGT GGGGGTAATT TGGCAATAAT TAGTAAAGAC TAATTCGGTG GCAGAGCAAA CGCAAACTAG GGCACTGC	
20	TAGTITIGAG AGACCIGTAG AAATAAGAAG CAACTITATI GAGAATCTIC TATCTACTGC GCTAGACACT ATACCATC	
	CCTCAATTTT CACAGTTCTG GCAAGTGGGA TCTTTGTTCC CTTTATACAA GATTTACAAT TTGGGGGAGA GGCGGGTC.	
	CCAGTCCCGC GGCTAGGAAC GCGCCTCTTT CCTCTCCCAT CACGCTGCAA GGCTTGGAGT CACTTCCGGC TGCAGGTC	CC
	GGAACAAATC CGACCCCAGA AGTGGGGACT TCTGGCCCTC ACCTCCCCAT TTGAATGTAA TGTTTACAGT GATCCAGA	CC
4.7	TGGGGATGCT TGCTTCCCGA CGTGTCCTGG GATCGCGCTT CTGAAAAAGC TCACCTCACA ACGCCTCCTC CGGACCTA.	
25	TCGCGCACCA GTGAGTCGAG TCCTCCAGGG GCTAGAGAAG CCCGACTTTC TTTCCGGCCT TGAGGGACCC GGGCTCAC	
23	AGAAACCAGC CGCCCTCCTC TCTATGGTTT TGGAGCCGGC GGAGAGCGCG CAAGGGTTGG CGGGACTGCG AGTTTCCG	
	CTGGGCTTTG GCGGGTCTGG TTTGAAGCTC TCCTGTTTGA CGAAAGTATG TCTCAGGAAG GTGCGGTCCC AGCTAGCG	
	GTTCCCCTGG AAGAATTAAG TAGCTGGCCA GAGGAGCTAT GCCGCCGGGA ACTGCCGTCC GTCCTGCCCC GACTCCTC	
	ATCCTTCCTT GGTTGTCACT TCTACCTAGA GAAGGGTGTG GGCGGGTCGC GAACCTTTCT CTTCTGTCCC TTCAGACC	
30	CCGCCAGGCT GGGTTATATT ACCGCGGCCT GAACCCCCTC TTTTCTTTGT CAGTGAGTGG GATGAAAAGT GAGGGACTG	GG
	AGGGGAAGCG ACAACCGTGG TAGATTTAAG TAAGGCTTTG GCCCTGGAAA GCCTCGCGGA CGTGTTCTGA CCCAAGGT	TT
	TAGCAGTGGA TGTGGCGTTT TCTTCCATTC CTTCTTTCAG TTTTTCTGTA CTCGTTGCTT GCAATTAAGT GTAAATAC	TT
	TTGCTAGTGG ATAATGGGGG AGGCAAGGAC TGAGACCTGC GGTATGACGA TAGCTCTGGC TCTTAATAGT TTGAGGTA	
	GCGAGATACT CTGAGCTTTT GTCTCCCGTA AAAAGGGTGG TGAATATGAA TAAGGGCTTT CTTAGCGTTA TAAGAATT.	
35	AGGGCATAGT TCTGTGGTGT GAAATCTTTA AAAGATGTTC AGTAAATAAA AATGATTTTC CTCCTTCCCC TCTCAGAC	
33		
	CTITITCTTC TTTCTTTCTT TTTTTTTGAC AAGITCTCAC TCCTCCACC CAGGCTGGAG TCTTTCTGAA AGAGTTCT	
	CGCTTGTTGT TGGCTTTCAA CTGTTGGATT TGAGGCGCTT AGCGCCTTCT TCGTCCGGGT GCAGCACATT CTTGATTG	
	CTCATGCCTT TGTGGTTGTA AATGTGCCTG GAATCCTAGC CTTTCATGGT AAACCATATG TATATGTATC TTTTTCAC.	
	CATTTGAGCC CAGCTTTATA CAATTACACT CAAAAGAAAA AAAGTAACCT TCACTTGAGA GAATCTCAAT ACTGCACA	AA
40	TATTGTGCAG CTAAAGCCCT ATGTAATCAC ATAGAAGTCA TTCACCTAGG CATTAGCAAA ATCTCAGAAG GTGCCAAA	GC
	CCCCTTTTTT AGTTTTTGTG TAGGTACAGA ACTGCCGTCT TCAAGGAGTT TCAACTTGAA AACAAATAGC CACCCTCA	AA
	ACATTCAAAA ACACTTAAAC TGCGTGCATA ATGTGTGTGA GACATGGTGT TAGGCTTTGG GAGAACAGAG ACACGGAA	
	TGATTCCTCT TCTTCCCCAC AAGCTTATAG AGAGACTTCA TTAAGTTGAA AGTCAACATT CCCACCTAGC TTTGCACT	
	AAACGACATA TICAAAAAAG CCCAAACTIC CICTAGTITT CTICATCTGA GTAAATGGTT TCACAAACTG AAACCTTG	
45		
43	TCCTCTCTGT CTCACACACC CGATCAGTAA GTTCTATTGT TTCTGATTCC AAACTATGTC TTGAATCAAT CCGTTTAT	
	CCATCCTCAT TGCTACCACT CTGATTCCAA ACCCTTATCA CCTCTCACTT GGAGTATTAA TAGTTTCCTT GTTTCTAC	
	ATAATTCATT ATTCCAAAAA AGTTAAGAGG GGAAAAACAT AGATCTCGTC ATTTCCCTTT TTAAACCACT TTACCTTC	AA.
	GGTTCCAGGT GATCTAAGCC TTGCCCTTCT CTCATACCTA GTTAATTAAC TACACTCTGT TCATGAATAC ATTAGGCT	CA
	CCTACCTCAA GATCTTTTTG CTCAGCCTGA TITGTTCTCT CAGCCTTTTG CATATTTCAT GTTTATGTCT TGGCCCAA	AΤ
50	GTCACTTCCT TAGAGGGGCT TTTTCAGAGC CTTCAATCTT AGGCAGTTCC CCCAAACGCA GTCTTACACT TGTATCAC	
- •	TGGCCTGTTC AGTTTTCTAA AAAGCACATT ACCATTAAAA GAAATGCTCT TGTTTGCTTT GTATATTTTC CACTTCTA	
	CATTATGTTG CAAAGTTCAT AAAGGCAGGA TGTTGATTTT CTTCACAGGG TTACCCTCAG CACCTAGAAC AGTGCCTG	
	ACATAGTAAG CATICATTAA AGGGCTAAAA ATATTICATG TTITAAAAAT ACTTGGGAGT CTAATTAGAC AATACTIT	
	TTCAGCTTAA TGGTAGTATT TTAGCTTCAC TATTTTAACA AATGAAAAAT TTGCAATAAA TCTACAATGC CATTACCC	
55	CAAAATCTTT TTCATGTTTT GCATTTTACG TATTATTTTC CAGGCCTTAC CTGCATGTCT GCATAATCAT AACTGACT	
	TTTTGGAACA GCTGGTAATT ATTTGAGCTT TACTGAAATT TTTTCATGAG GCCAATTCTA CCCTACTGAA CTCAAATT	
	AGITAATGAT GACCTCATTT TGATTGCTGC TGTAAAAAAT AAGATTTCGG AAGAGGAATG AATTCTTGTA TTACTGTG	GT
	AGGACTATGG GTTTTTTTT GTTTGTTTGT TTGTTTTGAG ACGGAGTCTC ACCCTGTCAC CCAGGCTGGA GTGCAGTG	GT
	GCGATCTCAG CTCACAGCAG CCAGGTTCAA GTGATTCTCC TTCCTCAGCC TCCCGAGTAG CTGAGATTAC AGGCACGT	
60	CACCATGCCC GGCTAATTIT TIGTATCTIT AGIAGAGATG GTTTCACCAT GTTGGCCAGG CTGGTCTCGA ACTCCTGA	
00	TCGTGATCCG CCTCCCAAAG TGCTGGGACT ACAGGCGTGA GCCACCGTGC CCGGCCGGGT TATTCATT	
	TCTTATTAAC ATTCTTTGAT GATTCTTATG GTGTTGTTAC AGTAAAACAT TTCTAACAAT TATTCTAACA ATTATTCT	
	ATGGTGTATA TGAAGAATTT ATTGTCGTGT ATTTGTAAGC TGCTATGTGC AGAAGAATTT CAGTCAAATA AAGTTGGTA	A.A.
	GATAGGTATG TAAGTAATAT GAAAAAAGAT AGAAGGTGAT GAGTGACTTA GGTATAAATT AAGTACAATA GAAATGTTG	
65	GGAAAGAAA ATTTCTTGTA ATAGAAATCG GAAGTACAAA CTGGGCATGG TGGTGTGCAT CTCTAATCCC AGCTCCTTG	GΑ
	GAGGCTGGTA TGGGAGGATC ACTTTAGCCC AGGAGCTTGA GGCTGCAGTG AGGTGTGATC ATGTCACCGC ACTCCATC	CT
	GGGTGACAGC AAGACCGTCT CTCTTTTTT TTTTTTTGA GACGGAGTCT CGCCTATGCT GGAGTGCAAT GGCGCGAT	
	TGGCTCACTG CAACCTCTGC CTCCCAGTTT CAAGTGATTC TCCTGCCTCA GCCTCCTGAG CAGCTGGGAT TACAGGTG	
	CGCCACCATG CCCAGCTAAT TATTTTGTAT TTTAAGTAGA GACGGGTTCT CACCATACTG GCCAGGCTGG TCTTCAAC	
70	TOLOGOTT CTTCCCCOT CTTCCCTCCC ALLCCTCCC CACCATACTC CCCACCTC CTTCCCC	10
70	CTGACCTCTT GTTCGCCCAT CTAGGTCTCC CAAAGTGCTG GGATTACAGG TGTGAGCCAC CCCACTTGGC CCCGAGCGA	ΑG
	ACCOTOTO TANAAAAAA TAAATAAATA AATCATAAAC CTGTGGATTA TTGTAGCATT GTTTCTCATC TGTCAAAA	ΑT
	ATTICATGAC TATGCATAGT TTGAAAAGGC AAGITTGTCC CTGGGCAATT TTCAAAATAT TTCTTTAATG TGTTTTCAG	CA
	ATACTGTTTA CCTAATAAAT CITAAGTTTT TAAAAGCAAA ATTAAGCCAG TAATTTGAGT CCAATTCCAA TCTCTTATC	GA
	GTCATTGCTT AAATTTCAAA AGGGTTTTAT TTTTTTTTTA GGTTTGTTCT GAGTAATGAA TACCCTATTA CTATGATA	
75	AGTATCTICC TTAATTATCC TACTCATTGT CTCAACATTC TGACAGTTGG ATTGAGCATA TTCGTAAGTA AAATTGTT	
-		

. 1

```
AACTGTATGA TGTACTTTGA TGTTAAGGTC CGAGTCCCCA CATACCTCGG TAGATGTGTT CTTACAGTTT TGTATTCCCT TGAAATGTAA CTGTTCTCTA TGTTACAGCC TTTATAACCT TCAGTTACTT GAAATGAACA AATTCATTCA AATTCCAGCA
                  TGAAATGTAA CTGTTCTCTA TGTTACAGCC TTTATAACCT TCAGTTACTT GAAATGAACA AATTCATTCA AATTCCAGCA
CTTAAAAGTT TTAAAATTACA TTTTGGATAA ATACCAAAGT GTTTTGTTA TGAATAATGT ATAAACAAAT TGTAAATATT

AAACGTTAGT TGTTACGACT AGACCTATAT AAAACATGAT ATGCAGTCTA CTGAATAGCT ATCAGCCTCT AACATGTTTA
GTGTCATTTA GAAAATGCTT TCTAAATTGC CAAAAGCTGA TGTCTAGGT GATAACAAAT TTACCATTTG GAGGAAGTTG
ACTTCTCAT TTTCATGTCT TCATCAGTCT TACTTGATGA GATCATTCT TCTAGTCAGA AGAGAGTTTA GACTGCTCAG
TTTACTCATA TTTTGAGTTA GCTTTCTAT TTAGAGTTCA CTTGGTTGTG GAATATTCAT TTATAATTTG AATCTACGTT
GTGTAATGGG ACCTAATTTT TTTTTCCTTT GTTTTTGTTG GAGTCTCGC CTCAGTCTCC CAAGTAGCTG GGATTACAGG
CATGCTTCAC CACGCCTGGC TAATTTTTTGT ATTTTTAGTA GAGATGGGGT TTCACCACGCT TGGCCAGGCT GGTCTCAAAA
CTCCTGAGGT CAAGTGATCC TCCTGCCTTG GCCTCCAAAAA GTGCTGGGAT TACAGGCGA GCCGCTGAG CCTGGCCCCA
GGTTTGTTT TGTTTTTTTT TCAAGACAAG ATCTCACTCT ATTGCCCAGG CTGGGAGGCA GTAGTCGAT CATAGCTCAC
                  CTCCTGAGCT CAAGTGATCC TCCTGCCTIG GCCTCCATAA GTGCTGGAT TACAGCCTIG AGCCGCTGAG CCTGGCCCCA
GAGTTTGTTT TGTTTTGTTT TCAAGACAAG ATCTCACTCT ATTGCCCAGC CTGGAGAGCA GTAGTGCGAT CATAGCTCAC
GCAGCCTGA ACTCCTGGGT TCAAGCTATT CTCCTGCCTC CATCTTCTAA AGTGCTGTGA TTACAGGTCT GAGCCATGAT
GCTTGGCCTG TGTTTTTGTT TGTTTGTTTTT GGGGGACAGG GTCTTGCTTT GTCACCAAAA CTGGAGTGTA GTGGTGCGAA
CATAGCTAGC TCACTGCAGC CTCCATCTCC CACGCTCAAG CAATCCTCTC ACCTCAGCCT TCCAAGTAGC TGAGACCGCA
GGTGGTGTT ACCATGCAGC CTCCATCTCC CACGCTCAAG CAATCCTCTC ACCTCAGCCT AGGTCTTGTC ATGTTTCCCA
GGTGGTCTTT AACTCCTGGG CTCAGACAGT CCTCCCGCCT CAGCCACCCA AAGTGTTGGG ATTACAGGCG TGAGCCACCA
TGCGTGGCAT AATTTTTTTT AAGTAAAATA TTTTTTTTATC TTGAGTATAG AAGTGTTCAT TGTCATTCT GGAAAAATAG
AAACATATAG AAAACAGAA AAGATTACAA AACATCTAAT CTGAAAAATGGT TAAGATTTTA ATGGTGGTATA ATTTTTGGAAA
                   TTTCCGTATA TTCCTGCCAG CCTATCCATC ATTCTTCGTA CATGTTTATC TACATTAAAA TTGGTGTTAT ATTTTGGAAA CTTTTTGTT AACTACATTG TGAACATTT TCATGTTTTA AAATGTCATT TTAATGATGG CAGATCCTAT TCAATAGATG TACACACACC TATTTAACTG GTCCACAATT GTTGGATATG TAGGTCGTTT CCTTTCTCTC TTTTTTTTT TTTTTGGCTA
                   CTACTTAATA GTTTCTCTGT ATAGAATGTG GTATTTTGAA AGTGTATCAA GCTTTAGATT GGTAGTATTC TTGCATTTAA TAAAGGGCAG TGGCCTTTGT TGACTGACAT GACAATATTT TTATAAAATT TGTTATTTGC TTTACAGAAA TTTTGAAAAAT
                   TATTGTAGAA ATGTTTTTAC CTCATATGAA CCACCTGACA TTGGAACAGA CTTTCTTTTC ACAAGTGTTA CCAAAGGTAT
                    AATACTATTA CCTGAAAATA CATGTTATAA GGAATCTAGC CTCAGTCTTA GATGATTTAT TATTAATTAT GGCTCTCTTT
                  AATACTATTA CCTGAAAATA CATGTTATAA GGATCTAGC CTCAGTCTTA GATGATTTAT TATTAATTAT GGCTCTTT
TTCTAATATA TCAAAATATAT TCAAAATAAA AATAAGGAGT AAGTAGATCT CATGTGAGAC TATAATGGTG TTAGTGTGAT
CATTAGGCAG TTAAAAACTG TTACAGGCTG GGCACGGTGG CTCATGCCTG TAATCCCAGC TCTCTGAGAG GCTGAGGTGG
GCAGATCATC TGAGGTCAGG AGTTCGAGAC CACCCATGGT CAACATGATG AAACCTCGTC TCTACTAAAA GTACAAAAAA
TTAGCTGGAC ATGGTGGCAG GTGCCTGTAA TCCCAGCTAC TTGGGAGACT GAGACAGGAG AATTGCTTGA GCCTGGGAGG
CGGAGGTTGC ATTGAGTCAA GATCGTGCCA TTGCACTCCA GCCTGGGCAA TAAGAGCGAT GCTCCGTCTC AAAAAAAAA
AAAAAAAAAA AAGAAACTTAT ATTTTCAGAT TGTGTGGTTC CTTTACTAAC TGAATTTAAA TTATTTGTAG TCAATTTTAA
ATGCTCTTGT ATTTTAAAGC CACTGTACTC CAGCCTGAGGT GACAGAGTGA AACCCTTAAT TCAAAAAAAAA
AAAAAAAAAA
AAGAAAAGCT GGAATATTGG CAAAATCAAG TAACTAAAGAA AAAACATTAAA ATTCACAGAA TACATTATTA CATTTTTAGAT
                    AAGAAAAGCT GGAATATTGG CAAAATCAAG TAACTAAGAG AAAACATTAA ATTCACAGAA TACATTATTA CATTTTAGAT
                   ATATATGGTA TATGTTTTCT CTGAAAAGCA CAAGCATACC TITTTGTT TAAATGGAGG GAACTAAAGA TACTTTGGTG CCAAAATGAA ACATTATTTG TAATTGAAA TGGGTTTCTA ACTTTAGCTT TGAATCGTAA TCTTTCAAAT TTCTTGTACT CATAGTCACT TGATGATTCT CTATCTGAAA TATTTCTTAG AATTTGTTCT TGACCACCAG AAAAAGATTC AACTGTTACA TAGATGAAAA TGGATGTTAA TGGTTTAACAG GCCTATGGGA AACAGTATT TCTTTAGCTA CATTGTTTG
                   TTGACTGTGT TGCTATTCTT ATAATGTTTA GGTCATTTAA ATTGTTAGAA AGATCCAAGT ATTAAGATCT AGGGTGGCTA ACTTTTCACA GACAAAAAGC TTGTTTGTAA GGTCATTTAC TATACCCTTA ATTCAGGAAG GTTAGCTTGA ATTGGGTCAA
                   AAGGAAACTG GTTAGAAAAT AAGTGAGTAG TGAATAGGCG ATTCAGTGCA AATTCCTTCC AGAAAATACC CTTGTAAATG ACTGTATGAA TGTGGATTCT TCAAGACAGT CAAATTTATT GTGCGAAAGT AATACTTTTA TTTTTTTGCAT CTCTAAAACA
                   TGAACTITGA GTGATITTTT AAAAAAATTG ATGCTATTAA ATAGATTCAA ACCATAGAAA TGGAAAATAA ATTTCTGTTT GGGGCCTTTTG GGGGGATTAT GTTGTAAAAA TACCTTTTCT CTGTATTTTG TGCTTAATTA GGTACAATTG TTAAGCTAGA TGATAGCCTG TGGATGTTAC TAGTGCAAAA TCAAATTATC GTATTGTGTT TTCTCTGTAA AGTTTTGTCT TGTCTTTTCT
                    AGTGATTTCT CTTATTCCTG TTTATTACTT GATTTGTTTT TACAGACTGT GAAATTATTC GATGACATGA TGTATGAATT
                    AACCAGTCAA GCCAGAGGAC TGTCAAGCCA AAATTTGGAA ATCCAGACCA CTCTAAGGAA TATTTTACAA GTAAGTCAAA
                    TGTATTAGAA AGCAGGAGAG AGAGGGAGCT TAAAGAATGT CAAAATTTTT ATACTGATAC TGATTAGCTA TGTATTCTTA
                    TGTAATGGCC TAATGTTGGA ATTAAATTTA TAGAATTAAA GACGTGAATA TAGAAACATG AATTCTGAAT AATAAACTCT
                TGCCAGAGGT AGCCTTGAGG CACAAAAGCT TGCCTAGAAT TTATGGGTCA CAGACAGTTT TAATATTGCT ATTTGTTGGG
CGAATGAAAA TCACTAGTTA ATTAATACCT CTCTTTGCTG ATAGGATGCT AAAAATGTCA CGCACCTGGC CTAATGTTAC
CCTTTTTAG TTCTGTATTT GCAAGATCAT GGAAGTCAGA AATAATATT TATACATGCT TGCATCTCTT GAAGCACACT
ATATTTAATG GATGTTCACT AAACAATGAA TGAATATATGG ATTCAGTAAA TTTATGATCA CTAATAGTAT GAATTAAAGT
AAATTTGGCT CTTGAGCTTT GATTTGTTTT TTCTCTCATT TTTATTTATC CGTAATCAGA ATAGGGAGC CTAATTACT
GGGTGTTTAC ACCTAGTTC AGACCTCC CAGGCTCTTT TCAAGGAGGC CTATTCTCTT CAAAAGCAGT TAATGGAACT
GCTGGACATG GTTTGCATGG ACCCTTTAGT AGATGACAAT GATGATATTT TGAATATGGT AATAGGTGAG TGAAGAAAAC
TTTCTGCTTA GTATATGGTG ACCATTAAATC ATGTATCAAT TAAAATTGT CATGTTATTT TCTTACTAAT
TATGCATTAA AATTGATTTA AATCTTACCA AATAAATTT TAATCTTGAA ATTTGGATTT TGTAAAATTT
CCTTAACCTA GATTTGCGTA TTTAGTTACT GTAATTCTC CACAATGATT AACTTATATA ACTTTATAAT
CCTTAACCTA GATTGCGTA TTTAGTTACT GTAATTCTC CACAATGATT TTGAGAATTA ACTTTATAATT CCTTCCAGGAA
TACATATAAA TACGTGCATA TGTGTATGTA AATAGGTCA TTTTTTTACTAAT TTTTTTAGATTA CATATTATAA TGAAATAACT CATTTTACAT
GTGCATGCAC TTAACTAGT TTATTTTAT TTTTTTTAT TTTTTTTGGA CAGAGGCC CTCCCCCCC CAGGCTGGAG
TGCAGTGCAC TTAACTAGT TTATTTTAT TTTTTTTAT TTTTTTTAGT AGAGACAGG TTTCACCGCC CAGGCTGGAG
TGCAGTGCAC CAATCTCGGC TCACTGCACC CCACACCTGC CTAATTTTTA AGAGACAGG TTTCACCGTC ATGAGTAGCT
GGGATTATAG GCGTCCGCCA CCACACCTGG CTAATTTTTG TATTTTAGT AGAGACAGG TTTCACCGTC ATGAGTAGCT
TGGGCTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCTCCAAA GTGCTGGGGA TACAGGCATG AGCCACCGTG
TGGGTTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCTCAAA GTGCTGGGGA TACAGGCATG AGCCACCGTG
TGGGTTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCTCAAA GTGCTGGGGA TACAGGCATG AGCCACCGTG
TGGGTTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCTCAAA GTGCTGGGGA TACAGGCATG AGCCACCGTG
TGGGTTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCCCAAA GTGCTGGGGA TACAGGGAT TACAGGCATG AGCCACCGTG
TGGGTTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCCCAAA GTGCTGGGGA TACAGGGAT TACAGGCATG AGCCACCGTG
```

	CCCAGCCAAT	ACTAGTTTAT	TTTTAAAGAA	TTGCTGGTCG	TAACACACTT	CATTGATTTT	ATCACTCATT	AATGGATTAT
							AGAGTAAGTT	
							TATTTATTCA	
5							GCTCACCCAT	
							CATCCAGCAG	
							TCGCTGTGTG	
							TTAGCCCAGA	
							ACTGAGTAAA	
							TTTTGTCATT	
10							TTAGTTTTAT	
10							ACACTTAAAT	
							AATTGTTCAG	
	TAATTATAGG	AGAAACTCAC	CCCCATGACA	TTTGGATGT	1177711C771	TOTATION	CTTTGCAGTT	ATTCATTCTT
							AGTTTATAAT	
15							TGATTCTTTA	
13							ACATGTAGCT	
							GTACTTCAGA	
							AGTATCCTAT	
20							TGTTCACACT	
20							CTGTAGCATT	
							ACATACATAA	
							TCAGTGGTTA	
							CTTGGGCTAT	
25							GTTATAGTGA	
25							ACATCACTAT	
							AAAAGTAAAT	
							TGCTGCCTCC	
30							AGTCTTTTCG	
							TTTCAGTTCT	
							TCCTTACCCT	
							TTAATTAT	
							CATTTGTTTG	
							GAAAAAATTA	
25							ATGATGCTTT	
35							GTGGTGATTG	
							CAAAGATATA	
							AGTCAGATGC	
40							TTTGAATGTC	
							TATATCCCAT	
							CCCTCTTTGC	
							TTTTGTTCAT	
							GGGATACAAG	
	CATGTATATG	TATGTATCAG	TCTTTTAAAT	TTGATATAGT	CATACATTTG	TTTTATTTT	GAAAAGTTAG	AGTGTTGAAT
4.5	TGGTATCCCA	TTTATGAAAC	ATTATATTCT	AAAAATTTGT	AGTACGATTA	TTGGGAATTA	TAACTCATTT	TCCTGTAACA
45	CTGTTATACA	TAGTACCTTT	TGCTTTCAGA	CTAGCCCTCA	ATTTTATTTA	ACTATAGTAG	TCCTAAATTA	TAAGATTAAT
	AGTACTCAGG	ACCTAACAGT	TATATGTCAT	TTGTTTTTT	TTTTTTTGAG	ATGGCGTCTC	ACTCTGTCAC	CCAAGCTGGA
	GTGCAGTGGT	ATGACCTTGG	CTCACTGCAG	CCTCTGCCTC	ACGGGTTCAA	GGGATCGTTC	TGCCTTAGCC	TCCTGAGTAG
							GCCATGTTGG	
							GGTGTGAGCC	
50	GCCTATATGT	AATAATTTA	ATGGGACCAT	GAATTGAATA	TTTCTTCCTT	GAATAGCAAT	GACATAGCCC	CTTCTATTGT
	ACATCTGCAA	GCTGATACAG	GGAATTCCTT	TGTACCTGCG	CTCTTCCCTG	CCAGTCAGCT .	ATGGGGGTGA	AAGTGTAGGG
							ACCCTAGGGG .	
							CAACTITTTC	
	TCTTCTTTAT	CTCACCTGCC	CCTCCCCTTG	TATCCCTTCT	TCCTTTTTCC	CTTTCCTTTT	TTGTCCTCAC	TTCATTCGTG
55	CATCCTTTCT	GATTCCTCTT .	ACCTTGCTAA	AAGGAGAAGT	TTGTTTGGGT	ATCCTATATC	AATGGCAGGA	AGGTTGTTTT
							TCCTTCTTGC	
	ACCACAGAGT	TTGCAGCTAG	TACTTGGAGA	GGAAAATTAA	ACAGAGATAC	TTGGACCAAG	AGTAAGATGA	AGAAAGTCTA
60	AACAACAGTA	TAGTCTATAG	TGGCAAGAGA	GAGTATGGGG	GCTGCTTAGC	CAGGGTGGCT	GTACATAAAG	TATATCTTCA
	GTTTATATAA	ACTGCTTATA	GATGGAAATC	AGAAAATTTA	AATTCTCTTA	ACTGTCCAAG	AAAATTCTCA	TTTTTTCAAA
	TTTGGGACTG	ATAAATGTGA	CCAGTTCTGC	TTACTGTCCA	TTGCCTGAAA	TGGAGCTTTG	AGGTGGACTG	TATAATTTCT
	TCAATCTTAA	CTCCAAATTC	TGATCAGCGA	CGCCCTCTGC	TGTTCACTAT	TATTTATAT	TTACCAATCA	AAGTAAAGTA
	TTGAAGTTTT	CCTGGCAGTT	TTCACTTTGT	GTTTTAGTCC .	ATTTAGGCTG (CTATAACAAA	ATCCCTTAAA	CTGGGTAAGG
65	GATTATAAAT	ATTAGAAATT	TATCTCTCAC	AGTTCTGGAA	GCTGGGAAGC	CCAATATCAA	GGCACCAGTA	GATTTGGTGT
	CTAACGAGGG	TGTGCCGTCT	GCTTCAAAAA	TGGCCCCTTG	TTGCTGCATC	CTCACTTAGT (GCAAGGGGCA	AGACAGCTCC
	CTTCAACCTC	TTTTATAAGG	GCACTTATGT	CATTCATGAG	GGCAGAGCCC	TCATGACTTA	ATCACTTCCC	CAAAGGCCCC
	ACCTCTTAAT	AGTATCACAT	TGGGTGTTAG	GTGTCTGGGA	GGACACCAAT	CTTCAAGCCA	TATCATCTCA	CTTGGAAAAA
	AGTCAAAATA	AAACCAGTAG	ATTTAATTAA	TATTACACTA	TTTATAGAAG	CATGTGATGT	ATCATTCCTT	GTATTAATTT
70	CCTGGGGTTG	CCGTAACAAG	TTACCACAAA	CTAGGTGGCT	TAAAACAATA	GAATTTTATT	CTCTCACATT	TCTAGAGGCA
	GAAGTTCACA	GTGTGTCAAT	AGGGCCATGT	TCTCTGGAAG	GCTTTAGGGG	AGAATATATT	TCATATCTTT	CTCTTAGCTT
	CTCGGTGTCA	CTGGCAATCC	TTAGCTTACT	TTGGCTTTCT	GTGTCTTCAC	ATCATCTTTT 7	TATAAGAACA	CCAGTGATAG
	TGATTAAGGG	CATACCTTAC	TTTAATATGA	CCTCATCTTA	ACTAATTATG	TCTTCAATAA	CCCTATTTCC .	AAATAAGGCC
	ACATTCTGAA	GTATTGGGAG	TTAGAACTTA	AAGCTTTTTG	GGAGGGACAC	AGTTCAACCC	ATAACAACCC	CTAAAATCGA
	TATTTATTCT (CAATTAAGTC	TTGAAATTGG	TTTCAAAAAG	AGAATATTCT	ATTAGAGTTT	TTAATGTATA	GTTTTAACAT
_	ATAGTTCTTT	AGCCCCCAAT	TTTTTTTTT	TTTTTTTTT	TITITITITIT :	TTTTGAGAC	GGAGTCTCGC	TCTGTCGCCC
75							TTCACGCCAT	
		-						

CAGCCTCCCG AGTAGCTGGG ACTACAGGCG CCTGCCACCG CGCCCGGCTA ATTTTTTTGT ATTTTTAGTA GAGACGGGGT TTCACCTTGT TAGCCAGGAT GGTCTCGATC TCCTGACCTC ATGATCCACC CGCCTCGGCC TCCCAAAGTG CTGGGATTAC AGGCGTGAGC CACCGCGCCC GGCTGCCCC CAATTATTTA TATAATGCTT TAGAAATTT GTATTATTCA GAAAATAAAC
ATATACTATT GTATCGTTG CCTACACTTA GATTTTATTG CCTGCTATAT TAAAATTTA TAGATTTTT AATTGTTTTA AATTGTTTTA TTAAAGAAAG AATGTGCCTG TAATCTCAGC ACTITTGAGA GGCCAAGGCA GAAGGATTGC TTGAGCCCAG GAGTTTGAGA CCAGACTGAG CAACACAGGG AGACCCCCAT CTCTACAAAA AATAAAAAAA TTCTCCAGGC CTCATGGCAC ATACCTGTAG TTCTAGTTAC TTGGGAGACT GGGGTGGGAG GATGCATTGA GCCCAGGAGA TTGAGGCTGC AGTGAGCCAT GATCAGGCCA CTGTACTCCA GCTTGGACAA CAGAGTGAGA GCTTGTCTAG ATAGATAGAT AGATAGATAA TCTAAATAGA TAATAGACAG ATTATCTAAA TAGATAATAG ACAGATTATC TAAATAGATA ATAGACAGAT TATCTAAATA GATAATAGAC AGATTATCTA AATAGATAAT AGACAGATTA TCTAAATAGA TAATAGACAG ATTATCTATC TAAATAGATA ATAGATTATC TAAATAGATA TTGTTGGCAT TAAGATGCAA ACTITGTTTT AAACAGITGA GTAAATCAAA GATGGGACTG TTAAGTTATT TGTGTTATTT ACCTGCTTTT TGAAAATGTA AAAATAAAAC TCTAGGTTTA ATTAGTAGTA TGCTATTTAG TAATGAAGTA AAGCTAGAGG ACCIGCTITI IGAAATGIA AAAGTAAAC ICIAGGITTA ATTAGTAAGTA IGCIATTAG IAAIGAAGTA AAGCTAGAGG
CTTCGAACAA ATCTTGTGTA ATTTCCTCTT GAATGAGAGA GAAAATTTAA AGTAAGCAAA CAAATAAGTT GTGTGTCACC
ACTCATTCAG TCATTTAACA AGTATTCCA GAGTACTTAT TCTGTGCCAG GAAATGTTGT AGGTGCCCTC AACAACTTAG
AGTCTAGCCT GAGACACAAG TAAGTAGGTA ATTATTATAG AATGGTATGA TCTTTGGAGG ACTGGGTATT GGCTGGCTCA
TGGGGAGTACA AGATAGGTAC CCAGTGATGA AGTCAGGAAA GGTTTCTTAT GGTGATATGA TGACGTCTAT GCTGATTATA AGGTCAGTGT AGAATAAACT TTGTGCTTTT AAATTTGCAT AGCACTGTAT TAGAGAGTTC ATCTTCAAAA TAATCGAAAA GGCTGAGTGT GGTGACCCAT GGCTGTAATC CCAGCACTTT GGGAGGCCGA GGTGGCCAGA TTGCTTGAGC TAGGAGTTCG AGACCAGGCT GGCCAACATG GTGAAACCCC GTCTCTACTA AAAATACAAA AATTAGCCAG GAGTGATGGT GCGCACCTGT AATGCCAGCT ACTTGGGAGG CTGAGGCAGG AGGATCACTT GAACCCAGGA GGTGGAGGTT GAAGTAAGCC GAGGTCATGC CACTGCACTC CAGCCTGGGC AACAGAGTGA GACTCCATCT CAAAAAAAAA AAAAATGATC AAAGAAAGGT GAATTTTCAT CTACCCTATT TCTGCTGAGG AAAATGGACT ATTTTCAAAT ATTTTTAATA AGGGTCAAAA TGAGGGATC-3' (FRAG,NO:)(SEQ ID 5'-CCTGAGACAG AGGCAGCAGT GATACCCACC TGAGAGATCC TGTGTTTGAA CAACTGCTTC CCAAAACGGA AAGTATTTCA AGCCTAAACC TTTGGGTGAA AAGAACTCTT GAAGTCATGA TTGCTTCACA GTTTCTCTCA GCTCTCACTT TGGTGCTTCT AGCCIAAACC TITIGGIGAA AAGAACICII GAAGICAIGA HIGHICACA GITICICICA GCICICACII IGGIGATICI CATTAAAGAG AGTGGAGCCT GGTCTTACAA CACCTCCACG GAAGCTATGA CTTATGATGA GGCCAGTGCT TATTGTCAGC AAAGGTACAC ACACCTGGTT GCAATTCAAA ACAAAGAAGA GATTGAGTAC CTAAACTCCA TATTGAGCTA TICACCAAGT TATTACTGGA TTGGAATCAG AAAAGTCAAC AATGTGTGGG TCTGGGTAGG AACCCAGAAA CCTCTGACAG AAGAAGCCAA GAACTGGGCT CCAGGTGAAC CCAACAATAG GCAAAAAGAT GAGGACTGCG TGGAGATCTA CATCAAGAGA GAAAAAGATG AGAGCCTTCA GTGTACCTCA TCTGGGAATT GGGACAACGA GAAGCCAACG TGTAAAGCTG TGACATGCAG GGCCGTCCGC CAGCCTCAGA ATGGCTCTGT GAGGTGCAGC CATTCCCCTG CTGGAGAGTT CACCTTCAAA TCATCCTGCA ACTTCACCTG TGAGGAAGGC TTCATGTTGC AGGGACCAGC CCAGGTTGAA TGCACCACTC AAGGGCAGTG GACACAGCAA ATCCCAGTTT GTGAAGCTTT CCAGTGCACA GCCTTGTCCA ACCCCGAGCG AGGCTACATG AATTGTCTTC CTAGTGCTTC TGGCAGTTTC CGTTATGGGT CCAGCTGTGA GTTCTCCTGT GAGCAGGGTT TTGTGTTGAA GGGATCCAAA AGGCTCCAAT GTGGCCCCAC AGGGGAGTGG GACAACGAGA AGCCCACATG TGAAGCTGTG AGATGCGATG CTGTCCACCA GCCCCCGAAG GGTTTGGTGA GGTGTGCTCA TTCCCCTATT GGAGAATTCA CCTACAAGTC CTCTTGTGCC TTCAGCTGTG AGGAGGGATT TGAATTATAT GGATCAACTC AACTTGAGTG CACATCTCAG GGACAATGGA CAGAAGAGGT TCCTTCCTGC CAAGTGGTAA AATGTTCAAG
CCTGGCAGTT CCGGGAAAGA TCAACATGAG CTGCAGTGG GAGCCCGTGT TTGGCACTGT GTGCAAGTTC GCCTGTCCTG
AAGGATGGAC GCTCAATGGC TCTGCAGCTC GGACATGTGG AGCCACAGGA CACTGGTCTG GCCTGCTACC TACCTGTGAA
GCTCCCACTG AGTCCAACAT TCCCTTGGTA GCTGGACTTT CTGCTGCTGG ACTCTCCCTC CTGACATTAG CACCATTTCT GCTACCAAAA CCCAACACA TACCTIGGIA GCTGGACTIT CTGCTGCG ACTCTCCCA CAGCCTTGAA TCAGACGGAA GCTACCAAAA GCCTTCTTAC ATCCTTTAG TTCAAAAGAA TCAGAAACAG GTGCATCTGG GGAACTAGAG GGATACCACAAAA GCCTTCTTAC ATCCTCCTGG GTCCTCTGGCC CTTCTTGCCT ACTATGCCAG ATGCCTTTAT GGCTGAAACC GCAACACCCA TCACCACTTC AATAGATCAA AGTCCAGCAG GCAAGACGG CCTTCAACTG AAAAGACTCA GTGTTCCCTT TCCTACTCTC AGGATCAAGA AAGTGTTGGC TAATGAAGGG AAAGGGTAATT TTCTTCCAAG CAAAGGGTGAA GAGACCAAGA CTCTGAAATC TCAGAATTCC TTTTCTAACT CTCCCTTGCT CGCTGTAAAA TCTTGGCACA GAAACACAAT ATTTTGTGGC TTTCCTTTCTT TTGCCCTTCA CAGTGTTTCG ACAGCTGATT ACACAGTTGC TGTCATAAGA ATGAATAATA ATTATCCAGA GTITAGAGGA AAAAAATGAC TAAAAATATT ATAACITAAA AAAATGACAG ATGITGAATG CCCACAGGCA AATGCATGGA GGGTIGTTAA TGGTGCAAAT CCTACTGAT GCTCTGTGGG AGGGTTACTA TGCACAATT AATCACTTC ATCCCTATGG GATTCAGTGC TTCTTAAAGA GTTCTTAAAGA ATTGCTGCG AGGGTTACTA TTTTACTTGC ATTGAATAT AATCACTTCT CCATACTTCT TCATTCAATA CAAGTGTGGT AGGGACTTAA AAAACTTGTA AATGCTGTCA ACTATGATAT GGTAAAAGT ACTTATTCTA GATTACCCCC TCATTGTTTA TTAACAAATT ATGTTACATC TGTTTTAAAAT TTATTTCAAA AAGGGAAACT ATTGTCCCCT AGCAAGGCAT GATGTTAACC AGAATAAAGT TCTGAGTGTT TTTACTACAG TTGTTTTTTG AAAACATGGT AGAATTGGAG AGTAAAAACT GAATGGAAGG TTTGTATATT GTCAGATATT TTTTCAGAAA TATGTGGTTT CCACGATGAA AAACTTCCAT . 75 3'(FRAG.NO:)(SEQ ID NO:11848)

5'-CCT TGC CTG CTG G-3' (FRAG. NO: 1739) (SEO ID NO:11121) 5'-GTT GTC CC-3' (FRAG. NO: 1740) (SEQ ID NO:11122) 5-GTT CTC GC-3 (FRAG. NO:1740) (SEQ ID NO:11122)
5-GGC TGG TGG-3' (FRAG. NO:1083) (SEQ ID NO:10457)
5-GGC TGG CTT CTC GTT GTC CC-3' (FRAG. NO:1081) (SEQ ID NO:10458)
5'-CGT TGG CTT CTC GTT GTC CC-3' (FRAG. NO:1081) (SEQ ID NO:10459)
5'-CCC TTC GGG GGC TGG TGG-3' (FRAG. NO:1083) (SEQ ID NO:10460) 5'-GGC CGT CCT TGC CTG CTG G-3' (FRAG. NO:1084) (SEQ ID NO:10462) **Human P Selectin Fragments**

(FRAG. NO: 1741) (SEQ ID NO:11123)

5'-TCC TTT CTT TTC-3' (FRAG. NO: 1742) (SEQ ID NO:11124)]

5'-CTC CTT TT-3' (FRAG. NO:1743) (SEQ ID NO:11125)

5'-TTG CTG TTT TTT CTC CTT CTT CTC TCC TTT CTT TTC-3' (FRAG. NO:1086) (SEQ ID NO:10464)

Human Endothelial Monocyte Activating Factor

Nucleic Acid & Antisense Oligonucleotide Fragments

(FRAG. NO: 1744) (SEQ ID NO:11126)

5'-CC TTT CTT TTC (FRAG. NO: 1745) (SEQ ID NO:11127)

Human IL3 Nucleic Acid and Antisense Oligonucleotide Fragments

5'-G GBG GCB CTC-3' (FRAG. NO: 1748) (SEQ ID NO:11130)

FUNDILISADE CROSS (FRAG. NO: 1749) (SEQ ID NO: 1113)
HUMILSAASI: 5'-CTC TGT CTT GTT CTG GTC CTT CGT GGG GCT CTG-3' (FRAG.NO: 1089)(SEQ ID NO: 10467)
HUMILSAASI: 5'-CTG TGT CGC GTG GTG CGG CCG TGG CC-3' (FRAG. NO: 1090) (SEQ ID NO: 10468) GGC GGB CCB GGB GTT GGB GCB GGB GCB GGB CGG GCB GGC TCB TGT TTG GBT CGG CBG GBG GCB CTC (FRAG. NO:1091) (SEO ID NO:10469)

GBG GTG CC-3' (FRAG. NO: 1751) (SEQ ID NO:11133) 5'-GCC CCG C-3' (FRAG. NO:1752) (SEQ ID NO:11134) 5'-TCTGGGGTGTCCTG (FRAG. NO:1092) (SEQ ID NO:10470)

5'-GCCTTCGTGGTTCC (FRAG. NO:1093) (SEQ ID NO:10471)

5-TCTTCCTTCGTTTGC (FRAG. NO:1094) (SEQ ID NO:10472) 5-CGTCCGCGGGGGCCCCCGGGCCT (FRAG. NO:1095) (SEQ ID NO:10474)

5'-GGC TGC GCT CCT GCC CCG C (FRAG. NO:1096) (SEQ ID NO:10473)

5'-CTCTTTCCCGGGCTCTT (FRAG. NO:1097) (SEQ ID NO:10475)

5'-GCGCTGGGGGGTGCTCC (FRAG. NO:1098) (SEQ ID NO:10476)

5'-CGTGTGTTTGCGCCCTCCTCCTGGTCGC (FRAG. NO:1099) (SEQ ID NO:10477)

5'-GCTTGTCGTTTTGG (FRAG. NO:1100) (SEQ ID NO:10478)

5'-GGCCGGCTTTGCCCGCCTCCC (FRAG. NO:1101) (SEQ ID NO:10479)

5'-GGCGCCTGGCCCGGCC (FRAG. NO:1102) (SEQ ID NO:10480)

5'-TTCCTGGGCTGCGTGCGC (FRAG. NO:1103) (SEQ ID NO:10481) 5'-GTTCTGTTCTTCTTGCTGGC (FRAG. NO:1104) (SEQ ID NO:10482)

5-GCB GGB GBC BGG GCB GGG CGB TCB GGB GCG TGB GCC BBB GGB GGB CCB TCG GGB BCG CBG CTC CGG BBC GCB GGB 5'-CBG BGG TGC C (FRAG. NO:1105) (SEQ ID NO:12488)

Human IL-4 Nucleic Acid and Antisense Oligonucleotide Fragments
5-CTC TGG TTG GCT TCC TTC GCC GGC BCB TGC TBG CBG GBB GBB CBG GGG BBG CBG TTG GGB GGT GBG BCC CBT 5'-CTC TGG TTG GCT TCC TTC GCC GGC BCB TGC 1BG CBG GBB CBG BGG GGG BBG CBG TTG GGB GGT GBG BCC CBT TBB TBG GTG TCG B-3' (FRAG. NO: 1753) (SEQ ID NO:11135)
5'-GCC GGC BCB-3' (FRAG. NO: 1754) (SEQ ID NO:11136)
5'-T TCC TTC-3' (FRAG. NO:1755) (SEQ ID NO:1106) (SEQ ID NO:10484)
5'-CTC TGG TTG GCT TCC TTC-3' (FRAG. NO:1106) (SEQ ID NO:10484)
5'-GCCGGCBCBTGCTBGCBGGBBGBBCBGBGGGGGBBGCCGTTGGGBGGTGBGBCCCBTTBBTBGGTGTCGB-3' (FRAG. NO:1107)

(SEO ID NO:10485)

```
WO 02/085308
                                                                                                                                           PCT/US02/13135
 TTT CCT CTG CTG GGT CCC CCT CCC GTT CCA AGC TGC ACC GCA CAG ACC GGC GCT ACA GGA CAG AGC CAG GCA AGC
 ACC CAT GGG GAT CCA GGC CCA GCT GTT CCB BGC TGC BCC GCB CBG BCC GGC GCT BCB GGB CBG BGC CBG GCB BGC
 BCC CBT GGG GBT CCB GGC CCB GCT G -3'(FRAG. NO: 1756)(SEQ ID NO:11138)
 5'-TCTGCGC-3' (FRAG. NO: 1757) (SEQ ID NO:11139)
5'-CCT GCT CCT GGG G (FRAG. NO:1758) (SEQ ID NO:11140)
 5'-TCTGCGCGCCCCTGCTCC (FRAG. NO:1108) (SEQ ID NO:10486)
 5'-CGCCCGGCTTCTCT (FRAG. NO:1109) (SEQ 1D NO:10487)
5'-CCTGTGGGCTTCGG (FRAG. NO:1110) (SEQ ID NO:10488)
5'-CCCGGGCCTCCGTTGTTCTC (FRAG. NO:1111) (SEQ ID NO:10489)
5-CCCGGGGCTCCGTTGTTCTC (FRAG. NO:1111) (SEQ ID NO:10489)
5-TGCTCGCTGGGCTTG (FRAG. NO:1112) (SEQ ID NO:10490)
5-GGTTTCCTGGGGCCCTGGGTTTC (FRAG. NO:1113) (SEQ ID NO:10491)
5-TCTGCCGGGTCGTTTTC (FRAG. NO:1114) (SEQ ID NO:10492)
5-GGGTGCTGGCTGCG (FRAG. NO:1115) (SEQ ID NO:10493)
5-CTTGGTGCTGGGCTGGGTTGGG (FRAG. NO:1117) (SEQ ID NO:10494)
5-GCGCGCTGCTGGGTTGGGTTGGG (FRAG. NO:1117) (SEQ ID NO:10495)
5-CTTGGCTGGTTCCTGGCCTCCGGG (FRAG. NO:1118) (SEQ ID NO:10496)
5-CCTCCTCCTCCTCCTCGCTCCCTTTTTCTTCCTCT (FRAG. NO:1119) (SE
 5'-CCTCCTCCTCCTCCTCGCTCCCTTTTTCTTCCTCT (FRAG. NO:1119) (SEQ ID NO:10497)
 5'-TCCCTGCTGCTCTC (FRAG. NO:1120) (SEQ ID NO:10498)
 5'-TGCCCTCCCTTCCCTCGG (FRAG. NO:1121) (SEQ ID NO:10499)
 5'-GGTGCCTCCTTGGGCCCTGC (FRAG. NO:1122) (SEQ ID NO:10500)
 5'-GGCTGCTCCTTGCCCC (FRAG. NO:1123) (SEQ ID NO:10501)
 5'-CTCTGGGTCGGGCTGGC (FRAG. NO:1124) (SEQ ID NO:10502)
 5'-GGGGCGTCTCTGTGC (FRAG. NO:1125) (SEQ ID NO:10503)
 5'-CTGGCCTGGGTGCC (FRAG. NO:1126) (SEQ ID NO:10504)
 5'-GCCTCTCCTGGGGGGGGGGCTCCCTGTCC (FRAG. NO:1127) (SEQ ID NO:10505)
5'-GCCTCTCCTGGGGGGGTGGCTCCCTGTCC (FRAG. NO:1127) (SEQ ID NO:10505)
5'-CCTTTTCCCCCGGCTCC (FRAG. NO:1128) (SEQ ID NO:10506)
5'-GTGGGGGCTTTGGC (FRAG. NO:1128) (SEQ ID NO:10507)
5'-GGG GGT CTG TGG CCT GCT CCT GGG G (FRAG. NO:1130) (SEQ ID NO:10508)
5'-AGGGGTCTGGGGCCCTC (FRAG. NO:1131) (SEQ ID NO:10509)
5'-TTTTGGGGGTCTGGCTTG (FRAG. NO:1132) (SEQ ID NO:10510)
5'-GCCTGGCTGCCTTCC (FRAG. NO:1133) (SEQ ID NO:10511)
5'-GGGCCCTGCCGTGGGGC (FRAG. NO:1134) (SEQ ID NO:10512)
5'-TGTCCTCTTGTTGCTCCCCTT (FRAG. NO:1135) (SEQ ID NO:10513)
5'-TGCCTGCTGTCTGGG (FRAG. NO:1136) (SEQ ID NO:10514)
5'-TGCCTGCTGTCTGG (FRAG. NO:1136) (SEQ ID NO:10514)
5'-GGTTCCCGCCTTCCCT (FRAG. NO:1137) (SEQ ID NO:10515)
5-GTT CCC AGA GCT TGC CAC CTG CAG CAG GAC CAG GCA GCT CAC AGG GAA CAG GAG CCC AGA GCA AAG CCA CCC CAT
 TGG GAG ATG CCA AGG CAC CAG GCT G (FRAG. NO:1138) (SEQ ID NO:10516)
 5-GTT CCC BGB GCT TGC CBC CTG CBG CBG GBC CBG GCB GCT CBC BGG GBB CBG GBG CCC BGB GCB BBG CCB CCC CBT
TGG GBG BTG CCB BGG CBC CBG GCT G-3' (FRAG. NO:1139) (SEQ ID NO:10517)
Human IL5 Nucleic Acid and Antisense Oligonucleotide Fragments

5-TCCCTGTTTC CCCCCTTTCG TTCTCCCCT
GTGGGBBTTT CTGTGGGGBT GGCBTBCBCG TBGGCBCTC CBBGBGCTBC CBBCBCTCBBB TGCBGBBGCB TCCTCBTGGC
TCTGBBBCGG TGGGAATTTC TGTGGGGBTG GCATACACGT AGGCAGCTCC AAGAGCTAGC AAACTCAAAT GCAGAAGCATC
CTCATGGCTC TGAAACG-3' (FRAG. NO: 1759) (SEQ ID NO:11141)
5'-GCC CCG GG-3' (FRAG. NO: 1760) (SEQ ID NO:11142)
5'-G GGT TTC T-3' (FRAG. NO: 1761) (SEQ ID NO:11143)
5'-GTG GGG BTG GC-3' (FRAG. NO: 1762) (SEQ ID NO:11144)
5'-CCB BGB GCT BGC-3' (FRAG. NO: 1763) (SEQ ID NO:11145)
5'-TCC CTG TTT CCC CCC TTT-3' (FRAG. NO:1140) (SEQ ID NO:10518)
5'-CGT TCT GCG TTT GCC TTT GGC-3' (FRAG. NO:1141)(SEQ ID NO:10519)
5'-GTT TTT TGT TTG TTT TCT-3' (FRAG. NO:1142)(SEQ ID NO:10520)
5'-CTC TCC GTC TTT CTT CTC C-3' (FRAG. NO:1143) (SEQ ID NO:10521)
5'-CCT CCT GCC TGT GTC CCT GCT CCC C-3' (FRAG. NO:1144) (SEQ ID NO:10522)
5-CT CCT GCG GGT TTC TGG CTT CCT CT-3' (FRAG. NO:1144) (SEQ ID NO:10523)
5'-TGT CTC TCT GTC CTT TTG TT-3' (FRAG. NO:1146) (SEQ ID NO:10524)
5'-TGT TGT GCG GCC TGG TGC CCT GCC CCG GG-3' (FRAG. NO:1147) (SEQ ID NO:10525)
5'-TGT GGG ATT TCT GTG GGG BTG GCA TAC ACG TAG GCA GCT CCA AGA GCT AGC AAA CTC AAA TGC AGA AGC ATC CTC
ATG GCT CTG AAA CG-3' (FRAG. NO: 1764) (SEQ ID NO:11146)
5'-GTG GGB BTT TCT GTG GGG BTG GCB TBC BCG TBG GCB GCT CCB BGB GCT BGC BBB CTC BBB TGC BGB BGC BTC CTC
BTG GCT CTG BBB CG-3' (FRAG. NO:1148) (SEQ ID NO:10526)
5'-CCG TGT C-3' (FRAG. NO: 1766) (SEQ ID NO:11148)
5'-GCCCTGCC-3' (FRAG. NO: 1767) (SEQ ID NO:11149)
5'-CCG TGT CTG TCG TGT CT-3' (FRAG. NO:1149) (SEQ ID NO:10527)
```

20

5'-TTCCTTTGCTCTTG-3' (FRAG. NO:1150) (SEQ ID NO:10528)

5-GTGTGTCTTTGCTGT-3' (FRAG. NO:1151) (SEQ ID NO:10529) 5-GCCCTGCCTCTCTGC-3' (FRAG. NO:1152) (SEQ ID NO:10530)

5-CT CBGTGGCCCC CBBBBGGBTG BGTBBTBCBT GCGCCBCGBT GBTCBTBTCC TTTTTBCTBT GBGG (FRAG. NO: 1768) (SEO

Human IL-6 Receptor Fragments

```
5'-GGGGGTGGCT TCCTGCCGCG TCTCTGGGCC GTCCCGTCCC TCGGCCCGC GCCGCGCTCG GCTCCTCTCC CTCTGGCCCG
 GCTCGGGGCG GGGCGGGCG GTGGGCGGGC GGCGCTGCCC TGCGCGCGGC GCTGGCCCTT GCTGGCCGTC GGCTGCGCGC
GCBCGCCTC TTGCCBCCTC CTGCGCBGGG CBGCGCCTTG GGGCCBGCGC CGCTCCCGGC GCGGCCBGCB GGGCBGCCBG CBGCGCGCBG CCGBCGGCCB GCBTGCTTCC TCCTCGGCTB CCBCTCCBTG GTCCCGCBGB GGCGGBCBGG C-3' (FRAG. NO:
 1769) (SEQ ID NO:11151)
 5'-CCCGGCGC-3' (FRAG. NO:1184) (SEQ ID NO:10562)
 5'-GGCCBGCBGG-3' (FRAG. NO:1186) (SEQ ID NO:10564)
5'-GCBGCCBGCBGCG-3' (FRAG. NO: 1770) (SEQ ID NO:11152)
5'-GCTGGGGCTCCTCGGGGGG-3' (FRAG. NO:1167) (SEQ ID NO:10545)
5'-GGGGGCTCTTCCGG-3' (FRAG. NO:1168) (SEQ ID NO:10546)
5'-GCTGTCTCCCTCCGGG-3' (FRAG. NO:1169) (SEQ ID NO:10547)
5'-GCGGGGGTTTCTGGCC-3' (FRAG. NO:1170) (SEQ ID NO:10548)
AGCGCGCAGC CGACGGCCAG CATGCTTCCT CCTCGGCTAC CACTCCATGG TCCCGCAGAG GCGGACAGGC-3' (FRAG. NO:1185)
(SEQ ID NO:10563)
5'-GCBCGCCTCT TGCCBCCTCC TGCGCBGGGC BGCGCCTTGG GGCCBGCGC GCTCCCGGCG CGGCCBGCBG GGCBGCCBG
CBGCGCGCBG CCGBCGGCCB GCBTGCTTCC TCCTCGGCTB CCBCTCCBTG GTCCCGCBGB GGCGGBCBGG C-3' (FRAG. NO:1187)
Human IL-6 Nucleic Acid and Antisense Oligonucleotide Fragments
NO:1772) (SEQ ID NO:11154)
5'-GGGGCBGG-3' (FRAG. NO:1773) (SEQ ID NO:11155)
5'-GGGCCBGG-3' (FRAG. NO:1773) (SEQ ID NO:11155)
5'-GBBGCCBG CBGGC-3' (FRAG. NO:1774) (SEQ ID NO:11156)
5'-CCBGGBGCBG CCCC-3' (FRAG. NO:1775) (SEQ ID NO:11157)
5'-BGGG BGBBGGCBBC-3' (FRAG. NO:1776) (SEQ ID NO:11158)
5'-GCT TCT CTT TCG TTC CCG GTG GGC TCG-3' (FRAG. NO:1188) (SEQ ID NO:10566)
5'-GTG GCT GTC TGT GTG GGG CGG CT-3' (FRAG. NO:1189) (SEQ ID NO:10567)
5'-GTG CCT CTT TGC TGC TTT C-3' (FRAG. NO:1190) (SEQ ID NO:10568)
5'-GAT TCT TTG CCT TTT TCT GC-3' (FRAG. NO:1191) (SEQ ID NO:10569)
```

5'-CTCCTGGGGG TBCTGGGGCB GGGBBGGCBG CBGGCBBCBC CBGGBGCBGC CCCBGGGBGB BGGCBBCTGG BCCGBBGGCG CTTGTGGBGB BGGBGTTCBT BGCTGGGCTC CTGGBGGGGB GBTBGBGC-3'(FRAG..NO:1777)(SEQ ID NO:11159)

Human Monocyte-derived Neutrophil Chemotactic Factor

Nucleic Acid and Antisense Oligonucleotide Fragments
5'-GGGGTGGBBB GGTTTGGBGT BTGTCTTTBT GCBCTGBCBT CTBBGTTCTT TBGCBCTCCT TGGCBBBBCT GCBCCTTCBC BCBGBGCTGC BGBBBTCBGG BBGGCTGCCB BGBGBGCCBC GGCCBGCTTG GBBGTCBTGT TTBCBCBCBG TGBGBTGGTT CCTTCCGGGC TTGTGTGCTC TGCTGTCTCT TGGTTCCTTC CGGTGGTTTC TTCCTGGCTC TTGTCCTTTC TCTTGG CCCT TGGC-3' (FRAG. NO:1778) (SEQ ID NO:11160)

(FRAG. NO:1778) (SEQ ID NO:11160)
5'-GGBGT BTG-3' (FRAG. NO:1779) (SEQ ID NO:11161)
5'-GCBCTGBCBT CT-3' (FRAG. NO:1780) (SEQ ID NO:11162)
5'-CCG GTG G-3' (FRAG. NO:1781) (SEQ ID NO:11163)
5'-GG CCC TTG GC-3' (FRAG. NO:1782) (SEQ ID NO:11164)
5'-GCT TGT GTG CTC TGC TGT CTC T-3' (FRAG. NO:1192) (SEQ ID NO:10570)
5'-TGG TTC CTT CCG GTG GTT TCT TCC TGG CTC TTG TCC T-3' (FRAG. NO:1193) (SEQ ID NO:10571)

5'-ITC TCT TGG CCC TTG GC-3' (FRAG. NO:1194) (SEQ ID NO:10572)
5'-GGGGTGGBBB GGTTTGGBGT BTGTCTTTBT GCBCTGBCBT CTBBGTTCTT TBGCBCTCCT TGGCBBBBCT GCBCCTTCBC BCBGBGC-3' (FRAG. NO:1783) (SEQ ID NO:11165)

Human Neutrophil Elastase (Medullasin) Nucleic Acid and Antisense Oligonucleotide Fragments
5'-GGGCTCCCGC CGCBGBGGT TBTGGGCTCC CBGGBCCBCC CGCBCCGCGC GGBCGTTTBC BTTCGCCBCG CBGTGCGCGG CCGBCBTGBC GBBGTTGGGC GCBBTCBGGG TGGCGCCGCB GBBGTGGCCT CCGCGCBCGCT GCBGGBCBC CBTGBBGGGC CBCGCGCGCGCCCC BCBBTCTCCG BGGCCBGCGC GGTGCCCCCC BGCBGCBGGC CCGCGCBGGBC

GCCGBGGGTC-3' (FRAG. NO:1784) (SEQ ID NO:11166)

5'-GG TGG GGC-3' (FRAG. NO:1785) (SEQ ID NO:11167)

5'-G GGG CCG -3' (FRAG. NO:1786) (SEQ ID NO:11168) 5'- GGC CGG GTC CGG G-3' (FRAG. NO:1787) (SEQ ID NO:11169)

5'-TGG TGG GGC TGG GGC TCC GGG GTC TCT GCC CCT CCG TGC-3' (FRAG.NO:1195)(SEQ ID NO:10573)

5'-CGC GTG GGG CCG CGC TCG CCG GCC CCC C-3' (FRAG. NO:1196) (SEQ ID NO:10574)

5'-CCT GCC GGG TGG GCT CCC GCC GCG-3' (FRAG. NO:1197) (SEQ ID NO:10575)
5'-CGC CGG CCT GCC GGC CCC TC-3' (FRAG. NO:1198) (SEQ ID NO:10576)

5'-GTG GGT CCT GCT GGC CGG GTC CGG GTC CCG GGG GTG GGG-3'(FRAG.NO:1199)(SEQ ID NO:10577)

5-dro Got CC GC GC GC GC GC GC CCG GTC CCG GTC GCG GTG GCG-S (RAG, NO:1200) (SEQ ID NO:10578)
5-GGG GBG TCG GCC GCG GCC GGG GTC CCG GGG GTG GCGC-S (RAG, NO:1200) (SEQ ID NO:10578)
5-GGGCTCCCGC CGCGGGGGGGT TBTGGGGCTCC CBGGBCCBCC CGCBCCGCGC GGBCGTTTBC BTTCGCCBCG CBGTGCCGCG
CCGBCBTGBC GBBGTTGGGC GCBBTCBGGG TGGCGCCGCB GBBGTGGCCT CCGCGCBGCT GCBGGGBCBC CBTGBBGGGC
CBCGCGTGGG GCCGCCTCG CCGGCCCCC BCBBTCTCCG BGGCCBGCG GGTGCCCCCC BGCBGCBBGG CCGCCBGGBC
BCBGGCGBGG BGBCGCGB GTCGGCGGCC GBGGGTCBTG GTGGGGCTGG GGCTCCGGGG TCTCTGCCCC TCCGTGC-3' (FRAG. NO:1788) (SEQ ID NO:11170)

Human Neutrophil Oxidase Factor Nucleic Acid and Antisense Oligonucleotide Fragments
5'-CGGGBGTGGG GGTCCTGGBC GGCBCTGBBG GCBTCCBGGG CTCCCTTCCB GTCCTTCTTG TCCGCTGCCB GCBCCCCTTC CTGGCCTGGT GCTCTTCTCGT GCCCTTTCCC TTGGGTGTCT TGTTTTTTGTG GCCTCCBCCB GGGBCBTG-3' (FRAG. NO:1789) (SEQ ID NO:11171)

5'-CGGGBGTGGG GG-3 '(FRAG.NO:1790) (SEQ ID NO:11172)
5'-GCCBGCBCCCC-3' (FRAG.NO:1791) (SEQ ID NO:11173)
5'-C CBC CBG-3' (FRAG.NO:1792) (SEQ ID NO:11174)
5'-GGC CTC CBC CBG GGB CBT G-3' (FRAG. NO:1201) (SEQ ID NO:10579)

5'-GTC CTT CTT GTC CGC TGC C -3' (FRAG. NO:1202) (SEQ ID NO:10580)

5'-TCT CTG GGG TTT TCG GTC TGG GTG G-3 (FRAG. NO:1203) (SEQ ID NO:10581)

5'-GCT TTC CTC CTG GGG CTG CTG CTG-3' (FRAG. NO:1204) (SEQ ID NO:10582)

5'-GGC TCT TCT TTT TGT TTC TGG CCT GGT G-3' (FRAG. NO:1205) (SEQ ID NO:10583) 5'-CTC TCT CGT GCC CTT TCC-3' (FRAG. NO:1206) (SEQ ID NO:10584)

5'-CTT GGG TGT CTT GTT TTT GT-3' (FRAG. NO:1207) (SEQ ID NO:1216 5'-GGC CTC CBC CBG GGB CBT G-3' (FRAG. NO:1208) (SEQ ID NO:10586)

5'-CGGGBGTGGG GGTCCTGGBC GGCBCTGBBG GCBTCCBGGG CTCCCTTCCB GTCCTTCTTG TCCGCTGCCB GCBCCCCTTC BTTCCBGBGG CTGBTGGCCT CCBCCBGGGB CBTGBTTBGG TBGBBBCTBG GBGGCC-3' (FRAG. NO:1793) (SEO ID NO:11175)

Human Cathepsin G Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CCCTCCBCBT CTGCTCTGBC CTGCTGGBCT CTGGBTCTGB BGBTBCGCCB TGTBGGGGCG GGBGTGGGGC CTGCTCTCCC GGCCTCCGBT GBTCTCCCCT GCCTCBGCCC CBGTGGGTBG GBGBBBGGCC BGCBGBBGCB GGBGTGGCTG CBTCTTTCCT GGTGGGGCCT GCTCTCCCGG CCTCCGTGTG TTGCTGGGTG TTTTCCCGTC TCTGGTCTGC CTTCGGGGGT CGT-3' NO:1794) (SEQ ID NO:11176)

NO:1794) (SEQ ID NO:11176)

5-GBBGETBCGCC-3' (FRAG. NO:1795) (SEQ ID NO:11177)

5-CBGCCCCBG-3' (FRAG. NO:1796) (SEQ ID NO:11178)

5-TCC CGT CTC TGG-3' (FRAG. NO:1797) (SEQ ID NO:11179)

5'-GTG GGG CCT GCT CTC CCG GCC TCC G-3' (FRAG. NO:1209) (SEQ ID NO:10587)

5'-TCT GCT GTG GTG GTT TT TCC CGT CTC TGG-3' (FRAG. NO:1210) (SEQ ID NO:10588)

5'-TCT GCC TTC GGG GGT CGT-3' (FRAG. NO:1211) (SEQ ID NO:10589)

5-CCTCCBCBT CTGCTCTGBC CTGCTGGBCT CTGGBTCTGB BGBTBCGCCB TGTBGGGGC GGBGTGGGGC CTGCTCTCCC

GGCCTCCGBT GBTCTCCCCT GCCTCTBGCCC CBGTGGGTBG GBBBBGGCC BGCBGBBGCC GGBGTGGGGC CTGCTCTCCC GGCCTCCGBT GBTCTCCCCT GCCTCBGCCC CBGTGGGTBG GBGBBBGGCC BGCBGBBGCB GGBGTGGCTG-3' (FRAG. NO:1798) (SEQ ID NO:11180)

Human Defensin 1 Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CCGGGGCTGC BGCBBCCTCB TCBGCTCTTG CCTGGBGTGG CTCBGCCTGG GCCTGCBGGG CCBCCBGGBG BBTGGCBGCB BGGBTGGCGB GGGTCCTCBT GGCTGGGGTC BCBGBTCCTC TBGCTBGGCB GGGTGBCCBG BGBGGGC GGG TCC TCB TGG CTG GGG GCC TGG GCC TGC BGG GCC GCT CTT GCC TGG BGT GGC TC GCC CBG BGT CTT CCC TGG T GCTCAGCCTC CAAAGGAGCC AGCCTCTCCC CAGTTCCTGA AATCCTGAGT GGTACCTTC CACAGGCCT TGGCCACAGA TCTGCTGCT GCTTACTTT TGTCTGAGAT GGCCTCAGGT GGTAACTTTC TCACAGGCCT TGGCCACAGA TCTGATCATT ACAATTGCGT CAGCAGTGGA GGGCAATGTC TCTATTCTGC CTGCCCGATC TTTACCAAAA TTCAAGGCAC CTGTTACAGA GGGAAGGCCA AGTGCTGCAA GTGAGCTGGG AGTGACCAGA AGAAATGACG CAGAAGTGAA ATGAACTTTT TATAAGCATT CTTTTAATAA AGGAAAATTG CTTTTGAAGT AT CTGCAGTGGT AAAAAGATTC TATATCTGCT GTTTGATGAA TGCAGCACCC ACTAGCCACA TAGTGCTCGT GAGCACTTGC AATGCGGCTA GGGTGATTTC AATTAACCTA AAAGAGAACA GCCACAGGGA GCATGTGGCT GCCATATTGG ATGGTGCTGC TTTGAGAACA AAATGAGAGA AATGAGAGCT CTATTTACCT TGGTTGGCGG AACACATTGA AGGGACTCTG TATTGATACC AGGCTTCAAA CTTTGGGAAG TGTACTGGCC AACTTAAACA CATCCACAGG AGAATGAAGA GGTTTGGGAA GGGACCAGAA ACCAGGCATT GAGGACAATG AGAAGAGTTT TTCAAAAGTG GAATTACTGC AAAAAGTGGA AAAATAGCCT TTGGATGGAA GTTACTGATG AGACAATTTC CATCGGTGTG AAAGCCATCT TTCCAACAGA AAAAAGTGGA AAAATAGCCT TTGGATGGAA GTTACTGATG AGACAATTTC CATCGGTGTG AAAGCCATCT TTCCAACAGA
GATCTGCAAC ATGAGAATGT ACTGTCTCT AGGGTAGCGA TGGCCTCTTG TATTAGTCCG CTCAGGGCTAC CAGATTTATC
GTTTAAACTG CCCATAAACA GACCAGGCAG TTTAAACAAC AGAAATTTAT TTCCTCGCAG TCCTGGAGGC AGGAAGTCTG
CGATCAAGGT GGAAGCAGGG TTGGCTTCTT CTCAGGTGTC TGCTTGGC TGGTAGATGA CCGCCGCCTC CCTGGGTCCT
CACATGGTCT TTCCTCTGTG TGTGTCTGTC CCAATCTCTT CTTATAAGGA TGCAAGTCTT ATGGATCAGA GCACACCCCA
ATGACCGTGT TTAACTTGAA TCACCTCTTT AAAGTTTCTC TCTCCAAATA CAATCACCTC CTGAGGCACT GTTAGGGCTT
CGACACAGGA ATTCTTTTCC TAGGGGATTC AGTTCAGTCC AAAACGCCTA CCAGTGGAGA CTTGCAACAT GGCGCCTGC
TGGTCCCTCG CCAGGAATAT CACAGGCGAC TGTTCCATCT
TATCAGATCT GGGATACTGG GAGAAGGGCA AAATAAAGTC CAAGTAGAAA AAAAACTAT GAAAGTTTTA GAAGGTTATCAACTC GAAGTACCTA GAAGTTCAACGC
GAATTCAAGTC GAAATAGTGA AACGATCCTA GAATTCAACTC CAAATAGTGAA TGTGCGGAAGT GAAGGGGCCG GAATTCAACGC ATAATTTCAG CCCGATGTGA AACGATCCTA GATTTCAGCT GAAATAGTGA TGTGGGAAGT GAGGGGGCCG GGATTCAAGG CAGAGGGAAC AGCGTAACTG AAGGCATGGA AGGAGGGAAG TGTAGGCTGT GTTTGAAGAG TGGCAGCTGC TTCCACATTT CTAAAACACA GGATGIGATT TTGGGGTGTG TTGAGACAAG GCAGAAAACT TGTTTGGAAA AATAACTTGA ATTCCCTGCA CATTTAAAAT CTCTCAGCAG AAGAAAACCC CACTCAGAAC CCCACTGTTC ATTCCTTGGC TTGTATTTGG SCACAGCTGG CATAGCCCCA GACTGAGTAA GCTCTTCAGA CACCTCATTT CATGAGTAGC CCCAAAGATC AATCATGGGC CAATTTCTTG GAAGAGAAGA CTCTCCGGTG TTTTGCAGTT ATTTGTTCTG CTTTCGCGAG ATGTTCTCAA ATCGTTGCAG CTACAAGCCA TGAGTCTGAA GTGTTTGTGT TCCCTCCTTA CAGGTGGTAA CTTTCTCACA GGCCTTGGCC ACAGATCTGA TCATTACAAT TGCGTCAGCA GTGGAGGGCA ATGTCTCTAT TCTGCCTGCC CGATCTTTAC CAAAATTCAA GGCACCTGTT ACAGAGGGAA GGCCAAGTGC TGCAAGTGAG CTGAGAGTGA CCAGAAGAAA TGACGCAGAA GTGAAATGAA CTTTTTATAA GCATTCTTTT AATAAAGGAA AATIGCTITTI GAAGTATACC TCCTTTGGGC CAAAATGAAT CTTGTGTCTC AATIGGAAGA GGTAAAGAAG TAGGGGGGTTA GGGTGCATGG GTTGGAACGT GAGCACGCACAAA GCCTGCCTGG AAAAGGGGAG TGACGTCCTA TAGGGGGTTA GGGTGCATGG GTTGGAACGT GAGACAGGTC GAACCACAAA GCCTGCCTGG AAAAGGGGACTAGGGCTCAGGGGCTCAGTG ATGTCACCTC CACTTTGTTT GATCCACAAA CCAACAGGTG ACTGATTTTG GTCAGCTCAG CCTCCAAAGG AGCCAGCCTC TCCCCAGTTC CTGAAATCCT GAGTGTTGCC TGCCAGTCGC CATGAGAACT TCCTACCTTC TGCTGTTTAC TCTCTGCTTA CTTTTGCTG AGATGGCCTC AGGTGGTAAC TTTCTCACAG GCCTTGGCCA CAGATCTGAT CATTACAATT GCGTCAGCAG TGGAGGGCAA TGTCTCATAT CTGCCTGCCC GACCTCTTAC CAAAATTCAAG GCACCTGTTA CAGAGGGAAG GCCAAGTGCT GCAAGTGAGC TGGGAGTGAC CAGAAGAAAT GACGCAGAAG TGAAATGAAC TT -3' (FRAG.NO:1799) (SEQ ID NO-12379) 5'-GTCAGCTCAG CCTCCAAAGG AGCCAGCCTC TCCCCAGTTC CTGAAATCCT GAGTGTTGCC TGCCAGTCGC CATGAGAACT TCCTACCTTC TGCTGTTTAC TCTCTGCTTA CTTTTGTCTG AGATGGCCTC AGGTGGTAAC TTTCTCACAG GCCTTGGCCA CAGATCTGAT CATTACAATT GCGTCAGCAG TGGAGGGCAA TGTCTCTATT CTGCCTGCCC GATCTTTACC AAAATTCAAG GCACCTGTTA CAGAGGGAAG GCCAAGTGCT GCAAGTGAGC TGGGAGTGAC CAGAAGAAAT GACGCAGAAG TGAAATGAAC TT-3' (FRAG.NO:___) (SEQ ID NO:11844) 5'-CTGCAGTGGT AAAAAGATTC TATATCTGCT GTTTOATGAA TGCAGCACCC ACTAGCCACA TAGTGCTCGT GAGCACTTGC AATGCGGCTA GGGTGATITC AATTAACCTA AAAGAGAACA GCCACAGGGA GCATGTGGCT GCCATATTGG ATGGTGCTGC TTTGAGAACA AAATGAGAGA AATGAAGCCT CTATTTACCT TGGTTGGCGG AACACATTGA AGGGACTCTG TATTGATACC AGGCTTCAAA CTTTGGGAAG TGTACTGGCC AACTTAAACA CATCCACAGG AGAATGAAGA GGTTTGGGAA GGGACCAGAA AGGCTTCAAA CTTTGGGAAG TGTACTGGCC AACTTAAACA CATCCACAGG AGAATGAAGA GGTTTGGGAA GGGACCAGAA ACCAGCATT GAGGACAATG AGAAGAGTTT TTCAAAAGTG GAATTACTGC AAAAAGTGGA AAAATAGCCT TTGGATGGAA GTTACTGATG AGACAATTC CATCGGTGTG AAAGCCATCT TTCCAACAGA GATCTGCAAC ATGAGAATGT ACTGTCTCCT AGGGTAGCGA TGGCCTCTTG TATTAGTCCG CTCAGGCTAC CAGATTTATC GTTTAAACTG CCCATAAACA GACCAGGCAG TTTAAACACAC AGAAATTTAT TTCCTCGCAG TCCTGGAGGC AGGAAGTCTG CGATCAAGGT GGAAGCAGGG TTGGCTTCTT CTCAGGTGTC TGTCCTTGGC TGGTAGATGA CCGCCGCCTC CCTGGGTCCT CACATGGTCT TTCCTCTGTG TGTGTCTGTC CCAATCTCTT CTTATAAGGA TGCAAGTCTT ATGGATCAGA GCACACCCCA ATGACCGTGT TTAACTTGAA TCACCTCTTT AAAGTTTCTC TCTCCAAATA CAATCACCTC CTGAGGGCACT GTTAGGGCTT CGACACAGGA ATTCTTTTCC TAGGGGATTC AGTTCAGTCC AAAACGCCTA CCAGTGGAAC CTTGCAACAT GGCGGCCTGC TGGTCCCTCG CCAGGAATAT CACAGGCGAC TGTTCCCTGT TGCATGGAAT AGAAGGCTAT TCCAGAGTAC TGTCTCTATT TATCAGATCT GGGAATCTG GAGAAGGGCA AAATAAAGTC CAAGTAGAAA AAAAAACTAT GAAAGTTTTTA AGAGGAATCC ATAATTTCAG CCCGATGTGA AACGATCCTA GAGGGGCCC GGATTCAAGCT GAAGGCATGGA ACGATCCTA AGAGGCATGGA TGGGGGCCC GGATTCAAGCT GAAGGCAACTG AACGATCCTA AGAGGCATGGA TGGGGGCCC GGAATTCAAGGC CAGAGGGAAC ACGCTAACTG AACGCATCGA GATTTCAGCT GAAATAGTGA TGTGGGAAGT GAGGGGGCCG GGATTCAAGG CAGAGGGAAC AGCGTAACTG AAGGCATGGA AGGAGGGAAG TGTAGGCTGT GTTTGAAGAG TGGCAGCTGC TTCCACATT CTAAAACACA GGATGTGATT TTGGGGTGTG ATTIGITCTG CTTTCGCGAG ATGTTCTCAA ATCGTTGCAG CTACAAGCCA TGAGTCTGAA GTGTTTGTGT TCCCTCCTTA CAGGIGGTAA CTTTCTCACA GGCCTTGGCC ACAGATCTGA TCATTACAAT TGCGTCAGCA GTGGAGGGCA ATGTCTCTAT TCTGCCTGCC CGATCTTTAC CAAAATTCAA GGCACCTGTT ACAGAGGGAA GGCCAAGTGC TGCAAGTGAG CTGAGAGTGA CCAGAAGAAA TGACGCAGAA GTGAAATGAA CITTTTATAA GCATTCTTTT AATAAAGGAA AATTGCTTTT GAAGTATACC TCCTTTGGGC CAAAATGAAT CTTGTGTCTC AATTGGAAGA GGTAAAGAAG TAGGGGGTTA GGGTGCATGG GTTGGAACGT

GATCCACAAA CCAACAGGTG ACTGATTTTG-3' (FRAG.NO: __) (SEQ ID NO:11843)
5'-GCTCAGCCTC CAAAGGAGCC AGCCTCTCCC CAGTTCCTGA AATCCTGAGT GTTGCCTGCC AGTCGCCATG AGAACTTCCT ACCITCIGCT GITTACTCTC TGCTTACTTT TGTCTGAGAT GGCCTCAGGT GGTAACTTTC TCACAGGCCT TGGCCACAGA
TCTGATCATT ACAATTGCGT CAGCAGTGGA GGGCAATGTC TCTATTCTGC CTGCCCGATC TTTACCAAAA TTCAAGGCAC CTGTTACAGA GGGAAGGCCA AGTGCTGCAA GTGAGCTGGG AGTGACCAGA AGAAATGACG CAGAAGTGAA ATGAACTTTT TATAAGCATT CTTTTAATAA AGGAAAATTG CTTTTGAAGT AT-3' (FRAG.NO:___) (SEQ ID NO:11841)

GAGACAGGTC GAACCACAAA GCCTGCCTGG AAAAGGGGAG TGACGTCCTA GGCTTCAGTG ATGTCACCTC CACTTTGTTT

5'-CCGGGGC-3' (FRAG.NO:1800) (SEQ ID NO:11182)

5'-GG GCCTGCBGGG CC-3' (FRAG.NO:1801) (SEQ ID NO:11183) 5'-GGCBGCB BGG-3' (FRAG.NO:1802) (SEQ ID NO:11184)

5'-GGG TCC TCB TGG CTG GGG-3' (FRAG. NO:1212) (SEQ ID NO:10590) 5'-GCC TGG GCC TGC BGG GCC-3' (FRAG. NO:1213) (SEQ ID NO:10591) 5'-GCT CTT GCC TGG BGT GGC TC-3' (FRAG. NO:1214) (SEQ ID NO:10592) 5'-GCC CBG BGT CTT CCC TGG T-3' (FRAG. NO:1215) (SEQ ID NO:10593) 5'-CCGGGGCTGC BGCBBCCTCB TCBGCTCTTG CCTGGBGTGG CTCBGCCTGG GCCTGCBGGG CCBCCBGGBG BBTGGCBGCB BGGBTGGCGB GGGTCCTCBT GGCTGGGGTC BCBGBTCCTC TBGCTBGGCB GGGTGBCCBG BGBGGGC-3' (FRAG.NO:1803) (SEO ID NO:11185) Human Defensin 2 Nucelic Acid and Antiseuse Oligonucleotide Fragments GTCTCACACT CCTGACCTCA TGTGATCCAC CTGCCTCAGC CTCCCAAACT GCTGGGATGA CAGGTGTAAG CCACCATGCT AGGCTCAGAA ATTTCCTTTT ATAAAAATGT CATTAAGGAT CTTGGCTGCA CAATATCGTT ACCAGCTTCC TTTAAATCCA CTTCTGGCCT GCCAGGAATC AGGTTCTTCA GAACCTGACA TTTTAAATGA AGAGGTCAGG CAGTTCATGA GGAAAGCCTC ATTGTCCCCA TGTCTCTGTC ACTGCTGCAC CCCTGAGACA TCACAGACAT GGACACTGGG GCCTGCTTGT TTCTCAAACT GCCCTTAGAT CGAAAGAGGG AGGAACCAGG ATGAATGCCA CTCATTTTCC CAAGAAAGGC CCTCTCCTGA GTGCCCGGGA TGGGGCTCTG TCCATTGCCT GGGGCCGCCA ATTGCTACTC TGGGTTACGG AGGAAGGACA GGGTCCTGAG AGACACCAGA GACCTCACAC AGCCCTGAAA ACATGGGGCT CCTTCATAAG TGTTTCCCAT CACCAACAGG GAGACCACGT GGAGGCCTTG ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAATT TATTTCTATG GTTAATTGTG GTTTTCAACT GTAAGTTACT TGGTGTTAAT TTCCTATTAA ACAATTTCAG TAAGTTGCAT CTTTTTATCC CATCTCAGGT CAAATACTTA ACAGACTAAA TGATTTGAAA AAGCAAAAGT TTACTGGCTT GTGTGTGTA AAATGGAGGT ATGGTGGCTT TGATATTATC TTCTTGTGGT GGAGCTGAAT TCACAAGAGA TCGTTGCTGA GCTCCTACCA GACCCCACCT GGAGGCCCCA GTCACTCAGG AGAGATCAGG GTCTTTCACA ATCAGGTTCT ACAAAAATAA ACATCCCCCC AACCACAGCA GTGCCAGTTT CCATGTCAGA AACTTAGATC CAAATGACTG ACTCGCGTCT CATTATCATG ATGGAAAAGC CCAGGCTTGA GAAAGAAGCC CGCTGCGGAT TTACTCAAGG CGATACTGAC ACAGGGTTTG TGTTTTTCCA ACATGAGTTT TGAGTTCTTA CACGCGTGTTT GCTCTTTTTG
TGTGTTTTTT CCCTGTTAGG TGTTTTTGGT GGTATAGGCG ATCCTGTTAC CTGCCTTAAG AGTGGAGCCA TATGTCATCC
AGTCTTTTGC CCTAGAAGGT ATAAACAAAT TGGCACCTGT GGTCTCCCTG GAACAAAATG CTGCAAAAAG CCATGAGGAG
GCCAAGAAGC TGCTGTGGCT GATGCGGATT CAGAAAGGGC TCCCTCATCA GAGACGTGCG ACATGTAAAC CAAATTAAAC GCCAAGAAGC TGCTGTGGCT GATGCGGATT CAGAAAGGGC TCCCTCATCA GAGACCTGCA ACATGTAAAC CAAATTAAAC
TATGGTGTCC AAAGATACGC AATCTTTATC CTAGTAATTG TGGTCATTGG GTGATGTTGG TTTGGGCAGG CCATCTCTAA
TATCCTTGAA ACACCTTTTT CTGCTCTCCA GGAAGGGGTC AGGCTGCCA CAGCGGGGGCT TGGAGTGCTT TCCAGGGTCA
CAGGCATCTG TATTCTTTGG ATTCCTTGAC CTTCCCCATT TATTCCCGGC ATTTTCCTAA AACGTGTGCT TTGCTCCTCC
TGCATCCTCC CCTTGCATGC CCTCACCTAC CCCACATCTT CCCTAAAAAAA AGCAAGCCCA ACTCAAAGAC CAGTTCCCTC
ATGGAATCAT AGTGGATCTG CCCAGGGAGG GGATGCCCAG TCCTCTGTTC TTCACAAGAC TCCCTTCTTC TGGCTAAGGT
TTCTTATGCA ATTAT GAATTCACATT TCTCACCTT TTGATGTATT AAGAAAGAATAT ATCCTCTATC AAACTTTTCA GCCITCAATA ATTICTAATT CATCAGTCAG TGTTTTCCA TCCTTTACTG TGATGATGC CTTTCTTCCA AACTTTTCA
TTGCATCAGA GATGATGTTA CCAATTTCTT TGTCTCCATT TGCAGAAATT GTAGCAACCT GTGCAATTTC TTCAGGTTTG
GTCACAGGTT TAGACTGCTT TTTAAGTTCA GCAATTACAG CATCAACAGC TAACATCACA CCTCTCTTGA TTTCCACTGG
ATTAGCACCT TTGCTAACCT TCTGGAAGGC TTATTTTGGAA ATAGAGCATA CCAGTACAGC AGCAGTGATA GTGCCATCCC CCAGTCTCC CATTGTGTT ATTGGCAACA TCTTGGACAA GTTTAGCTCC AATGCTTTA TATTTATCCT TTAAGTCAAT
75 TGACTTTGCA TCAGTCACAC CATCTTTGT TACTTTGGGA CTTCCCCAGC TATGTTCAAT AATTACTGTT CTTCCCTTTG

GGAAGCATTT CTGTGGGGTG GTGGCAGGAC ATGTGCATGG TGAGGCAGGT CATCAGCAGC AAGTGAGAGC TGCCTCTTAC TTTCTAAAGG TGACATAGCA AGTATACAAA AAAAAATAAA ATATTAATTT AGGCAGAGCA CATAAAGGCT TTATTTCATA TTCCATTTCT CTGTATGCTT TCTTCACCAG GAAGAAATAG TTTTAGTGTC AGGAATGAAT GAGTCTGCCC CTCAATTCCA GCCTGCTCAG CACACAAGGA AACAAAGCCC TGACAATCAG AGTGACTCC TGGTGACTAA GCTCCAGTCC TGGATGCATA
TTTGTTTAGC AGTTCTGACA GCATCTGACC CAGCCCTCT TTTGCATACC CCACCAGAAC CTTCTTTTT TTTTTTTTTC TGTGGAGCTG ACATTCCCTG AGTGACGGTG TGAATGGAAG GAACTCAAGT GCGGGTGGTA GGCCACCTCC TGGCCCAGGC CTGGGTGAAC TCTGAGGGGA CACATGTAGT CACAATCCCA TCCTCCCATT CTCCTTCTCA GAGGAAGGAA GTGGGCATCC ATCTGCCTCA TCTCTCTCC GTGGGGAAGA TGGGGAGTT CAGGGGAACT TTCACATAAA TTTCACCAGC TCAGATCTCC TGTGAGGATG GGGCCCACCA TGCTCCCGGT GCTGCCAGAG GCCCTGAGCC CCTCCAGGGT CCCTGGGTTT GAGCCAGCCC TGTATCATCC CCAGGAGCTG AATGTCCGAA CAATGGATAG AATTAGATGG AAAGAGCTCT CAATTTGGCC TGAGACTGTC TTTATCTAAA GAAAGTAGTA TAGAATGTCA TTTTCTAAAT TTTTATATTT AAAGAGTAGA TACTGCAACC TAGAGAATTC CAGATAATCT TAAGGCCCAG CCTATACTGT GAGAACTACT GCAGCAGACA CTCTGCCCCC AGGACTTTTC TGATCAGAGG CCCTGAGAAC AGTCCCTGCC ACTAGGCCAC TGCAGGTTCA CAGGACAGGG ACAGCCCATT GAAACCAACT TTTAAACCTG GATGCCTAAC CTTCATTTTC TCCTTGATAT TATGAAAATA AAATAAAAAC CATGAAAGGA TAAAAGAGGG AGAGTGGAAG GGAAGGATGG AGAAAGGGAA AAAGAAATT TGAGAGTAAA TCCTAAAACA ATTAATCTAA TAGATATCAT CITGTGAAAT CCTCATTTTA CCAATCTTAT TTATGAGTCC TGGGTTTTGT GAGAACAATG GGGTTCTGAG AGGCACCAGA GACCTCATAT GGAGGGAAAC AAAAAGAAGA ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAATT TATTTCTATG GTTAATTGTG GTTTTCAACT GTAAGTTACT TGGTGTTAAT TTCCTATTAA ACAATTTCAG TAAGTTGCAT CTTTTTTATC CCATCTCAGA TCAAATACTT AACAGACTAA ATGATTTGAA AAAGCAAAAG TTTACTGGCT TGTGTGTGT AAAATGGAGG TATGGTGGCT TTGATATTAT CTTCTTGTGG TGGAGCTGAA TTCACAAGAG ATCGTTGCTG AGCTCCTGCC AGACCCCACC TGGAGGCCC AGTCACTCAG GAGAGATCAG GGTCTTTCAC AATCAGGTTC TACAAAAATA AACATCCCCC AAACCACAGC AGTGCCAGTT TCCATGTCAG AAACTTAGAT CCAAATGACT GACTCGCGTC TCATTATCAT GATGGAAAAG CCCAGGCTTG AGRICCAGIT TCCATGICAG AAACITAGAT CCAAATGACT GACTGCGTC TCATATLCAT GATGGAAAAG CCCAGGCTIG
AGAAAGAAGC CCGCTGCGGA TTTACTCAAG GCGATACTGA CACAGGGTTT GTGTTTTTCC AACATGAGTT TTGAGTTCTT
ACACGCTGTT TGCTCTTTTT GTGTGTTTTT TCCCTGTTAG GTGTTTTTGG TGGTATAGGC GATCCTGTTA CCTGCCTTAA
GACTGGAGCC ATATGTCATC CAGTCTTTTG CCCTAGAAGG TATAAACAAA TTGGCACCTG TGGTCTCCCT GGAACAAAAT
GCTGCAAAAA GCCATGAGGA GGCCAAGAAG CTGCTGTGGC TGATGCGGAT TCAGAAAGGG CTCCCTCATC AGAGACGTGC
GACATGTAAA CCAAATTAAA CTATGGTGTC CAAAGATACG CAATCTTTAT CCTAGTAATT GTGGTCATTG GGTGATGTTG
GTTTGGGCAG GCCATCCTA ATATCCTTGA AACACCTTTT TCTGCTCTCC AGGAAGGGGT CAGGGCTGCC ACAGCGGGGC TTGGAGTGC-3' (FRAG. NO:__) (SEQ ID NO:12380)
5'-GAATTCACAT TTCTCACCTT TTGATGTATT AAGAAAGTAT GGAGAAATAT ATCCTCTATC AAATTTCAT GCCTTCAATA ATTICIAATT CATCAGTCAG TGTTTTTCCA TCCTTTACTG TGATGATGCC CTTTCTTCCA AACTTTTTCA TTGCATCAGA GATGATGTTA CCAATTTCTT TGTCTCCATT TGCAGAAATT GTAGCAACCT GTGCAATTTC TTCAGGTTTG GTCACAGGTT TAGACTGCTT TTTAAGTTCA GCAATTACAG CATCAACAGC TAACATCACA CCTCTCTTGA TTTCCACTGG ATTAGCACCT TTGCTAACCT TCTGGAAGGC TTATTTGGAA ATAGAGCATA CCAGTACAGC AGCAGTGATA GTGCCATCCC CCAGTCTCTC CATTTGTGTT ATTGGCAACA TCTTGGACAA GITTAGCTCC AATGCTTTA TATTTATCCT TTAAGTCAAT TGACTTTGCA TCAGTCACAC CATCTTTGT TACTTTGGGA CTTCCCCAGC TATGTTCAAT AATTACTGTT CTTCCCTTTG GCCCCATTGT AATGGCTACA GCATCGACAA AAAGTCTACA CTTTGAAGCA TTAAGGCTCA GACATCAGCA CCAAATTTTA CATCTTTACC ATCACTICAA GTGAGGTGAG GAGCCAGTAG CCTGGACACT GGTCTCATCT GGTGAAAGAC TGTGGGTAAT GGAAGCATTT CTGTGGGGTG GTGGCAGGAC ATGTGCATGG TGAGGCAGGT CATCAGCAGC AAGTGAGAGC TGCCTCTTAC TTTCTAAAGG TGACATAGCA AGTATACAAA AAAAAATAAA ATATTAATTT AGGCAGAGCA CATAAAGGCT TTATTTCATA TTCCATTTCT CTGTATGCTT TCTTCACCAG GAAGAAATAG TTTTAGTGTC AGGAATGAAT GAGTCTGCCC CTCAATTCCA GCCTGCTCAG CTGTATGCTT TCTTCACCAG GAAGAAATAG TTTTAGTGTC AGGAATGAAT GAGTCTGCCC CTCAATTCCA GCCTGCTCAG
CACACAAGGA AACAAAGCCC TGACAATCAG AGTGACTCCC TGGTGACTAA GCTCCAGTCC TGGATGCATA TTTGTTTAGC
AGTCTTGACA GCATCTGACC CAGCCCTCC TTTGCATACC CCACCAGAAC CTTCTTTTT TTTTTTTTTC TTTGAGACTG
AGTCTTGCTC TGTCGGAAGC GATTCCCGTG CCTCAGCCTC CCAAATACCT GGAATTATAG GCGTAAGCCA TCATGCCTGG
CTAATTTTTG TATTTTCAT GGAGATGGGG TTTTGCCATG TTGGTCAAAT TGGTCTCACA CTCCTGACCT CATGTGATCC
ACCTGCCTCA GCCTCCCAAA GTGCTGGGAT GACAGGTGTA AGCCACCATG CTAGGCTCAG AAATTTCCTT TTATAAAAAT
GTCATTAAGG ATCTTGGCTG CACAATATCG TTACCAGCTT CCTTTAAATC CACCTCTGGC CTGCCAGGAA TCAGGGTTCT
TCAGAACCTG ACATTCACAGA CATGACACT GGGCGCTGCT TGTTTCTCAA ACTGCCCTTA GATCGAAAGA GGGAGGAACC CACCCCTGAG ACATCACAGA CATGGACACT GGGGCCTGCT TGTTTCTCAA ACTGCCCTTA GATCGAAAGA GGGAGGAACC AGGATGAATG CCACTCATTT TCCCAAGAAA GGCCCTCTCC TGAGTGCCCG GGATGGGGCT CTGTCCATTG CCTGGGGCCG

CCAATTGCTA CTCTGGGTTA CGGAAGAAGG ACAGGGTCCT GAGAGACACC AGAGACCTCA CACAGCCCTG AAAACATGGG GCTCCTTCAT AAGTGTTTCC CATCACCAAC AGGGAGACCA CGTGGAGGCC TTGCAGCCCT ACTCGGTGCT TCTCCACCAA
ATCCCAAGGG CAGTGACGCT GACGTCTGTG GAAAGCAGAG AAAGCCCTGG CTCCCAAAGC CCTGAAGTCC TGTGGAGCTG ACATTCCCTG AGTGACGTG TOAATGGAAG GAACTCAAGT GCGGGTGGTA GGCCACCTCC TGGCCCAGGC CTGGGTGAAC
TCTGAGGGGA CACATGTAGT CACAATCCCA TCCTCCCATT CTCCTTCTCA GAGGAAGGAA GTGGGCATCC ATCTGCCTCA
TCTCTCTCCC GTGGGGAAGA TGGGGGAGTT CAGGGGAACT TTCACATAAA TTTCACCAGC TCAGATCTC TGTGAGGATG
GGGCCCACCA TGCTCCCGGT GCTGCCAGAG GCCCTGAGCC CCTCCAGGGT CCTTGGGTTT GAGCCAGCCC TGTATCATCC CCAGGAGCTG AATGTCCGAA CAATGGATAG AATTAGATGG AAAGAGCTCT CAATTTGGCC TGAGACTGTC CCCAGATACT CAGGAAAAAC AGGACGTCGC ACAGAGTGGG CAGCAGGTGA GTGGCAGGTT ATAGGTCCTG AGTTTGAGTT TGTTCTCACG TGAGACAGAC CCAGCCCTC ACTCCATTCA CACACTGGGT TITAAATGGT GCAAGATAGG AGGAATTITC TGGTCCCAAG AGCAGGAGGA AGGGATTTC TGGGGTTTCC TGAGTCCAGA TTTGCATAAG ATCTCCTGAG TGTGCATTG TCTTTGAGGA CCATTCTCTG ACTCACCAGG TAAGTGGCTG AATTCTAACC TCTGTAATGA GCATTGCACC CAATACCAGT TCTGAACTCT ACCTGGTGAC CAGGGACCAG GACCTTTATA AGGTGGAAGG CTTGATGTCC TCCCCAGACT CAGCTCCTGG TGAAGCTCCC AGCCATCAGC CATGAGGGTC TTGTATCTCC TCTTCTCGTT CCTCTTCATA TTCCTGATGC CTCTTCCAGG TGAGATGGGC CAGGGAAATA GGAGGGTTGG CCAAATGGAA GAATGCCGTA GAAGTTCTCT GTCTCCTCTC ATTCCCCTCC ACCTATCTCT COCTCATCOC TOTOTOCOT TOCTCTOCT GIGGGGOCC TOCATCOTT TOTOTOCT TOCTCTOCT TOCCCTCTT

CTCTTTTTT CTGTCTTTCT TTTTCCTCT TCCCTAGAGC ATGTCTTTCT TTCTTTCTT TTCCTTCTT CTACCCACAC

CTTTAGACTG AGTAGACTGA ATGCCCTATT TAATTGAACC AAGCATTGCT TCCTTCAATA GAAAAGGAGT TTGAGAACCC AATGGACAC TCACTCGTTC TTCTAAGCCA ATATGAAGCA GCCAGTAGT TTGTAAATAT CATCTCTTCA CTGCTTTCCA
TGCTACAACT GCTGAGACTA TGGTTGAAAC CTGTTAGGTG ACCAGTAGT TTGTAAATAT CATCTCTTCA CTGCTTTCCA
TGCTACAACT GCTGAGACTA TGGTTGAAAC CTGTTAGGTG ACCTTTTTTAAA TAAAAGGCAG AAATTTTGAT TTTATCTAAA
GAAAGTAGTA TAGAATGTCA TTTTCTAAAT TTTTATATTT AAAGAGTAGA TACTGCAACC TAGAGAATTC CAGATAATCT
TAAGGCCCAG CCTATACTGT GAGAACTACT GCAGCAGACA CTCTGCCCCC AGGACTTTTC TGATCAGAGG CCCTGAGAAC
AGTCCCTGCC ACTAGGCCAC TGCAGGTTCA CAGGACAGGG ACAGCCCATT GAAACCAACT TTTAAACCTG GATGCCTAAC CTTCATTTTC TCCTTGATAT TATGAAAATA AAATAAAAAC CATGAAAGGA TAAAAGAGGG AGAGTGGAAG GGAAGGATGG AGAAAGGGAA AAAGAAAATT TGAGAGTAAA TCCTAAAACA ATTAATCTAA TAGATATCAT CTTGTGAAAT CCTCATTTTA CCAATCTTAT TTATGAGTCC TGGGTTTTGT GAGAACAATG GGGTTCTGAG AGGCACCAGA GACCTCATAT TTTCCAAAAC AAAAAGAAGA ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA ITACAAAATT TATTTCTATG GTTAATTGTG AACAAGAATI AITAGATATA AACAAGAATI TATTICTIATO GATATTAGA AACAAGAATI TATTICTIATO GATATTAGA GATATTAGA TAAGATTACAG TATTICTAGAG TATTICTAGAG TATTICTAGAG TATTICTAGAGATTACAG TAGATTACAG TAGATTACAG AGACCCCACC TGGAGGCCCC AGTCACTCAG GAGAGATCAG GGTCTTTCAC AATCAGGTTC TACAAAAATA AACATCCCCC AAACCACAGC AGTGCCAGTT TCCATTGTCAG AAACTTAGAT CCAAATGACT GACTCGCGTC TCATTATCAT GATGGAAAAG CCCAGGCTTG AGAAAGAAGC CCGCTGCGGA TATATAGAT CCAAATGACT GACTCGCGTC TGATTATCAT GATGAGAAAA CCAAATTAGAT TTGAGTTCTT ACACGCTGTTT
TGCTCTTTTT GTGTGTTTTT TCCCTGTTAG GTGTTTTTGG TGGTATAGGC GATCCTGTTA CCTGCCTTAA GAGTGGAGCC
ATATGTCATC CAGTCTTTTG CCCTAGAAGG TATAAACAAA TTGGCACCTG TGGTCTCCCT GGAACAAAAT GCTGCAAAAA
GCCATGAGGA GGCCAAGAAG CTGCTGTGGC TGATGCGGAT TCAGAAAGGG CTCCCTCATC AGAGACGTGC GACATGTAAA
CCAAATTAAA CTATGGTGTC CAAAGATACG CAATCTTTAT CCTAGTAATT GTGGTCATTG GGTGATGTTG GTTTGGGCAG GCCATCTCTA ATATCCTTGA AACACCTTTT TCTGCTCTCC AGGAAGGGGT CAGGGCTGCC ACAGCGGGGC TTGGAGTGC-3' (FRAG. NO: ___) (SEQ ID NO:11845) S-ATCCTTTAAG TCAATGGACT TTGCATCAGT CACACCATCT TTTGTTACTT TGGACTTCCC CAGCTATGTT CAATAATTAC TGTTCTTCCC TTGGGCCCCA TTGTAATGGC TACAGCCTCG ACAAAAAGTC TACACTTTGA AGCATTAAGG CTCGGACATC AGCACCAAAT TTTACATCTT TACCATCACT TCAAGTGAGG TGAGGAGCCA GTAGCCTGGA CACTGGTCTC ATCTGGTGAA AGACTGTGGG TAATGGAAGC ATTTCTGTGG GGTGCTGGCA GGACATGTGC ATGGCGAGGC AGGTCATCAG CAGCAAGTGA GAGCTGCCTC TTACTTTCTA AAGGTGACAT AGCAAATATA CAAAAAAAA TAAATAAATT ATTAATTTAG GTAGAGCACA TAAAGGCTTT ATTICATATT CCATTICTCT GTATGCTITC TICACCAGGA AGAAATAGTT TIAGTGTCAG GAATGAATGA GTCTGCCCCT CAATTCCAGC CTGCTCAACA CACAAGGAAA CAAAGCCCTG ACAATCAGAG TGACTCCCTG GTGACTAAGC ARTERIAGGE GRANGEARE ARGERIGER ARTERIAGN THREATING AGAINGTON TREE GREEK GCCCTTAGAT CGAAAGAGGG AGGAACCAGG ATGAATGCCA CTCATTTTCC CAAGAAAGGC CCTCTCCTGA GTGCCCGGGA TGGGGCTCTG TCCATTGCCT GGGGCCGCCA ATTGCTACTC TGGGTTACGG AGGAAGGACA GGGTCCTGAG AGACACCAGA GACCTCACAC AGCCCTGAAA ACATGGGGCT CCTTCATAAG TGTTTCCCAT CACCAACAGG GAGACCACGT GGAGGCCTTG
CAGCCCCACT CGGTGCTTCT CCACCAAATC CCAAGGGCAG TGACGCTGAC GTCTGTGGAA AGCAGAGAAA GCCCTGGCTC CCAAAGCCCT GAAGTCCCTG TGGAGCTGAC ATTCCCTGAG TGACGGTGTG AATGGAAGGA ACTCAAGTGC GGGTGGTAGG CCACCTCCTG GCCCAGGCCT GGGTGAACTC TGAGGGGACA CATGTAGTCA CAATCCCATC CTCCCATTCT CCTTCTCAGA GGAAGGAAGT GGGCATCCAT CTGCCTCATC TCTCTCCCGT GGGGAAGATG GGGAGTTTCA GGGGAACTTT CACATAAATT TCACCAGCTC AGATCTCCTG TGAGGATGGG GCCCACCATG CTCCCGGTGC TGCCAGAGGC CCTGAGCCCC TCCCAGGGTC CCTGGGTTTG AGCCAGCCCT GTATCATCCC CAGGAGCTGA ATGTCAGAGC AATGGATAGA ATTAGATGGA AAGAGCTCTC AATTTGACCT GAGACTGTCC CCAGATACTC AGGAAAAACA GGACGTCGCA CAGAGTGGGC AGCAGGTGAG TGGCAGGTTA TAGGTCCTGA GTTTGAGTTT GTTCTCACGT GAGACAGACC CAGCCCCTCA CTCCATTCAC ACACTGGGTT TTAAATGGTG CAAGATAGGA GCAATTTTCT GGTCCCAAGA GCAGGAGGAA GGGATTTTCT GGGGTTTCCT GAGTCCAGAT TTGCATAAGA TCTCCTGAGT GTGCATTGTT CTTTGAGGAC CATTCTCTGA CTCACCAGGT AAGTGGCTGA ATTCTAACCT CTGTAATGAG CATTGCACCC AATACCAGTT CTGAACTCTA CCTGGTGACC AGGGACCAGG ACCTTTATAA GGTGGAAGGC TTGATGTCCT

AATTITGATI TTATCTAAAG AAAGTAGTAT AGAATGTCAT TTTCTAAATT TTTATATTTA AAGGGTAGAT ACTGCAACCT AGAGAATTCC AGATAATCTT AAGGCCCAGC CTATACTGTG AGAACTACTG CAGCAAGACA CTCTGCCTCC AGGACTTTTC
TGATCAGAGG CCCTGAGAAC AGTCCCTGCC ACTAGGCCAC TGCAGGTTCA CAGGACAGGG TACAGCCCAT TGAAACCTAC TTTTAAACCT GGATGCCTAA CCTTCATTTT CTCCTTGATA TTATGAAAAT AAAATAAAAA CCATGAAAGG ATAAAAGAGG GAGAGTGGAA GGGAAGGATG GAGAAAGGGA AAAAGAAAAT TTGAGAGTAA ATCCTAAAAC AATTAATCTA ATAGATATCA TCTTGTGAAA TCCTCATTTT ACCAATCTTA TTTATGAGTC CTGGGTTTTG TGAGAACAAT GGGGTTCTGA GAGGCACCAG AGACCTCATG TTTTCCAAAA CCTAGAACAG TATAATGAAG GAAGGCGGGG AGGCAGGGAG GCAGGGAGGC AGGAGGCAG GGAGGCGGGC AGGTGGGGAG GGAGGGACGG AAGGAGGGAG GGAGGGAGGG AGGGAGGAG GGAGGGATAA AAAAAGAAGA ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAATT TATTTCTATG GTTAATTGTG GTTTTCAACT GTAAGTTACT TGGTGTTAAT TTCCTATTAA ACAATTTCAG TAAGTTGCAT CTTTTTATCC CATCTCAGGT CAAATACTTA ACAGACTAAA TGATTTGAAA AAGCAAAAGT TTACTGGCTT GTGTGTGTA AAATGGAGGT ATGGTGGCTT TGATATTATC TTCTTGTGGT GGAGCTGAAT TCACAAGAGA TCGTTGCTGA GCTCCTACCA GACCCCACCT GGAGGCCCCA GTCACTCAGG AGAGATCAGG GTCTTTCACA ATCAGGTTCT ACAAAAATAA ACATCCCCCC AACCACAGCA GTGCCAGTTT CCATGTCAGA AACTTAGATC CAAATGACTG ACTCGCGTCT CATTATCATG ATGGAAAAGC CCAGGCTTGA GAAAGAAGCC CGCTGCGGAT AACTTAGATC CAAATGACTG ACTCGCGTCT CATTATCATG ATGGAAAAGC CCAGGCTTGA GAAAGAAGCC CGCIGCGGAT
TTACTCAAGG CGATACTGAC ACAGGGTTT TGTTTTTCCA ACATGAGTTT TGAGTTCTTA CACGCTGTTT GCTCTTTTTG
TGTGTTTTTT CCCTGTTAGG TGTTTTTGGT GGTATAGGCG ATCCTGTTAC CTGCCTTAAG AGTGGAGCCA TATGTCATCC
AGTCTTTTGC CCTAGAAGGT ATAAACAAAT TGGCACCTGT GGTCTCCCTG GAACAAAATG CTGCAAAAAAG CCATGAGAGG
GCCAAGAAGC TGCTGTGGCT GATGCGGATT CAGAAAGGGC TCCCTCATCA GAGACGTGCG ACATGTAAAC CAAATTAAAC
TATCCTTGAA ACACCTTTTT CTGCTCTCCA GGAAGGGGTC AGGGCTGCCA CAGCGGGGCT TGGAGTGCTT TCCAGGGTCA
ACACCTTGTAA ACACCTTTTT CTGCTCTCCA GGAAGGGGTC AGGGCTGCCA CAGCGGGGCT TGGAGTGCTT TCCAGGGTCAC
ACACCTTCTCAA ACACCTTCTT CTGCTCTCCA GGAAGGGGTT AGGGCTGCCA ATTTCCCTTAA
ACACCTTCTAAA ACACCTTCTCA ATTTCCTTCAA AACGTCTCCA TTCCTCTCAACA ATTTCCTTCAAA ACACCTTCTCAACATT TATCCTTCAAA AACGTCTCCAATT TCCAGGGTCCAATT TTCCATGCAACATT TCCAGGGTCCAATT TCCAGGGTCCAATT TCCACGGTCAACATT TCCACGGTCCAATT TCCACGGTCCAATT TCCACGGTCCAATT TCCACGGTCCAATT TCCACGGTCCAATT TCCACGGTCAATT TCCACGGTCCAATT TCCACGGTCAATT TCCACGGTCAATT TCCACGGTCCAATT TCCACGGTCAATT TCCACGGTCCAATT TCCACGGTCAATT TCACGGTCAATT TCCACGGTCAATT TCCACGGTCAATT TCCACGGTCAATT TCCACGGTCAA CAGGCATCTG TATTCTTTGG ATTCCTTGAC CTTCCCCATT TATTCCCGGC ATTTTCCTAA AACGTGTGCT TTGCTCCTCC TGCATCCTCC CCTTGCATGC CCTCACCTAC CCCACATCTT CCCTAAAAAA AGCAAGCCCA ACTCAAAGAC CAGTTCCCTC ATGGAATCAT AGTGGATCTG CCAAGGGAGG GGATGCCCAG TCCTCTGTTC TTCACAAGAC TCCCTTCTTC TGGCTAAGGT TTCTTATGCA ATTAT GAATTCCCTG TAAGCCCTGT TACAGGGGCT GCACCCCAGA TACAACCTGA CCTGTGTCCA AGGCGGGCAA CTCAACCCTT AGATATTGAA TGGGTCCCAT GGCACCAATG CTTAAACACC AGCAGCCCTC ACAACCACAG ATCGTGTTTT AAGGATGAGG AGGTAGTTCT CTGGATGCAC AGGCTTCAAT CCAAATGGGC TCATGACGCC GCAGCACACA CCCAGTCTGC AGCCTGAAGA GTTGGAGCAT TGCATTCACA GAAAGCATCC AGACATGATC ATGGGCTCAG GGATACACCT GTTCTCCGAT GTGTACCAGT GAAGGATGGA AACTCCTATG CCTCCCAGAA AGCACCACTC AAGCTTTTGC TGAATGCTTC TCTGAAGGCC CACAAGGCTG AGAGGCTGTG CAACACCAGC AGTAAAGTGA ATGCCCAGAC TCCCACCTCC TTTCTTGGGT GGCCATCTGG AAAGGCCACT CCCACCCTGA TGGCTAATGC CTCAGACCAG TTCTTGGCCC AGATGATCCT AGACAATTGT TTAAGCTTAA ACTGTTCATT GGCCAAGCAA ACAGGTGATA GTACCTCTGG GGAACCACAT GCCGCGTGTA CATCCAGATC TTAAGCTTAA ACTGTTCATT GGCCAAGCAA ACAGGTGATA GTACCTCTGG GGAACCACAT GCCGCGTGTA CATCCAGATC TCAGGAGAAC CCAAAAATGT CTGTTCCACA TAGCAACAGA AGCCCAGGTA GCACTCAGTC TCACCTGGGT GTTCTCCAAC ATCCCAGCTC AGCCAAATGG CTTCATTAG TTTTATGGT TAGACCCCAG GTCCTCGGGA CACTGCTTTA GAACACATT CCAAATCCTC CTCTGTGTGC AGGTGGCATT CCTATCCCAA TCCCAGAGC CTTAAAATATT CCCTTGGTGC AGGTAGTTCA GCTGAGCCCAG GTCCTCGGGA CACTGCTTTA GAACACATT CCCAGAGCC CTTAAAATATT CCCTTGGTGC AGGTAGTTCA GCTGGGCCT GCCAAGGGT GACCAAGGAT GATGAGAAGA ACTGTGTTA GAGCCCCGG AAATTAGGAC ACCCACCAA ATTTCCAAC TGTCCTTGCC ACCAAAGGAT GATGAGAAGGT TCACCAGGGTC AACTGTGTTA GAGCCCCGG AAATTAGGAC ACCCACCAA ATTTCCAAC TGTCCTTGCC ACCACAAGTA TTTAATGGAC CCCACAGGAA GGTAACCCCGG AAATTAGGAC ACCCACACA ATTTCCAAC TGTCCTTGCC ACCACAAGTA TTTAATGGAC CCCACAGAAA GTAACCCCGG AAATTAGGAC ACCTCATCC AAAAGACCTT TAAATAGGGG AAGTCCACTT GTGCACCGCT GCCCAAGGAC ACCCACACAAAA CCCAGCGGGT TACACCCGG AAATTAGGAC ACCTCATCC AAAAGACCTT TAAATAGGGG AACTCCACTT GTGGACCAGGCT GCCCAAGGAA ACTTAAAACTT TACACTGAGT TTTCATCATT GAAGCTATGC CTCCCAATCTG ACCTCTGACT GTGGGCCCGC CCCAGAGGGA CCCAGCGGGT GAACCCCAGCGGGT TACACCTGC TAGGAACGT TTCCCGGACC TCTCGAATCTG ACCTCTGACT GTGGGGCCCGC CCCAGAGGGA CCCAGCGGGT GAACCCCAC TTTCATCAAT ACACTGACT TTTCATCATT GAAGCAACCT TTTCATCATT GAAGCAACCT TTTCATCATT GAAGCAACCT TTTCATCATT GAAGCAACCT TTTCATCATT GAAGCAACCT TTTCATCATT GAAGCAACCT TTTCATCATT TTCACTCAGT TTTCATCATT TTCACTCGGT TTTCATCATT TTCACTCGGT TTTCATCATT TTCACTCGGT TTTCATTTTTCACTCGGT TTTCATCATT TTCACTCGGT TTTCATTTTTCCTTTTAT TTCACTCGGT TTTCAGTTTT TTCACTCGATT TTCAGTTTT TTCACTCAGATT TTCAGTTTT TTCA GATGGTAAGT CACCTGAATC CTGAAGTGAA TTACTCGCTA TTCCATTGGA ACTCATATAG GACACCAGAA TCTAGACCTC CAGAGAACAG CAGGACCCAT CTTCAGAAAA TAAGAAGCAT TTGTTCCCTG AGCCTGTTGA ATCAAAGTGC AATTTCTATT CTTTTTGGAA TGTTAAAAAG TGAATCATAA TATTTAAGCA GGTGAACCCA CGAGTAACAT AGCAGGGTCT TTCTTGTCAT TATTAGCTCC AACCTAGCAC AGACATTAAA GGTACAGATG TATACTAGCA TGAAACTGGG AGAACAGGAG CATTCGAGCA ACCTTGAGAC CAATGGGCCT CTCTTATAAA ATGCACACCT CCTCTCACTG AGATTGAGGA AGGTTTCTTG TCTCCGAGCC TTCTCCCAGT AGAGCTATAA ATCCAGGCTG GCTCCTCCCT CCCCACACAG CTGCTCCTGC TCTCCCTCCT CCAGGTGACC CCAGCCATGA GGACCCICGC CATCCTTGCT GCCATTCTCC TGGTGGCCCT GCAGGCCAG GCTGAGCCAC TCCAGGCAAG
AGCTGATGAG GTTGCTGCAG CCCCGGAGCA GATTGCAGCG GACATCCCAG AAGTGGTTGT TTCCCTTGCA TGGGACGAAA GCTTGGCTCC AAAGCATCCA GGTGAGAGAG GCAGGCATGC AGAGCTGCTA AGTCTAGAGG GAAGGACGGG AGAGAGGTTC CAGAGTTGGG TCTCAGCAGT CTATGTCACT GAGGTGGCTT CACTTAGAAT CTCTGGGCAT TGATTTTCTC ATCTAGAAAT TGAACAGAGA GCCAAATAAA CCTGAGAAAC TITATTTCTC CAAAGACTTG ATTCCAAGAA ACATCTGTGA AATTCACTAA GTTTAAGATA TGAAGAGACA GACTAGTTAT TICIGGATCT AAACAAGTAG ACTIAGTIGT AAAGAGAACA TTTIACICTA TCTACAGAAG AGCTTTTAAA AACTGCAGCC AAGCCTGAGG GTAAGTTCAG GTGTGTGTGT GATGGGGCAG GAATGCAAAA ATGAGAGCAA AGGAGAATGA GTCTCAAATT CTGTGTGACA AGCACTGCTC TGCGTGTTTA TTCCTATCGA CTGAGGTTGT TCGTGCTACC GGCTGCAATG CAGCCAGCAT CACCTGTCAG CTAGCATGTG ACTTCCCCGA GATTCTTTTT CTTACCCACT GCTAACTCCA TACTCAATTT CTCATGCTCT CCCTGTCCCA GGCTCAAGGA AAAACATGGA CTGCTATTGC AGAATACCAG CGTGCATTGC AGGAGAACGT CGCTATGGAA CCTGCATCTA CCAGGGAAGA CTCTGGGCAT TCTGCTGCTG AGCTTGCAGA AAAAGAAAAA TGAGCTCAAA ATTTGCTTTG AGAGCTACAG GGAATTGCTA TTACTCCTGT ACCTTCTGCT CAATTTCCTT TCCTCATCTC AAATAAATGC CTTGTTACAA GATTTCTGTG TTTCCACCTC TTTAATGTGT GATATGTGTC TGTGTCAAGA CACTTGGGAT ACACGTACCA AAACGCAAAA TCAAATTTTT GAACAATATA-3' (FRAG. NO:___) (SEQ ID NO:12381)

Human Defensin 3 Nucleic Acid and Antisense Oligonucleotide Fragments
5-CGCTGCBBTC TGCTCCGGGG CTGCBGCBBC CTCBTCBGCTC TTGCCTGGBGTG GCTCBGCCTGG GCCTGCBGGG
CCBCCBGGBGB BTGGCBGCBBG GBTGGCGBGGG TCCTCBTGGC TGGGGTCBCCT GGBGGBGGGB GBGCBGGGG TCCTCBTGGC
TGGGGTCCCT CTCTCCCGTC CT CCTACCTTGC TATAGAAGAC CTGGGACAGA GGACTGCTGT CTGCCCTCTC TGGTCACCCT
GCCTAGCTAG AGGATCTGTG ACCCCAGCCA TGAGGACCCT CGCCATCCTT GCTGCCATTC TCCTGGTGGC CCTGCAGGCC

CAGGCTGAGC CACTCCAGGC AAGAGCTGAT GAGGTTGCTG CAGCCCCGGA GCAGATTGCA GCGGACATCC CAGAAGTGGT TGTTTCCCTT GCATGGGACG AAAGCTTGGC TCCAAAGCAT CCAGGCTCAA GGAAAAACAT GGACTGCTAT TGCAGAATAC CAGCGTGCAT TGCAGGAGAA CGTCGCTATG GAACCTGCAT CTACCAGGGA AGACTCTGGG CATTCTGCTG CTGAGCTTGC AGAAAAAGAA AAATGAGCTC AAAATTTGCT TTGAGAGCTA CAGGGAATTG CTATTACTCC TGTACCTTCT GCTCAATTTC CTTT-3' (FRAG. NO:1804) (SEQ ID NO:12382)

5'-CCTACCTTGC TATAGAAGAC CTGGGACAGA GGACTGCTGT CTGCCCTCTC TGGTCACCCT GCCTAGCTAG AGGATCTGTG ACCCCAGCCA TGAGGACCCT CGCCATCCTT GCTGCCATTC TCCTGGTGGC CCTGCAGGCC CAGGCTGAGC CACTCCAGGC AAGAGCTGAT GAGGTTGCTG CAGCCCCGGA GCAGATTGCA GCGGACATCC CAGAAGTGGT TGTTTCCCTT GCATGGGACG AAAGCTTGGC TCCAAAGCAT CCAGGCTCAA GGAAAAACAT GGACTGCTAT TGCAGAATAC CAGCGTGCAT TGCAGGAGAA CGTCGCTATG GAACCTGCAT CTACCAGGGA AGACTCTGGG CATTCTGCTG CTGAGCTTGC AGAAAAAGAA AAATGAGCTC AAAATTTGCT TTGAGAGCTA CAGGGAATTG CTATTACTCC TGTACCTTCT GCTCAATTTC CTTT-3' (FRAG. NO:___) (SEQ ID

5'-GAATTCCCTG TAAGCCCTGT TACAGGGGCT GCACCCCAGA TACAACCTGA CCTGTGTCCA AGGCGGGCAA CTCAACCCTT AGATATTGAA TGGGTCCCAT GGCACCAATG CTTAAACACC AGCAGCCCTC ACAACCACAG ATCGTGTTTT AAGGATGAGG AGGAGATOAN TOGOTACCAN GULACCANO CITAAACACC AGCAGCCCIC ACAACCACAG ATCGTGTTT AAGGATGAGG
AGGTAGTTCT CTGGATGCAC AGGCTTCAAT CCAAATGGGC TCATGACGCC GCAGCACACA CCCAGTCTGC AGCCTGAAGA
GTTGGAGCAT TGCATTCACA GAAAGCATCC AGACATGATC ATGGGCTCAG GGATACACCT GTTCTCCGAT GTGTACCAGT
GAAGGATGGA AACTCCTATG CCTCCAGGAA AGCACCACCA AGCTTTTGC TGAATGCTTC TCTGAAGGCC CACAAGGCTG
AGAGGCTGG CAACACCAGC AGTAAAGTGA ATGCCCAGAC TCCCACCTCC TTTCTTGGGT GGCCATCTGG AAAGGCCACT AGAGGCTGTG CAACACCAGC AGTAAAGTGA ATGCCCAGAC TCCCACCTCC THETTIGGGT GGCCATCTGG AAAGGCCACT
CCCACCCTGA TGGCTAATGC CTCAGACCAG TTCTTGGCCC AGATGATCCT AGACAATTGT TTAAGCTTAA ACTGTTCATT
GGCCAAGCAA ACAGGTGATA GTACCTCTGG GGAACCACAT GCCGCGTGTA CATCCAGATC TCAGGAGAAC CCAAAAAATGT
CTGTTCCACA TAGCAACAGA AGCCCAGGTA GCACTCAGTC TCACCTGGGT GTTCTCCAAC ATCCCAGCTC AGCCAAATGG
CTTTCATTAG TTTTTATGGT TAGACCCCAG GTCCTCGGGA CACTGCTTTA GAAACACATT CCAAATCCTC CTCTGTGTGC AGGTGGCATT CCTATCCCAA TCTCTTTGCA GGGCGTATAC TGTGATACGC AGCCAGGCTG TCCCAGAGGC CTTAAATATT CCCTTGGTGC AGGTAGTTCA GCTTAGCCAC AGCCAATGCA TCACAGGGTC AACTGTGTTA GGAGCCATTG AGAATCCATA 25 GTTGGTTGCT GCCTGGGCCT GGCCAGGGCT GACCAAGGTA GATGAGAGGT TCCTCTGTGG AGTTCTACTT TAACCTCACC TTCCCACCAA ATTTCTCAAC TGTCCTTGCC ACCACAATTA TTTAATGGAC CCAACAGAAA GTAACCCCGG AAATTAGGAC ACCTCATCCC AAAAGACCTT TAAATAGGGG AAGTCCACTT GTGCACGGCT GCTCCTTGCT ATAGAAGACC TGGGACAGAG GACTGCTGTC TGCCCTCTCT GGTCACCCTG CCTAGCTAGA GGATCTGTAA GTACTACAAA ACTTAAACTT TACACTGAGT TTTCATCATT GAAGCTATGC CTCCAATCTG ACCTCTGACT GTGGGGCCGC CCCAGAGGGA CCCAGCGGGT GAATCCCTGC CTTCAGAAAA TAAGAAGCAT TTGTTCCCTG AGCCTGTTGA ATCAAAGTGC AATTTCTATT CTTTTTGGAA TGTTAAAAAG TGAATCATAA TATTTAAGCA GGTGAACCCA CGAGTAACAT AGCAGGGTCT TTCTTGTCAT TATTAGCTCC AACCTAGCAC AGACATTAAA GGTACAGATG TATACTAGCA TGAAACTGGG AGAACAGGAG CATTCGAGCA ACCTTGAGAC CAATGGGCCT CTCTTATAAA ATGCACACCT CCTCTCACTG AGATTGAGGA AGGTTTCTTG TCTCCGAGCC TTCTCCCAGT AGAGCTATAA ATCCAGGCTG GCTCCTCCT CCCCACACAG CTGCTCCTGC TCTCCCTCCT CCAGGTGACC CCAGCCATGA GGACCCTCGC CATCCTTGCT GCCATTCTCC TGGTGGCCCT GCAGGCCCAG GCTGAGCCAC TCCAGGCAAG AGCTGATGAG GTTGCTGCAG CCCCGGAGCA GATTGCAGCG GACATCCCAG AAGTGGTTGT TTCCCTTGCA TGGGACGAAA GCTTGGCTCC AAAGCATCCA GGTGAGAGAG GCAGGCATGC AGAGCTGCTA AGTCTAGAGG GAAGGACGGG AGAGAGGTTC CAGAGTTGGG TCTCAGCAGT GCTGAGAGAG GCAGGCATGC AGAGCTGCTA AGTCTAGAGG GAAGGACGGG AGAGAGGTTC CAGAGTTGG TCTCAGCAGT
CTATGTCACT GAGGTGGCTT CACTTAGAAT CTCTGGGCAT TGATTTTCTC ATCTAGAAT TGAACAGAGA GCCAAATAAC
CCTGAGAAAC TTTATTTCTC CAAAGACTTG ATTCCAAGAA ACATCTGTGA AATTCACTAA GTTTAAGATA TGAAGAGACA
GACTAGTTAT TTCTGGATCT AAACAAGTAG ACTTAGTTGT AAAGAGAAAC TTTTACTCTA TCTACAGAAG AGCTTTTAAA
AACTGCAGCC AAGCCTGAGG GTAAGTTCAG GTGTGTGTG GATGGGGCAG GAATGCAAAA ATGAGAGCAA AGGAGAATGA
GTCTCAAATT CTGTGTGACA AGCACTGCTC TGCGTGTTTA TTCCTATCGA CTGAGGTTGT TCGTGCTACC GGCTGCAATG
CAGCCAGCAT CACCTGTCAG CTAGCATGGA ACTTCCCCCA GATTCCTATTGC AGAATACAG CGTGCATTCCA AGGAGAACGT CTCATGCTCT CCCTGTCCCA GGCTCAAGGA AAAACATGGA CTGCTATTGC AGAATACCAG CGTGCATTGC AGGAGAACGT CGCTATGGAA CCTGCATCTA CCAGGGAAGA CTCTGGGCAT TCTGCTGCTG AGCTTGCAGA AAAAGAAAAA TGAGCTCAAA ATTTGCTTTG AGAGCTACAG GGAATTGCTA TTACTCCTGT ACCTTCTGCT CAATTTCCTT TCCTCATCTC AAATAAATGC CTTGTTACAA GATTTCTGTG TTTCCACCTC TTTAATGTGT GATATGTGTC TGTGTCAAGA CACTTGGGAT ACACGTACCA AAACGCAAAA TCAAATTTTT GAACAATATA-3' (FRAG. NO:___) (SEQ ID NO:11846)

5'-GGCBGCBBGG-3' (FRAG. NO:1805) (SEQ ID NO:11187)

5'-GG CTG GGG-3' (FRAG. NO:1806) (SEQ ID NO:11188)

5'-GGGGTCBCC-3' (FRAG. NO:1807) (SEQ ID NO:11189)

5'-GGG TCC TCB TGG CTG GGG TC-3' (FRAG. NO:1216) (SEQ ID NO:10594)

5'-CCT CTC TCC CGT CCT-3' (FRAG. NO:1217) (SEQ ID NO:10595)

S'-CGCTGCBBTC TGCTCCGGGG CTGCBGCBBC CTCBTCBGCTC TTGCCTGGBGTG GCTCBGCCTGG GCCTGCBGGG CCBCCBGGBGB BTGGCBGCBBG GBTGGCGBGGG TCCTCBTGGC TGGGGTCBCCT GGBGGBGGGB GBGCBGG-3' NO:1808) (SEQ ID NO:11190)

Human Macrophage Inflammatory Protein-1-alpha/RANTES

Receptor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GICTITGITI CTGGGCTCGT GCCCCBTCCC GGCTTCTCTC TGGTTCCGTC CTCTGTGGTG TTTGGCCCTG CTTCCTTTTG CCTGTTGAGG GGGCAGCAGT TGGGCCCCAA AGGCCCTCTC GTTCACCTTC TGGCACGGAGTT GCATCCCCATA GTCAAACTCT GTGGTCGTGT CATAGTCCTC TGTGGTGTTT GGAGTTTCCA TCCCGGCTTC TCTCTGGTTC CAAGGGAGB GGGGCBGCB GTTGGGCCCC BBBGGCCCTC TCGTTCBCCT TCTGGCBCGG BGTTGCBTCC CCBTBGTCBB BCTCTGTGGT CGTGTCBTBG TCCTCTGTGG TGTTTGGBGT TTCCBTCCCG GCTTCTCTCT GGTTCCBBGG GB-3' (FRAG. NO:1809) (SEQ ID NO:11191)

5'-GGGCC CC-3' (FRAG. NO:1810) (SEQ ID NO:11192)

```
5'-GGGGGCBGC-3' (FRAG. NO:1811) (SEQ ID NO:11193)
5'-CCCGGCTTC-3' (FRAG. NO:1812) (SEQ ID NO:11194)
        5'-CCCGCTC'3' (FRAG. NO:1812) (SEQ ID NO:11194)
5'-GTC TTT GTT TCT GGG CTC GTG CC-3' (FRAG. NO:1218) (SEQ ID NO:10596)
5'-CCB TCC CGG CTT CTC TCT GGT TCC-3' (FRAG. NO:1219) (SEQ ID NO:10597)
5'-GTC CTCTGT GGT GTT TGG-3' (FRAG. NO:1220) (SEQ ID NO:10598)
5'-CCC TGC TTC CTT TTG CCT GTT-3' (FRAG. NO:1221) (SEQ ID NO:10599)
5'-GAGGGGGGCAG CAGTTGGGCC CCAAAGGCCC TCTCGTTCAC CTTCTGGCAC GGAGTTGCAT CCCCATAGTC AAACTCTGTG
        GTCGT-3' (FRAG. NO:1222) (SEQ ID NO:10600)
        5'-GTCATAGTCCTCTGTGGTGTTTGGAGTTTCCATCCCGGCTTCTCTCTGGTTCCAAGGGA-3' (FRAG.NO:1223)(SEQ ID NO:10601)
        5-GBGGGGGCBG CBGTTGGGCC CCBBBGGCCC TCTCGTTCBC CTTCTGGCBC GGBGTTGCBT CCCCBTBGTC BBBCTCTGTG
        GTCGTG-3' (FRAG. NO:1224) (SEQ ID NO:10602)
        5'-TCBTBGTCCTCTGTGGTGTTTGGBGTTTCCBTCCCGGCTTCTCTCTGGTTCCBBGGGB-3'(FRAG. NO:1225)(SEO ID NO:10603)
        RANTES Antisense Oligonucleotide Fragments
        5'-GGCBCGGG CBGTGGGCGG GCBBTGTBGG CBBBGCBGCB GGGTGTGGTG TCCGBGGBBT BTGGGGBGGC BGBTGCBGGB
        GCGCBGBGGG CBGTBGCBBT GBGGBTGBCB GCGBGGCGTG CCGCGGBGBC CTTCBTGGTB CCTGTGGBGB GGCTGTCGGB
GGGGGTGTGG TGTCCGCTTG GCGGTTCTTT CGGGTGTTTC TTCTCTGGGT TGGCCTGCTG CTCGTCGTGGT CGCTCCGCTC
CCGGGTTCGT CTCGCTCTGT CGCCCCTTCC TTCCTTGTCG TGTTCCTCCC TTCCTTGCCT CT-3' (FRAG. NO: 1813) (SEQ ID
        NO:11195)
        NO:1195)
5'-GGGTTGGC-3' (FRAG. NO: 1814) (SEQ ID NO:11196)
5'-CGGGG CBG-3' (FRAG. NO: 1815) (SEQ ID NO:11197)
5'-CCGGGTTCG-3' (FRAG. NO: 1816) (SEQ ID NO:11198)
5'-GGGTGTGGTG-3' (FRAG. NO: 1817) (SEQ ID NO:11199)
5'-GGCCBCGGGG CBGTGGCCGG GCBBTGTBGG CBBBGCBGCB GGGTGTGGTG TCCGBGGBBT BTGGGGBGGC BGBTGCBGGB
5'-CGCCGT (FRAG. NO:1330 (FFAG. NO:1330)
20
        GCGC-3' (FRAG. NO:1226) (SEQ ID NO:10604)
        5'-BGBGGGCBGTB GCBBTGBGGB TGBCBGCGBG GCGTGCCGCG GBGBCCTTCB TGGTBCCTGT GGBGBGGCTG TCGGBGG-3'
        (FRAG. NO:1227) (SEQ ID NO:10605)
        30
        (SEQ ID NO:10607)
        5'-GGGTGTGGTGTCCG-3' (FRAG. NO:1230) (SEO ID NO:10608)
        5'-CTTGGCGGTTCTTTCGGGTG-3' (FRAG. NO:1231) (SEQ ID NO:10609)
        5'-CTTGGCGGTTCTTTCGGGTG-3' (FRAG. NO:1231) (SEQ ID NO:10609)
5'-TTTCTTCTCTGGGTTGGC-3' (FRAG. NO:1232) (SEQ ID NO:10610)
5'-CTGCTGCTCGTCGTCGTC-3' (FRAG. NO:1233) (SEQ ID NO:10611)
5'-GCTCCGCTCCCGGGTTC-3' (FRAG. NO:1234) (SEQ ID NO:10612)
5'-GTCTCGCTCTGTCGCC-3' (FRAG. NO:1235) (SEQ ID NO:10613)
5'-CTTCCTTCCTTGTC-3' (FRAG. NO:1236) (SEQ ID NO:10614)
5'-GTGTTCCTCCCTTCCTTGCCTCT-3' (FRAG. NO:1237) (SEQ ID NO:10615)
5'-GGGCBCGGGG CBGTGGGCGG GCBBTGTBGG CBBBGCBCB GGGTGTGGTG TCCGBGGBBT BTGGGGBGGC BGBTGCBGGB
GCCGBGBGGG CBGTBGCBBT GBGGBTGBCB GCGBGGCGTG CCGCGGBGBC CTTCBTGGTB CCTGTGGBGB GGCTGTCGGB GG-3'
(FRAG. NO:11310) (SEO ID NO:11200)
           (FRAG. NO:1818) (SEQ ID NO:11200)
        Human Muscarinic Acetylcholine Receptor HM1 Nucleic Acid and Antisense Oligonucleotide Fragments
5'-GCTGCCCGGC GGGGTGTGCG CTTGGCGCTC CCGTGCTCGG TTCTCTGTCT CCCGGTCCCC CTTGCCTGGC GTCTCGGGCC
TTCGTCCTCT TCCTCTTCTT CCTTCCGCTC CGTGGGGGCT GCTTGGTGGG GGCCTGTGCCT CGGGGTCCCG GGGCTTCTGG
CCCTTGCCGT TCATGGTGGC TAGGTGGGGC GTTCBTGGTG GCTBGGTGGG GC-3'(FRAG. NO:1819)(SEQ ID NO:11201)
        5'-GGTGGGGC-3' (FRAG. NO:1820) (SEQ ID NO:11202)
        5'-GCCCGGCGGGG-3' (FRAG. NO:1821) (SEQ ID NO:11203)
        5'-CGG GGC TTC TGG CCC-3' (FRAG. NO:1822) (SEQ ID NO:11204)
        5'-GTT CBT GGT GGC TBG GTG GGG C-3' (FRAG. NO:1238) (SEQ ID NO:10616)
5'-GCT GCC CGG CGG GGT GTG CGC TTG GC-3' (FRAG. NO:1239) (SEQ ID NO:10617)
50
        5'-GCT CCC GTG CTC GGT TCT CTG TCT CCC GGT-3' (FRAG, NO:1240) (SEQ ID NO:10618) 5'-CCC CCT TTG CCT GGC GTC TCG G-3' (FRAG, NO:1241) (SEQ ID NO:10619)
        5'-GCC TTC GTC CTC TTC CTC TTC CTT CC-3' (FRAG. NO:1242) (SEQ ID NO:10620)
        5'-GCT CCG TGG GGG CTG CTT GGT GGG GGC CTG TGC CTC GGG GTC C-3' (FRAG. NO:1243) (SEQ ID NO:10621)
        5'-CGG GGC TTC TGG CCC TTG CC-3' (FRAG. NO:1244) (SEQ ID NO:10622)
        5'-GTT CAT GGT GGC TAG GTG GGG C-3' (FRAG. NO: 1245) (SEO ID NO:10623)
        Human Muscarinic Acetylcholine Receptor HM3 Nucleic Acid and Antisense Oligonucleotide Fragments
        GGGGTT GGC CAT GTT GGT TGC CGGG CCC GCG GCT GCA GGG G-3' (FRAG. NO:1823) (SEQ ID NO:11205)
       GGGGTT GGC CAT GTT GGT TGC CGGG CCC GCG GCT GCA GGG G-3' (FRAG. NO:1823) (SEQ ID NO:11205)

5'-CCC GGG CGG-3' (FRAG. NO:1824) (SEQ ID NO:11206)

5'-G GCG GGG GGG CC-3' (FRAG. NO:1825) (SEQ ID NO:11207)

5'-CCC GGG CCG CC-3' (FRAG. NO:1826) (SEQ ID NO:11208)

5'-GG CCG TGT-3' (FRAG. NO:1827) (SEQ ID NO:11208)

5'-GGG GTG GGT BGG CCG TGT CTG GGG-3' (FRAG. NO:1246) (SEQ ID NO:10624)

5'-GTT GGC CBT GTT GGT TGC C-3' (FRAG. NO:1247) (SEQ ID NO:10625)

5'-TCT TGG TGG TGC GCC GGG C-3' (FRAG. NO:1248) (SEQ ID NO:10626)

5'-GCG TCT TGG CTT TCT TCT CCT CGG GCC GGG CCT CTT GG-3' (FRAG.NO:1249)(SEQ ID NO:10627)
        5'-GCG CTG GCG GGG GGG CCT CCT CC-3' (FRAG. NO:1251) (SEQ ID NO:10629)
        5'-GCT CTG TGG CTG GGC GTT CCT TGG TGT TCT GGG TGG C-3' (FRAG. NO:1252) (SEQ ID NO:10630)
                                                                                      192
```

```
5'-TGG CGG GCG TGG TGG CCT CTG TGG TGG-3' (FRAG. NO:1253) (SEQ ID NO:10631)
       5'-GGG CCC GCG GCT GCB GGG G-3' (FRAG. NO:1254) (SEQ ID NO:10632)
      5'-TIG CCT GTC TCT GTC-3' (FRAG. NO:1254) (SEQ ID NO:10632)
5'-TIT GCT TCT CCT GTC-3' (FRAG. NO:1255) (SEQ ID NO:10634)
5'-CTT TGC GCT CCC GGG CCG CC-3' (FRAG. NO:1256) (SEQ ID NO:10634)
5'-GGG GTG GGT AGG CCG TGT CTG GGG-3' (FRAG. NO:1257) (SEQ ID NO:10635)
       5'-GTT GGC CAT GTT GGT TGC C-3' (FRAG. NO:1258) (SEQ ID NO:10636)
       5'-GGG CCC GCG GCT GCA GGG G-3' (FRAG. NO:1259) (SEQ ID NO:10637)
       GTG GTG CCT CTG CCC GTG CTC GCCCTG CCT GGG CTG GCC TCT TCG GGT GTG GCT TTG GGG CTC TCT TGG TTG CCC TTT
       15
       5'-GGCCCGGGC-3' (FRAG. NO:1829) (SEQ ID NO:11211)
       5'-GCCGGGGGGGG-3' (FRAG. NO:1830) (SEQ ID NO:11212)
5'-GCCGTGGGCTGGCC-3' (FRAG. NO:1831) (SEQ ID NO:11213)
5'-GGGGG TGGCC-3' (FRAG. NO:1832) (SEQ ID NO:11214)
       5'-GG GGG TGG CCG TTG TGG GCG G-3' (FRAG. NO:1833) (SEQ ID NO:11215)
5'-CGG TTT CCT TTG CGG TC-3' (FRAG. NO:1260)(SEQ ID NO:10638)
       5'-TTG GCC CGG GCT CCG GGT G-3' (FRAG. NO:1261)(SEQ ID NO:10639)
       5'-CCC GCC CGC CCG CCG GCC GCC GC-3' (FRAG. NO:1262)(SEQ ID NO:10640)
       5'-CCC GCC GGG CTG TCC CCG CCC CGC CCC-3' (FRAG. NO:1263)(SEQ ID NO:10641)
5'-GGC CCG GGG CGC GGG GG-3' (FRAG. NO:1264)(SEQ ID NO:10642)
       5'-CGG CCC TCC CGC CCC TCT GG-3' (FRAG. NO:1265)(SEQ ID NO:10643)
       5'-GCC GGC GGC GTC GG-3' (FRAG. NO:1266)(SEQ ID NO:10644)
5'-CCG CTC GGG CCT GGG GTT CCC TCT CCT CCC CCT GTG C-3' (FRAG. NO:1267)(SEQ ID NO:10645)
      5'-CCC CTC GCG CCT GGG GTT CCC TCT CCT CCC CCT GTG C-3' (FRAG. NO:1267)(SEC 5'-GCC TGC CTC TTG CTC TTC-3' (FRAG. NO:1268)(SEQ ID NO:10646)
5'-TGC GTC CGC TGC CTT CTC CC-3' (FRAG. NO:1269)(SEQ ID NO:10647)
5'-TGT CCC TCC GCC GTT GCC TGT GC-3' (FRAG. NO:1270)(SEQ ID NO:10648)
5'-TGT CCG TCC TGT CGC CCT TCC GTG GTG C-3' (FRAG. NO:1271)(SEQ ID NO:10649)
5'-TGT TGT CTC TTC TGC CCT C-3' (FRAG. NO:1272)(SEQ ID NO:10650)
5'-GGT GTG CTG GTG GTG GTG GTG GTG-3' (FRAG. NO:1273)(SEQ ID NO:10651)
       5'-CCT CTG CCC GTG CTC GCC-3' (FRAG. NO:1274)(SEQ ID NO:10652)
       5'-CTG CCT GGG CTG GCC TCT TCG GGT-3' (FRAG. NO:1275)(SEQ ID NO:10653)
5'-GTG GCT TTG GGG CTC TCT TGG TTG CCC TTT-3' (FRAG. NO:1276)(SEQ ID NO:10654)
5'-CTT CTC GTG GTG CCT CTC CTC CCT GGC TTG GTC GT-3' (FRAG. NO:1277)(SEQ ID NO:10655)
       5'- TGT CTG GGG TGG TGC TCC TCT CCC-3' (FRAG. NO:1278)(SEQ ID NO:10656)
       5'-TTT CCC TGC TGG CCG TTT GT-3' (FRAG. NO:1279)(SEQ ID NO:10657)
       5'-CCT GTT TTC TGT CTT CCT CT-3' (FRAG. NO:1280)(SEQ ID NO:10658)
       5'-TTC CTC CTG TTT CTC CGT-3' (FRAG. NO:1281)(SEQ ID NO:10659)
       5'-TTG GCT TGC TGC TTG CGG GGC TGT CTC C-3' (FRAG. NO:1282)(SEQ ID NO:10660)
       5'-CTT GCC CCT GTG GGC TTT CCC-3' (FRAG. NO:1283)(SEQ ID NO:10661)
       5'-TGG TCC GGT CTT CTC CTT GGG GGT C-3' (FRAG. NO:1284)(SEQ ID NO:10662)
       5'-GCC CTT CTT GGT GGG CTG-3' (FRAG. NO:1285)(SEQ ID NO:10663)
       5'-GCT CGT CTG TCT TTT TCC TTC C-3' (FRAG. NO:1286)(SEQ ID NO:10664)
       5'-TGG GGG TGG CCG TTG TGG GCG GTG TGG TCC GCC T-3' (FRAG. NO:1287)(SEQ ID NO:10665)
       5'-TGC CTC TGC TGG TCT TTC-3' (FRAG. NO:1288)(SEQ ID NO:10666)
       Human Interleukin-1 (IL-1) Nucleic Acid and antisense Oligocnucleotide Fragments
      Human Interleukin-1 (IL-1) Nucleic Acid and antisense Oligocnucleotide Fragments
5-AAGCTTCTAC CCTAGTCTGG TGCTACACTT ACATTGCTTA CATCCAAGTG TGGTTATTTC TGTGGCTCCT GTTATAACTA
TTATAGCACC AGGTCTATGA CCAGGAGAAT TAGACTGGCA TTAAACAGA ATAAGAGATT TTGCACCTGC AATAGACCTT
ACCACACCCA TTATTTACAA TTAAACAGGA ACAGAGGGAA TACTTTATCC AACTCACACA AGCTGTTTTC
CTCCCAGATC CATGCTTTTT TGCGTTTATT ATTTTTAGA GATGGGGGCT TCACTATGTT GCCCACACTG GACTAAAACT
CTGGGCCTCA AGTGATTGTC CTGCCTCAGC CTCCTGAATA GCTGGGACTA CAGGGGCATG CCATCACACC TAGTTCATTT
CCTCTATTTA AAATATACAT GGCTTAAACT CCAACTGGGA ACCCAAAACA TTCATTTGCT AAGAGTCTGG TGTTCTACCA
CCTGAACTAG GCTGGCCACA GGAATTATAA AAGCTGAGAA ATTCTTTAAT AATAGTAACC AGGCAACATC ATTGAAGGCT
CATATGTAAA AATCCATCCC TTCCTTTCTC CCAACTCCCA TTCCCAAACCT TAGCCACTGG TTCTGGCTGA GGCCTTACCC
TTCCTTCCCG GGGCTTGCAC ACACCTTCTT CTACAGAAGA CACCCTTGG GCATATCCTA CAGAAGACCA GGCTTCTCC
TGGTCCTTGG TAGAGGGCTA CTTTACTGTA ACAGGGCCAG GGTGGAGAGT TCTCTCCTGA AGCTCCATCC CCTCTATAGG
       TGGTCCTTGG TAGAGGGCTA CTTTACTGTA ACAGGGCCAG GGTGGAGAGT TCTCTCTGA AGCTCCATCC CCTCTATAGG AAATGTGTTG ACAATATTCA GAAGAGTAAG AGGATCAAGA CTTCTTTGTG CTCAAATACC ACTGTTCTCT TCTCTACCCT
       GCCCTAACCA GGAGCTTGTC ACCCCAAACT CTGAGGTGAT TTATGCCTTA ATCAAGCAAA CTTCCCTCTT CAGAAAAGAT GGCTCATTTT CCCTCAAAAG TTGCCAGGAG CTGCCAAGTA TTCTGCCAAT TCACCCTGGA GCACAATCAA CAAATTCAGC
```

AATCICTACT ATCCAAAATT ATTAGGAGAA AATTGAAAAT TICCAACTCT GTCTCTCTCT TACCTCTGTG TAAGGCAAAT ACCTTATTCT TGTGGTGTTT TTGTAACCTC TTCAAACTIT CATTGATTGA ATGCCTGTTC TGGCAATACA TTAGGTTGGG CACATAAGGA ATACCAACAT AAATAAAACA TTCTAAAAGA AGTTTACGAT CTAATAAAGG AGACAGGTAC ATAGCAAACT CACATAAGGA ATACCAACAT AAATAAACA TICTAAAGA AGTTACGAT CIAATAAGG AGACAGGTAC ATACCAAACA AATTCAAAGG AGCTAGAAGA TGGAGAAAAT GCTGAATGTG GACTAAGTCA TTCAACAAAG TTTCAGGAA GCACAAAGAG GAGGGGCTCC CCTCACAAGAT ATCTGGATTA GAGGCTGGCT GAGCTGATGG TGGCTGGTGT TCTCTGTTGC AGAAGTCAAG ATGGCCAAAG TTCAGGACAT GTTTGAAGAC CTGAAGAACT GTTACAGGTA AGGAATAAGA TTTATCTCTT GTGATTTAAT GAGGGTTTCA AGGCTTACAC AGAATCAAGA GTGGCCAGCA TGGGGCAGG CCGGCAGAGG TTGTAGAGAATAACA GTGGCCAGCA TGGGCCAGG CCGGCAGAGG TTGTAGAGAATAACA GTGGCCAGACAAACC TAGAGAATAACA TGAAAACT AGCAATTAC CACTAAAACT TGAAATAACA TTATATCACATTAAACA TTATATCACATTAACA TTATATCACATTAACATTAACA TTATATCACATTAACA TTATATCACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACATTAACAT GTGTACTAGT CCTGAAGTCA GAGCAGGTTC AGAGAAGACC CAGAAAAACT AAGCATTCAG CATGTTAAAC TGAGATTACA
TTGGCAGGGA GACCGCCATT TTAGAAAAAT TATTTTTGAG GTCTGCTGAG CCCTACATGA ATATCAGCAT CAACTTAGAC ACAGCCTCTG TTGAGATCAC ATGCCCTGAT ATAAGAATGG GTTTTACTGG TCCATTCTCA GGAAAACTTG ATCTCATTCA GGAACAGGAA ATGGCTCCAC AGCAAGCTGG GCATGTGAAC TCACATATGC AGGCAAATCT CACTCAGATG TAGAAGAAAG GTAAATGAAC ACAAAGATAA AATTACGGAA CATATTAAAC TAACATGATG TTTCCATTAT CTGTAGTAAA TACTAACACA AACTAGGCTG TCAAAATTTT GCCTGGATAT TTTACTAAGT ATAAATTATG AAATCTGTTT TAGTGAATAC ATGAAAGTAA
TGTGTAACAT ATAATCTATT TGGTTAAAAT AAAAAGGAAG TGCTTCAAAA CCTTTCTTTT CTCTAAAGGA GCTTAACATT TOTGTAACAT ATAATCTATT TGGTTAAAAT AAAAAGGAAG TGCTTCAAAA CCTTTCTTTT CTCTAAAGGA GCTTAACATT
CTTCCCTGAA CTTCAATTAA AGCICTICAA TTTGTTAGCC AAGTCCAAAT TTTACAGATA AAGCACAGGT AAAGCTCAAA
GCCTGTCTTG ATGACTACTA ATTCCAGATT AGTAAGATAT GAATTACTCT ACCTATGTGT ATGTGTAGAA GTCCTTAAAT
TTCAAAGATG ACAGTAATGG CCATGTGTAT GTGTGTGACC CACAACTATC ATGGTCATTA AAGTACATTG GCCAGAGACC
ACATGAAATA ACAACAATTA CATTCTCATC ATCTTATTTT GACAGTGAAA ATGAAGAAGA CAGTTCCTCC ATTGATCATC
TGTCTCTGAA TCAGGTAAGC AAATGACTGT AATTCTCATG GGACTGCTAT TCTTACACAG TGGTTTCTTC ATCCAAAGAG
AACAGCAATG ACTTGAATCT TAAATACTTT TGTTTTACCC TCACTAGAGA TCCAGAGACC TGTCTTTCAT TATAAGTGAG
ACCAGCTGCC TCTCTAAACT AATAGTTGAT GTGCATTGGC TTCTCCCAGA ACAGAGCAGA ACTATCCCAA ATCCCTGAGA
ACTGGAGTCT CCTGGGGCAG GCTTCATCACGA GTGTTATCTT ATGCCAGGCAC CGCAGGCCGC TTCACCAGGT
GTCTGTCTCC TAAACGTGATG TCTTTCTCTG ACCAGAGCT CAGAGGCTC CAAACATGAA GTCTGTCTCC TAACGTGATG TGTTGTGGTT GTCTTCTCTG ACACCAGCAT CAGAGGTTAG AGAAAGTCTC CAAACATGAA GCTGAGAGAG AGGAAGCAAG CCAGCTGAAA GTGAGAAGTC TACAGCCACT CATCAATCTG TGTTATTGTG TTTGGAGACC ACAAATAGAC ACTATAAGTA CTGCCTAGTA TGTCTTCAGT ACTGGCTTTA AAAGCTGTCC CCAAAGGAGT ATTTCTAAAA TATTTTGAGC ATTGTTAAGC AGATTTTTAA CCTCCTGAGA GGGAACTAAT TGGAAAGCTA CCACTCACTA CAATCATTGT TAACCTATTT AGTTACAACA TCTCATTTTT GAGCATGCAA ATAAATGAAA AAGTCTTCCT AAAAAAATCA TCTTTTTATC CTGGAAGGAG GAAGGAAGGT GAGACAAAAG GGAGAGAGGG AGGGAAGCCT AATGAAACAC CAGTTACCTA AGACCAGAAT GGAGATCCTC CTCACTACCT CTGTTGAATA CAGCACCTAC TGAAAGAACT TTCATTCCCT GACCATGAAC AGCCTCTCAG CTTCTGTTTT CCTTCCTCAC AGAAATCCTT CTATCATGTA AGCTATGGCC CACTCCATGA AGGCTGCATG GATCAATCTG
TGTCTCTGAG TATCTCTGAA ACCTCTAAAA CATCCAAGCT TACCTTCAAG GAGAGCATGG TGGTAGTAGC AACCAACGGG AAGGTTCTGA AGAAGAGCG GTTGAGTTTA AGCCAATCCA TCACTGATGA TGACCTGGAG GCCATCGCCA ATGACTCAGA GGAAGGTAAG GGGTCAAGCA CAATAATATC TTTCTTTTAC AGTTTTAAGC AAGTAGGGAC AGTAGAATTT AGGGGAAAAT TAAACGTGGA GTCAGAATAA CAAGAAGACA ACCAAGCATT AGTCTGGTAA CTATACAGAG GAAAATTAAT TTTTATCCTT
CTCCAGGAGG GAGAAATGAG CAGTGGCCTG AATCGAGAAT ACTTGCTCAC AGCCATTATT TCTTAGCCAT ATTGTAAAGG TATAAGAAAA TAAAAATCAC TCATATCGTC AGTGAGAGTT TACTACTGCC AGCACTATGG TATGTTTCCT TAAAATCTTT
GCTATACACA TACCTACATG TGAACAAATA TGTCTAACAT CAAGACCACA CTATTTACAA CTTTATATCC AGCTTTTCTT ACTTAGCAAT GTATTGAGGA CATTTTAGAG TGCCCGTTTT TCACCATTAT AAGCAATGCA ACAATGAACA TCTGTATAAA TAAATATTCA TTTCTCTCAC CCTTTATTTC CTTAGAATAT ATTCCTAGAA GTAGAATTTC CCAGAGCCAT GAGGATTTGT 50 GACGCTATTG ATATGTGCCA CTITGCACTC TCTGTGACAT ATATAATTAT TTTTAATGCA TTCATTTTT TCTCAGAGTG
CATTCGTTTG AAAACATAGA CGGGAAATAC TGGTAGTCTT CCTTGTCAGT TAGAAACACC CAAACAATGA AAAATGAAAA
AGTTGCACAA ATAGTCTCTA AAAACAATGA AACTATTGCC TGAGGAATTG AAGTTTAAAA AGAAGCACAT AAGCAACAAC AAGGATAATC CTAGAAAACC AGTICTGCTG ACTGGGTGAT TICACTTCTC TITGCTTCCT CATCTGGATT GGAATATTCC
TAATACCCCC TCCAGAACTA TITTCCCTGT TIGTACTAGA CTGTGTATAT CATCTGTGTT TGTACATAGA CATTAATCTG TAATACCECC TCCAGAACTA TITTCCCTGT TIGTACTAGA CTGTGTATAT CATCTGTGTT TGTACATAGA CATTAATCTG
CACTTGTGAT CATGGTTTTA GAAATCATCA AGCCTAGGTC ATCACCTTT AGCTTCCTGA GCAATGTGAA ATACAACTTT
ATGAGGATCA TCAAATACGA ATTCATCCTG AATGACGCCC TCAATCAAAG TATAATTCGA GCCAATGATC AGTACCTCAC
GGCTGCTGCA TTACATAAATC TGGATGAAGC AGGTACATTA AAATGGCACC AGACCATTCT GTCATCCTCC CCTCCTTTCA
TTTACTTATT TATTTATTTC AATCTTTCTG CTTGCAAAAAA ACATACCTCT TCAGAGTTCT GGGTTGCACA ATTCTTCCAG
AATAGCTTGA AGCACAGCAC CCCCATAAAA ATCCCAAGCC AGGGCAGAAG GTTCAACTAA ATCTGGAAGT TCCACAAGAG
AGAAGTTTCC TATCTTTGAG AGTAAAGGGT TGTGCACAAA GCTAGCTGAT GTACTACCTC TTTGGTTCTT TCAGACATTC
TTACCCTCAA TTTTAAAACT GAGGAAACCT TCAGACATAT TAAATGATTT ACTCAGATTT ACCCAGAAGC CAATGAAGAA
CAATCACTCT CCTTTAAAAA GTCTGTTGAT CAAACTCACA AGCAAGCAG ATCCTTTATTA TCTCTGATAA
CAATATTTGTG AGGCAAAACC TCCAATAAGC TACAAATATG GCTTAAAAGGA TGAAGTTTAG TGTCCAAAAA CCTTTTATCAC CATATTOTG AGGCAAAAACC TCCAATAAGC TACAAATATG GCTTAAAAGG TGAAGTTTAG TGTCCAAAAAA CTTTTATCAC ACACATCCAA TTTTCATGGC GGACATGTT TAGTTTCAAA AGGATTAGA TTTTCAAAGG TCCAGAGAGG CAATTTTGCA ATAAACAAGC AAGACTTTTT CTGATTGGAT GCACTTCAGC TAACATGCTT TCAACTCTAC ATTTACAAAT TATTTTGTGT TCTATTTTTC TACTTAATAT TATTTCTGCA ATTTTCCCAA TATTGACATC GTGTATGTAT TTGCCATTTT TAATATCACT AGACAATTCA ATCAGGTTGC TACGTTGGTC CCTTGGGTTT ACTCTAAATA GCTTGATTGC AAATATCTTT GTATATATTA

GATTITATAC AAATACAATG AATITACTIT CITTITGGTI CITCITCTCA CCAGTGAAAT ITGACATGGG IGCITATAAG TCATCAAAGG ATGATGCTAA AATTACCGTG ATTCTAAGAA TCTCAAAAAAC TCAATTGTAT GTGACTGCCC AAGATGAAGA
CCAACCAGTG CTGCTGAAGG TCAGTTGTCC TTTGTCTCCA ACTTACCTTC ATTTACATCT CATATGTTTG TAAATAAGCC
CAATAGGCAG ACACCTCTAA CAAGGTGACA CTGTCCTCTT TCCTTCCTAC CACAGCCCCC ACCTACCCAC CCCACTCCCA TTGATTCCAG AGGCGTGCCT AGGCAGGATC TATGAGAAAA TATAACAGAG AGTAAGAGGA AAATTACCTT CTTTCTTTTT CCTTTCCCTG CCTGACCTTA TTCACCTCC ATCCCAGAGC ATCCATTTAT TCCATTGATC TITACTGACA TCTATTATCT GACCTACACA ATACTAGACA TTAGGACAAT GTGGCCTGCC TCCAAGAAAC TCAAATAAGC CAACTGAGAT CAGAGAGGGAT TAATCACCTG CCAATGGGCA CAAAGCAACA AGCTGGGAGC CAAGTCCCAA AATGGGGCCT GCTGCTTCCA GTTCCCCTCT AGAATTTATG TGCCTGCCTG TGCTTTTCTA CCTGGATCAA GTGATGTCTA CAGAGTAGGG CAGTAGCTTC ATTCATGAAC TCATTCAACA AGCATTATTC ACTGAGAGCC TTGTATTTTT CAGGCATAGT GCCAACAGCA GTGTGGACAG TGGTGCATCA AAGCCTCTAG TCTCATAGAA CTTAGTCTTC TGGAGGATAT GGAAAACAGA CAACCCAAAC AACCAACAAA AGAGCAAGAT GCTGCAAAAA AAAAAAAAT GAATAGGGTG CTAAGATAGA GAAAAGTGGG AGAGTGCTAT TTAGACAAAG TGGTAAAAAAC AAAGCCCCTT GTGAGATGAG AGCTGCCGAC AGAGGGGGCG GGTCATGGIT GTGGGTTTTT GGGTAGGACA TTCAGAGGAG GGGGCGGGTC GTGGTTGTGG GTTTTTGGGT AGGACATTCA GAGGAGGGGG CGGGTCGTGG TTGTGGGTTTT TTGGGTAGGA CATTCAGAGG AGGGGGCGGG TCGTGGTTGT GGGTTTTTGG GTAGGACATT CAGAGGAGGG GGCGGGTCGT GGTTGTGGGT TTTTGGGACA TTCAGAGGAG TCTGAATGCA CCCAGGCCTA CAACTTCAAG ATGGTAAAGG ACAGCTCCAA GGATCAGAAG AAGCATTCTT GGAACTGGGG CATTTTGAGA AGGAGGAAAA ATATGCAGAG ACTAGTGCTT GCAGAGCTTG CATTTGGATT TCATTTGAGG TACAATGAAA ACCCATTAAT GGGTTTCACA CAGTGCAATG GCCTGACCTC ACTTATATTT CCTAAAATAG AAAACAGATC AGAAGGAAGG CAATAGAGAA GCAGAAAGTC CAATGAGGAG GTTTCACAGC AGTCATGGGG GTGGGGTAAG GAAAAGAAGT GGAAAGAAAC AGACAGAATT GGGTTATATT TTGGAGATAG AACCAACAGA AGGAAGAGGA GAAACAACAT CAACTCTTAT TAATAGACTG GGCCACACAT CTACTAGGCA TGTAATAAAT GCTTGCTGAA TGAACAAATG AATGAAGAGC CTATAGCATC ATGTTACAGC CATAGTCCTA AAGTGGTGTT TCTCATGAAG GCCAAATGCT AAGGGATTGA GCTTCAGTCC TITITCTAAC ATCITGTCT CTAACAGAAT TCTCTTCTTT TCTTCATAGG AGATGCCTGA GATACCCAAA ACCATCACAG
GTAGTGAGAC CAACCTCCTC TTCTTCTGGG AAACTCACGG CACTAAGAAC TATITCACAT CAGTTGCCCA TCCAAACTTG
TTTATTGCCA CAAAGCAAGA CTACTGGGTG TGCTTGGCAG GGGGGCCACC CTCTATCACT GACTTTCAGA TACTGGAAAA
CCAGGCGTAG GTCTGGAGTC TCACTTGTCT CACTTGTCA GTCTTAGACAG TTCAAATGAATA CCATGTACAT GAAGAAGCTA AATCCTTTAC TGTTAGTCAT TTGCTGAGCA TGTACTGAGC CTTGTAATTC TAAATGAATG TTTACACTCT TTGTAAGAGT GGAACCAACA CTAACATATA ATGTTGTTAT TTAAAGAACA CCCTATATTT TGCATAGTAC CAATCATTTT AATTATTATT CTTCATAACA ATTTTAGGAG GACCAGAGCT ACTGACTATG GCTACCAAAA AGACTCTACC CATATTACAG ATGGGCAAAT TAAGGCATAA GAAAACTAAG AAATATGCAC AATAGCAGTT GAAACAAGAA GCCACAGACC TAGGATTTCA TGATTTCATT TCAACTGTTT GCCTTCTGCT TTTAAGTTGC TGATGAACTC TTAATCAAAT AGCATAAGTT TCTGGGACCT CAGTTTTATC ATTTTCAAAA TGGAGGGAAT AATACCTAAG CCTTCCTGCC GCAACAGTTT TTTATGCTAA TCAGGGAGGT CATTTTGGTA AAATACTICT CGAAGCCGAG CCTCAAGATG AAGGCAAAGC ACGAAATGTT ATTTTTTAAT TATTATTTAT ATATGTATTT ATAAATATAT TTAAGATAAT TATAATATAC TATATTTATG GGAACCCCTT CATCCTCTGA GTGTGACCAG GCATCCTCCA CAATAGCAGA CAGTGTTTTC TGGGATAAGT AAGTTTGATT TCATTAATAC AGGGCATTTT GGTCCAAGTT GTGCTTATCC CATAGCCAGG AAACTCTGCA TTCTAGTACT TGGGAGACCT GTAATCATAT AATAAATGTA CATTAATTAC CTTGAGCCAG TAATTGGTCC GATCTTTGAC TCTTTTGCCA TTAAACTTAC CTGGGCATTC TTGTTTCATT CAATTCCACC TGCAATCAAG TCCTACAAGC TAAAATTAGA TGAACCCAAC TTTGACAACC ATGAGACCAC TGTTATCAAA ACTITCTTTT CTGGAATGTA ATCAATGTTT CTTCTAGGTT CTAAAAATTG TGATCAGACC ATAATGTTAC ATTATTATCA ACAATAGTGA TTGATAGAGT GTTATCAGTC ATAACTAAAT AAAGCTTGCA ACAAAATTCT CTGACACATA GTTATTCATT GCCTTAATCA TTATTTTACT GCATGGTAAT TAGGGACAAA TGGTAAATGT TTACATAAAAT AATTGTATTT AGTGTTACTT TATAAAATCA AACCAAGATT GCATGGTAAT TAGGGACAAA TGGTAAATGT TTACATAAAT AATTGTATTT AGTGTACTT TATAAAATCA AACCAAGATT
TTATATTTTT TTCTCCTCTT TGTTAGCTGC CAGTATGCAT AAATGGCATT AAGAATGATA ATATTTCCGG GTTCACTTAA
AGCTCATATT ACACATACAC AAAACATGTG TTCCCATCTT TATACAAACT CACACATACA GAGCTACATT AAAACAACT
AATAGGCCAG GCACGGTGGC TCAGACCTGT AATCCCAGCA CTTTGGGAGG ACCAACCTCT TCGAGGCACA AGGCACAACA
GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCATTGCTCA AGTGTCTGAA GCAGCCATGG CAGAAGTACC TGAGCTCGCC
AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGATGACT TGTTCTTTGA ACCTGATGGC CCTAAACAGA TGAAGTGCTC
CTTCCAGGACCCC CTCAGTTGTT GCCCTCTGGA TGGCGCATC CAGCTACGAC CTTCCGACCCC CACAGACCTT CCAGGAGACTTA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CCAGGAGAAT
GACCTGAGCA CCTTCTTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCTT CGACACATGG GATAACGAGG CTTATGTGCA
CGATGCACCT GTACGATCAC TGAACTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GATGTCTGGT CCATATGAAC
TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC TCCATGTCCT TTGTACAAGG AGAAGAAAGT
AATGACAAAA TACCTGTGGC CTTGGGCCTC AAGGAAAAGA ATCTGTACCT GTCCTGCGTG TTGAAAGATG ATAAGCCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCCAA CTGGTACATC AGCACCTCTC AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAGG CGGCCAGGAT ATAACTGACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCCT GTGCTGAATG TGGACTCAAT CCCTAGGGCT GGCAGAAAGG GAACAGAAAG GTTTTTGAGT ACGGCTATAG CCTGGACTIT CCTGTTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA GGATCTCCTG TCCATCAGCC AGGACAGTCA GCTCTCTCCT TTCAGGGCCA ATCCCCAGCC CTTTTGTTGA GCCAGGCCTC TCTCACCTCT CCTACTCACT TAAAGCCCGC CTGACAGAAA CCACGGCCAC ATTTGGTTCT AAGAAACCCT CTGTCATTCG CTCCCACATT CTGATGAGCA ACCICTICCC TATTTATTTA TITATTTGTT TGTTTGTTTT ATTCATTGGT CTAATTTATT CAAAGGGGGC AAGAAGTAGC AAGAAAGACA GGCTCTGAGG AAGGTGGCAG TTCCTACAAC GGGAGAACCA GTGGTTAATT TGCAAAGTGG ATCCTGTGGA GGCANNCAGA GGAGTCCCCT AGGCCACCCA GACAGGGCTT TTAGCTATCT GCAGGCCAGA CACCAAATTT CAGGAGGGGCT CAGTGTTAGG AATGGATTAT GGCTTATCAA ATTCACAGGA AACTAACATG TTGAACAGCT TTTAGATTTC CTGTGGAAAA

TATAACTTAC TAAAGATGGA GTTCTTGTGA CTGACTCCTG ATATCAAGAT ACTGGGAGCC AAATTAAAAA TCAGAAGGCT GCTTGGAGAG CAAGTCCATG AAATGCTCTT TTTCCCACAG TAGAACCTAT TTCCCTCGTG TCTCAAATAC TTGCACAGAG GCTCACTCCC TTGGATAATG CAGAGCGAGC ACGATACCTG GCACATACTA ATTTGAATAA AATGCTGTCA AATTCCCATT CACCCATTCA AGCAGCAAAC TCTATCTCAC CTGAATGTAC ATGCCAGGCA CTGTGCTAGA CTTGGCTCAA AAAGATTTCA GTTTCCTGGA GGAACCAGGA GGGCAAGGTT TCAACTCAGT GCTATAAGAA GTGTTACAGG CTGGACACGG TGGCTCACGC CTGTAATCCC AACATTTGGG AGGCCGAGGC GGGCAGATCA CAAGGTCAGG AGATCGAGAC CATCCTGGCT AACATGGTGA AACCCTGTCT CTACTAAAAA TACAAAAAAT TAGCCGGGCG TTGGCGGCAG GTGCCTGTAG TCCCAGCTGC TGGGGAGGCT GAGGCAGGAG AATGGTGTGA ACCCGGGAGG CGGAACTTGC AGGGGGCCGA GATCGTGCCA CTGCACTCCA GCCTGGGCGA CAGAGTGAGA CTCTGTCTCA AAAAAAAAA AAAAGTGTTA TGATGCAGAC CTGTCAAAGA GGCAAAGGAG GGTGTTCCTA CACTCCAGGC ACTGITCATA ACCTGGACTC TCATTCATTC TACAAATGGA GGGCTCCCCT GGGCAGATCC CTGGAGCAGG
CACTCCAGGC ACTGITCATA ACCTGGACTC TCATTCATTC TACAAATGGA GGGCTCCCCT GGGCAGATCC CTGGAGCAGG
CACTTTGCTG GTGTCTCGGT TAAAGAGAAA CTGATAACTC TTGGTATTAC CAAGAGATAG AGTCTCAGAT GGATATTCTT
ACAGAAACAA TATTCCCACT TTTCAGAGTT CACCAAAAAA TCATTTTAGG CAGAGCTCAT CTGGCATTGA TCTGGTTCAT
CCATGAGATT GGCTAGGGTA ACAGCACCTG GTCTTGCAGG GTTGTTGTAG CTTATCTCCA GGGTTGCCCC AACTCCGTCA
GGAGCCTGAA CCCTGCATAC CGTATGTTCT CTGCCCCAGC CAAGAAAGGT CAATTTTCTC CTCAGAGGCT CCTGCAATTG ACAGAGAGCT CCCGAGGCAG AGAACAGCAC CCAAGGTAGA GACCCACACC CTCAATACAG ACAGGGAGGG CTATTGGCCC TTCATTGTAC CCATTTATCC ATCTGTAAGT GGGAAGATTC CTAAACTTAA GTACAAAGAA GTGAATGAAG AAAAGTATGT GCATGTATAA ATCTGTGTGT CTTCCACTTT GTCCCACATA TACTAAATTT AAACATTCTT CTAACGTGGG AAAATCCAGT ATTTTAATGT GGACATCAAC TGCACAACGA TTGTCAGGAA AACAATGCAT ATTTGCATGG TGATACATTT GCAAAATGTG CTGCTTATCT AACAGCTGAC ACCCTAAAGG TTAGTGTCAA AGCCTCTGCT CCAGCTCTCC TAGCCAATAC ATTGCTAGTT GGGGTTTGGT TTAGCAAATG CTTTTCTCTA GACCCAAAGG ACTTCTCTTT CACACATTCA TTCATTTACT CAGAGATCAT TTCTTTGCAT GACTGCCATG CACTGGATGC TGAGAGAAAT CACACATGAA CGTAGCCGTC ATGGGGAAGT CACTCATTTT CTCCTTTTTA CACAGGTGTC TGAAGCAGCC ATGGCAGAAG TACCTGAGCT CGCCAGTGAA ATGATGGCTT ATTACAGGTC AGTGGAGACCG CTGAGACCAG TAACATGAGC AGGTCTCCTC TTTCAAGAGT AGAGTGTTAT CTGTGCTTGG AGACCAGATT TTTCCCCTAA ATTGCCTCTT TCAGTGGCAA ACAGGGTGCC AAGTAAATCT GATTTAAAGA CTACTTTCCC ATTACAAGTC CCTCCAGCCT TGGGACCTGG AGGCTATCCA GATGTGTTGT TGCAAGGGCT TCCTGCAGAG GCAAATGGGG AGAAAAGATT CCAAGCCCAC AATACAAGGA ATCCCTTTGC AAAGTGTGGC TTGGAGGGGGA AGGGAGAGCT CAGATTTTAG CTGACTCTGC
TGGGCTAGAG GTTAGGCCTC AAGATCCAAC AGGGAGCACC AGGGTGCCCA CCTGCCAGGC CTAGAATCTG CCTTCTGGAC TGTTCTGCGC ATATCACTGT GAAACTTGCC AGGTGTTTCA GGCAGCTTTG AGAGGCAGC CTAGAATCTG CCTTCTGGAC
TGTTCTGCGC ATATCACTGT GAAACTTGCC AGGTGTTTCA GGCAGCTTTG AGAGGCAGGC TGTTTGCAGT TTCTTATTACA
CAGTCAAGTC TTGTACACAG GGAAGGAAAA ATAAACCTGT TTAGAAGACA TAATTGAGAC ATGTCCCTGT TTTTATTACA
GTGGCAATGA GGATGACTTG TTCTTTGAAG CTGATGGCCC TAAACAGATG AAGGTAAGAC TATGGGTTTA ACTCCCAACC
CAAGGAAGGG CTCTAACACA GGGAAAGCTC AAAGAAGGGA GTTCTGGGCC ACTTTGATGC CATGGTATTT TGTTTTAGAA
AGACTTTAAC CTCTTCCAGT GAGACACAGG CTGCACCACT TGCTGACCTG GCCACTTTGGT CATCATATCA CCACAGTCAC
TCACTAACCTA GGTGGTGGT GGCCACACTT GGTGGTGACA GGGGGAGGAGT AGTGATAATG TTCCCATTTC AAGTAGAACTC GACAACCAAG TCTTCAACAT AAATTTGATT ATCCTTTTAA GAGATGGATT CAGCCTATGC CAATCACTTG AGTTAAACTC TGAAACCAAG AGATGATCTT GAGAACTAAC ATATGTCTAC CCCTTTTGAG TAGAATAGTT TTTTGCTACC TGGGGTGAAG CTTATAACAA CAAGACATAG ATGATATAAA CAAAAAGATG AATTGAGACT TGAAAGAAAA CCATTCACTT GCTGTTTGAC CTTGACAAGT CATTTTACCC GCTTTGGACC TCATCTGAAA AATAAAGGGC TGAGCTGGAT GATCTCTGAG ATTCCAGCAT CCTGCAACCT CCAGTTCTGA AATATTTTCA GTTGTAGCTA AGGGCATTTG GGCAGCAAAT GGTCATTTTT CAGACTCATC CTTACAAAGA GCCATGTTAT ATTCCTGCTG TCCCTTCTGT TTTATATGAT GCTCAGTAGC CTTCCTAGGT GCCCAGCCAT CAGCCTAGCT AGGTCAGTTG TGCAGGTTGG AGGCAGCACATTTTCTTGG CTTTATTTTA TTCCAGTTTG TGAAGCCTC CCCTAGCCTC ATAATCCAGT CCTCAATCTT GTTAAAAACA TATTTCTTTTA GAAGTTTTAA GACTGGCATA ACTTCTTGGC TGCAGCTGT GGAGGAGCCC ATTGGCTTGT CTGCCTGGCC TTTTGCCCCCC ATTGCCTCTT CCAGCAGCTT GGCTCTGCTC CAGGCAGGAA ATTCTCTCCT GCTCAACTTT CTTTTGTGCA CTTACAGGTC TCTTTAACTG TCTTTCAAGC CTTTGAACCA TTATCAGCCT TAAGGCAACC TCAGTGAAGC CITAATACGG AGCTTCTCTG AATAAGAGGA AAGTGGTAAC ATTTCACAAA AAGTACTCTC ACAGGATTTG CAGAATGCCT ATGAGACAGT GTTATGAAAA AGGAAAAAAA AGAACAGTGT AGAAAAATTG AATACTTGCT GAGTGAGCAT AGGTGAATGG AAAATGTTAT GGTCATCTGC ATGAAAAAGC AAATCATAGT GTGACAGCAT AAGATGCTGG TTCCCTGCCC ACAGACCTTC CAGGAGAATG ACCTGAGGCA CTTCTTTCC TTCATCTTTG AAGAAGGTAG TTAGCCAAGA GCAGGCAGTA GATCTCCACT TGTGTCCTCT TGGAAGTCAT CAAGCCCCAG CCAACTCAAT TCCCCCAGAG CCAAAGCCCT TTAAAGGTAG AAGACCCAGC GGGAGACCAA AACAAAGAAG GCTGGAAACC AAAGCAATCA TCTCTTTAGT GGAAACTATT CTTAAAGAAG ATCTTGATGG CFACTGACAT TTGCAACTCC CTCACTCTTT CTCAGGGGCC TTTCACTTAC ATTGTCACCA GAGGTTCGTA ACCTCCCTGT GGGCTAGTGT TATGACCATC ACCATTTTAC CTAAGTAGCT CTGTTGCTCG GCCACAGTGA GCAGTAATAG ACCTGAAGCT GGAACCCATG TCTAATAGTG TCAGGTCCAG TGTTCTTAGC CACCCCACTC CCAGCTTCAT CCCTACTGGT GTTGTCATCA GACTTTGACC GTATATGCTC AGGTGCCAG TGTATTGCCA CCTCGCCTCA CGAGGACCAT CTTCTTCGAC CCTCGCCTCA CGAGGCCTGC CCTCTGGAT TTATACCTAA ACAACATGTG CTCCACCATT CAGAACCTAT CTTCTTCGAC ACATGGGATA ACGAGGCTTA TGTGCACGAT GCACCTGTAC GATCACTGAA CTGCACGCTC CGGGACTCAC AGCAAAAAAG CTTGGTGATG TCTGGTCCAT ATGAACTGAA AGCTCTCCAC CTCCAGGGAC AGGATATGGA GCAACAAGGT AAATGGAAAC ATCCTGGTTT CCCTGCCTGG CCTCCTGGCA GCTTGCTAAT TCTCCATGTT TTAAACAAAG TAGAAAGTTA ATTTAAGGCA AATGATCAAC ACAAGTGAAA AAAAATATTA AAAAGGAATA TACAAACTTT GGTCCTAGAA ATGGCACATT TGATTGCACT GGCCAGTGCA TTTGTTAACA GGAGTGTGAC CCTGAGAAAT TAGACGGCTC AAGCACTCCC AGGACCATGT CCACCCAAGT

CTCTTGGGCA TAGTGCAGTG TCAATTCTTC CACAATATGG GGTCATTTGA TGGACATGGC CTAACTGCCT GTGGGTTCTC TCTTCCTGTT GTTGAGGCTG AAACAAGAGT GCTGGAGCGA TAATGTGTCC ATCCCCCTC CCAGTCTTCC CCCCTTGCCC CAACATCCGT CCCACCCAAT GCCAGGTGGT TCCTTGTAGG GAAATTTTAC CGCCCAGCAG GAACTTATAT CTCTCCGCTG TAAAATGTAG ACCCTCTTTC ATTCTCCGTT CCTACTGCTA TGAGGCTCTG AGAAACCCTC AGGCCTTTGA GGGGAAACCC TAAATCAACA AAATGACCT GCTATTGTCT GTGAGAAGTC AAGTTATCCT GTGTCTTAGG CCAAGGAACC TCACTGTGGG
TTCCCACAGA GGCTACCAAT TACATGTATC CTACTCTCGG GGCTAGGGGT TGGGGTGACC CTGCATGCTG TGTCCCTAAC CACAAGACCC CCTTCTTTCT TCAGTGGTGT TCTCCATGTC CTTTGTACAA GGAGAAGAAA GTAATGACAA AATACCTGTG GCCTTGGGCC TCAAGGAAAA GAATCTGTAC CTGTCCTGCG TGTTGAAAGA TGATAAGCCC ACTCTACAGC TGGAGGTAAG GCCTTGGGCC TCAAGGAAAA GAATCTGTAC CTGTCCTGCG TGTTGAAAGA TGATAAGCCC ACTCTACAGC TGGAGGTAAG
TGAATGCTAT GGAATGAAGC CCTTCTCAGC CTCCTGCTAC CACTTATTCC CAGACAATTC ACCTTCTCCC CGCCCCCATC
CCTAGGAAAA GCTGGGAACA GGTCTATTTG ACAGTTTTG CATTAATGTA AATAAATTTA ACATAATTTT TAACTGCGTG
CAACCTTCAA TCCTGCTGCA GAAAATTAAA TCATTTTGCC GATGTTATTA TGTCCTACCA TAGTTACAAC CCCAACAGAT
TATATATTGT TAGGGCTGCT CTCATTTGAT AGACACCTTG GGAAATAGAT GACTTAAAGG GTCCCATTAT CACGTCCACT
CCACTCCCAA AATCACCACC ACTATCACCT CCAGCTTTCT CAGCAAAAGC TTCATTTCCA AGTTGATGC ATTCTAGGAC
CATAAGGAAA AATACAATAA AAAGCCCCTG GAAACTAGGT ACTTCAAGAA GCTCTAGCTT AATTTTCACC CCCCCAAAAA
AAAAAAATTC TCACCTACAT TATGCTCCTC AGCATTTGGC ACTAAAGTTTT AGAAAAAAAAA
CACCAAAAG TGGGGGCCCA GTTACAACTC AGGAGTCTGG CTCCTGATCA TGTGACCTGC TCGTCAGTTT CCTTTCTGGC
CAACCCAAAAA AAAATCTTTC CCATAGGCAT CTTTCTTCCCT TGCCCCACAA AAAATCTTCT TCCTCTTTCG CTGCAGAGTG CAACCCAAAG AACATCTITC CCATAGGCAT CTTTGTCCCT TGCCCCACAA AAATTCTTCT TTCTCTTTCG CTGCAGAGTG
TAGATCCCAA AAATTACCCA AAGAAGAAGA TGGAAAAGCG ATTTGTCTTC AACAAGATAG AAATCAATAA CAAGCTGGAA 25 TTTGAGTCTG CCCAGTTCCC CAACTGGTAC ATCAGCACCT CTCAAGCAGA AAACATGCCC GTCTTCCTGG GAGGGACCAA AGGCGGCCAG GATATAACTG ACTTCACCAT GCAATTTGTG TCTTCCTAAA GAGAGCTGTA CCCAGAGAGT CCTGTGCTGA ATGTGGACTC AATCCCTAGG GCTGGCAGAA AGGGAACAGA AAGGTTTTTG AGTACGGCTA TAGCCTGGAC TTTCCTGTTG TCTACACCAA TGCCCAACTG CCTGCCTTAG GGTAGTGCTA AGAGGATCTC CTGTCCATCA GCCAGGACAG TCAGCTCTCT CCTTTCAGGG CCAATCCCCA GCCCTTTTGT TGAGCCAGGC CTCTCTCACC TCTCCTACTC ACTTAAAGCC CGCCTGACAG AAACCACGGC CACATTTGGT TCTAAGAAAC CCTCTGTCAT TCGCTCCCAC ATTCTGATGA GCAACCGCTT CCCTATTTAT TTATTTATTT GTTTGTTTGT TTTGATTCAT TGGTCTAATT TATTCAAAGG GGGCAAGAAG TAGCAGTGTC TGTAAAAGAG TIATTIATITI GITTGTTTGT TITGATTCAT TGGTCTAATT TATTCAAAGG GGGCAAGAAG TAGCAGTGTC TGTAAAAGAG CTAGATTTTT AATAGCTATG GAATCAATTC AATTTGGACT GGTGTGCTCT CTTTAAATCA AGTCCTTTAA TTAAAGAGG CAAATATATAA GCTCAGATTA TTAAATGGG AATATTTATA AATGAGCAAA TATCATACTG TTCAATGGT CTGAAATAAA CTTCACTGAA GAAAAAAAA AAAGGGTCTC TCCTGATCAT TGACTGTCTG GATTGACACT GACAGTAAGC AAACAGGCTG TGAGAGTTCT TGGGACTAAG CCCACTCCTC ATTGCTGAGT GCTGCAAGTA CCTAGAAATA TCCTTGGCCA CCGAAGACTA TCCTCCTCAC CCATCCCCTT TATTTCGTTG TTCAACAGAA GGATATTCAG TGCACCATCTG GAACAGGATC AGCTGAAGCA CTGCAGGAGG TCAGGACTGG TAGTAACAGCA CAACTCACAA GTCCCTCCTC AGATAGGAGA GGCAGCTAGT TATAAGCAGA ACAAGGTAAC ATGACAAGTA GAGTAAGATA GAAGAACGAA GAGGAGTAGC CAGGAAGGAG GGAGGAGAAC GACATAAGAA TCAAGCCTAA AGGGATAAAC AGAAGATTC CACACATGGG CTGGGCCAAT TGGGTGTCGG TTACGCCTGT AATCCCAGCA CTTTGGGTGG CAGGGGCAGA AAGATCGCTT GAGCCCAGGA GTTCAAGACC AGCCTGGGCA ACATAGTGAG ACTCCCATCT CTACAAAAA TAAATAAATA AATAAAACAA TCAGCCAGGC ATGCTGGCAT GCACCTGTAG TCCTAGCTAC TTGGGAAGCT GACACTGGAG GATTGCTTGA GCCCAGAAGT TCAAGACTGC AGTGAGCTTA TCCGTTGACC TGCAGGTCGA C ACAAACCTTT TCGAGGCAAA AGGCAAAAAA GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCAATGCTCA AGTGTCTGAA GCAGCCATGG CAGAAGTACC TAAGCTCGCC AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGATGACT TGTTCTTTGA AGCTGATGGC CCTAAACAGA TGAAGTGCTC CTTCCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA TCTCCGACCA CCACTACAGE AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CCAGGAGAAT GACCTGAGCA CCTTCTTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCTT CGACACATGG GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAACTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GATGTCTGGT CCATATGAAC TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC TCCATGTCCT TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTTGGGCCTC AAGGAAAAGA ATCTGTACCT GTCCTGCGTG 50 TTGAAAGATG ATAAGCCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCCAA CTGGTACATC AGCACCTCTC
AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAGG CGGCCAGGAT ATAACTGACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCCT GTGCTGAATG TGGACTCAAT CCCTAGGGCT GCCAGAAAGG GAACAGAAAG GTTTTTGAGT ACGCCTATAG CCTGGACTTT CCTGTTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA GGATCTCCTG TCCATCAGCC AGGACAGTCA GCTCTCTCCT TTCAGGGGCCA ATCCCAGCCC TTTTGTTGAG CCAGGCCTCT CTCACCCTCT CTACTCACTT AAAGCCCGCC TGACAGAAAC CAGGCCACAT TTTGGTTCTA AGAAACCCTC CTCTCACTT CGCTCCCACA TTCTGATGAG CAACCGCTTC CCTATTTATT TATTTATTTG TTTGTTTGTT TTGATTCATT ATTCCAAAGGG GCCAAGAAGT AGCAGTGTCT GTAAAAGACC CTAGTTTTTA ATAGCTATGG AATCAATTCA ATTTGGATGA GTGTGCTCTC TTTAAATCAA GTCCTTTAAT TAAGACTGAA AATAATAAG CTCAGGATTAT TAAATGGGA ATATTATAA
ATGAGCAAAT ATCATACTGT TCAATGGTTC TCAAATAAAC TTCACT CTGGCAGGAG TAGCAGCTGC CCCTTGGCGC
GACTGCTGGA GCCGCGAACT AGAGAAACAC AGACACGCCT CATAGAGCAA CGGCGTCTCT CGGAGCGTGG AGCCCGCCAA
GCTCGAGCTG AGCTTTCGCT TGCCGTCCAC CACTGCCCAC ACTGTCGTTT GCTGCCATCG CAGACCTGCT GCTGACTTCC ATCCCTCTGG ATCCGGCAAG GGCCTGCGAT TTTGACAATG TCAAGATTTA CCGTATATCC CTGTTTGTTT GGATACACCA GTGACGTCCA CTTCTAGAAG ACAAAGTTAT ATTACTTAAA CAACCAAAGA TATGAAACTA TCCATGAAGA ACAATATTAT CAATACACAG CAGTCTTTTG TAACCATGCC CAATGTGATT GTACCAGATA TTGAAAAGGA AATACGAAGG ATGGAAAATG GAGCATGCAG CTCCTTTTCT GAGGATGATG ACAGTGCCTC TACATCTGAA GAATCAGAGA ATGAAAACCC TCATGCAAGG GGTTCCTTTA GTTATAAGTC ACTCAGAAAG GGAGGACCAT CACAGAGGGA GCAGTACCTG CCTGGTGCCA TTGCCATTTT TAATGTGAAC AACAGCGACA ATAAGGACCA GGAACCAGAA GAAAAAAAGA AAAAGAAAA AGAAAAGAAG AGCAAGTCAG ATGATAAAAA CGAAAATAAA AACGACCCAA AGAAGAAGAT GGAAAAGCGA ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGTGA AAATGAAGAA GACAGTTCCT CCATTGATCA TCTGTCTCTG AATCAGAAAT CCTTCTATCA TGTAAGCTAT GGCCCACTCC ATGAAGGCTG CATGGATCAA TCTGTGTCTC TGAGTATCTC TGAAACCTCT AAAACATCCA AGCTTACCTT CAAGGAGAGC ATGGTGGTAG TAGCAACCAA CGGGAAGGTT CTGAAGAAGA GACGGTTGAG TTTAAGCCAA TCCATCACTG ATGATGACCT GGAGGCCATC GCCAATGACT CAGAGGAAGA AATCATCAAG CCTAGGTCAG CACCTTTTAG

CTTCCTGAGC AATGTGAAAT ACAACTTTAT GAGGATCATC AAATACGAAT TCATCCTGAA TGACGCCCTC AATCAAAGTA TAATTCGAGC CAATGATCAG TACCTCACGG CTGCTGCATT ACATAATCTG GATGAAGCAG TGAAATTTGA CATGGGTGCT TATAAGTCAT CAAAGGATGA TGCTAAAAATT ACCGTGATTC TAAGAATCTC AAAAACTCAA TTGTATGTGA CTGCCCAAGA TGAAGACCAA CCAGTGCTGC TGAAGGAGAT GCCTGAGATA CCCAAAACCA TCACAGGTAG TGAGACCAAC CTCCTCTTCT TCTGGGAAAC TCACGGCACT AAGAACTATT TCACATCAGT TGCCCATCCA AACTTGTTTA TTGCCACAAA GCAAGACTAC TGGGTGTGCT TGGCAGGGGG GCCACCCTCT ATCACTGACT TTCAGATACT GGAAAACCAG GCGTAGGTCT GGAGTCTCAC TTGTCTCACT TGTGCAGTGT TGACAGTTCA TATGTACCAT GTACATGAAG AAGCTAAATC CTTTACTGTT AGTCATTTGC TGAGCATGTA CTGAGCCTTG TAATTCTAAA TGAATGTTTA CACTCTTTGT AAGAGTGGAA CCAACACTAA CATATAATGT
TGTTATTTAA AGAACACCCT ATATTTTGCA TAGTACCAAT CATTTTAATT ATTATTCTTC ATAACAATTT TAGGAGGACC AGAGCTACTG ACTATGGCTA CCAAAAAGAC TCTACCCATA TTACAGATGG GCAAATTAAG GCATAAGAAA ACTAAGAAAT ATGCACAATA GCAGTTGAAA CAAGAAGCCA CAGACCTAGG ATTTCATGAT TTCATTTCAA CTGTTTGCCT TCTGCTTTTA
AGTTGCTGAT GAACTCTAA TCAAATAGCA TAAGTTTCTG GGACCTCAGT TTTATCATTT TCAAAATGGA GGGAATAATA
CCTAAGCCTT CCTGCCGCAA CAGTTTTTTA TGCTAATCAG GGAGGTCATT TTGGTAAAAT ACTTCTCGAA GCCGAGCCTC TTGCCATTAA ACTTACCTGG GCATTCTTGT TTCATTCAAT TCCACCTGCA ATCAAGTCCT ACAAGCTAAA ATTAGATGAA CTCAACTITG ACAACCATAG ACCACTGTTA TCAAAACTTT CTTTTCTGGA ATGTAATCAA TGTTTCTTCT AGGTTCTAAA AATTGTGATC AGACCATAAT GTTACATTAT TATCAACAAT AGTGATTGAT AGAGTGTTAT CAGTCATAAC TAAATAAAGC TTGCAAGTGA GGGAGTCATT TCATTGGCGT TTGAGTCAGC AAAGAAGTCA AG AGCTGCCAGC CAGAGAGGGA GTCATTTCAT TGGCGTTTGA GTCAGCAAAG AAGTCAAGAT GGCCAAAGTT CCAGACATGT TTGAAGACCT GAAGAACTGT TACAGTGAAA ATGAAGAAGA CAGTTCCTCC ATTGATCATC TGTCTCTGAA TCAGAAATCC TTCTATCATG TAAGCTATGG CCCACTCCAT GAAGGCTGCA TGGATCAATC TGTGTCTCTG AGTATCTCTG AAACCTCTAA AACATCCAAG CTTACCTTCA AGGAGAGCAT GGTGGTAGTA GCAACCAACG GGAAGGTTCT GAAGAAGAGA CGGTTGAGTT TAAGCCAATC CATCACTGAT GATGACCTGG AGGCCATCGC CAATGACTCA GAGGAAGAAA TCATCAAGCC TAGGTCATCA CCTTTTAGCT TCCTGAGCAA TGTGAAATAC AACTITATGA GGATCATCAA ATACGAATTC ATCCTGAATG ACGCCCTCAA TCAAAGTATA ATTCGAGCCA ATGATCAGTA CCTCACGGCT GCTGCATTAC ATAATCTGGA TGAAGCAGTG AAATTTGACA TGGGTGCTTA TAAGTCATCA AAGGATGATG CTAAAATTAC CGTGATTCTA AGAATCTCAA AAACTCAATT GTATGTGACT GCCCAAGATG AAGACCAACC AGTGCTGCTG
AAGGAGATGC CTGAGATACC CAAAACCATC ACAGGTAGTG AGACCAACCT CCTCTTCTTC TGGGAAACTC ACGGCACTAA AAGACTATTC ACATCAGTTG CCAAACCATC ACAGGTAGTG AGACCAACCT CCTCTTCTTC TGGGAAACTC ACAGGCACTAA
GAACTATTTC ACATCAGTTG CCCATCCAAA CTTGTTTATT GCCACAAAGC AAGACTACTG GGTGTGCTTG GCAGGGGGGC
CACCCTCTAT CACTGACTTT CAGATACTGG AAAACCAGGC GTAGGTCTGG AGTCTCACTT GTCTCACTTG TGCAGTGTTG
ACAGTTCATA TGTACCATGT ACATGAAGAA GCTAAATCCT TTACTGTTAG TCATTTGCTG AGCATGTACT GAGCCTTGTA
ATTCTAAATG AATGTTTACA CTCTTTGTAA GAGTGGAACC AACACTAACA TATAATGTTG TTATTTAAAG AACACCCTAT
ATTTTGCATA GTACCAATCA TTTTAATTAT TATTCTTCAT AACAATTTTA GGAGGACCAG AGCTACTGAC TATGGCTACC
AAAAAGACTC TACCCATATT ACAGATGGGC AATTAAAGGC ATAAGAAAAAC TAAGAAATTAT GCACAAATAGC AGTCGAAACA AGAAGCCACA GACCTAGGAT TICATGATTIT CATTICAACT GITIGCCTIC TGCTITTAAG TIGCTGATGA ACTCTTAATC
AAATAGCATA AGTTICTGGG ACCTCAGTIT TATCATTTIC AAAATGGAGG GAATAATACC TAAGCCTICC TGCCGCAACA
GTTITTTATG CTAATCAGGG AGGTCATTIT GGTAAAATAC TICTCGAAGC CGAGCCTCAA GATGAAGGCA AAGCACGAAA
TGTTATTTIT TAATTATTAT TIATATATGT ATTITATAAAT ATATTTAAGA TAATTATAAT ATACTATATT TATGGGAACC
CCTTCATCCT CTGAGTGTGA CCAGGCATCC TCCACAATAG CAGACAGTGT TTTCTGGGAT AAGTAAGTIT GATTTCATTA ATACAGGGCA TITITGGTCCA AGITGTGCTT ATCCCATAGC CAGGAAACTC TGCATTCTAG TACTTGGGAG ACCTGTAATC ATATAATAAA TGTACATTAA TTACCTTGAG CCAGTAATTG GTCCGATCTT TGACTCTTTT GCCATTAAAC TTACCTGGGC ATTCTTGTTT CATTCAATTC CACCTGCAAT CAAGTCCTAC AAGCTAAAAAT TAGATGAACT CAACTTTGAC AACCATGAGA CCACTGTTAT CAAAACTTTC TTTTCTGGAA TGTAATCAAT GTTTCTTCTA GGTTCTAAAA ATTGTGATCA GACCATAATG TTACATTATT ATCAACAATA GTGATTGATA GAGTGTTATC AGTCATAACT AAATAAAGCT TGCAACAAAA TTCTCTG-3' (FRAG. NO:_)(SEQ ID NO:11886) 5'-AAGCTTCTAC CCTAGTCTGG TGCTACACTT ACATTGCTTA CATCCAAGTG TGGTTATTTC TGTGGCTCCT GTTATAACTA TTATAGCACC AGGTCTATGA CCAGGAGAAT TAGACTGGCA TTAAATCAGA ATAAGAGATT TTGCACCTGC AATAGACCTT ATGACACCTA ACCAACCCCA TTATTTACAA TTAAACAGGA ACAGAGGGAA TACTITATCC AACTCACACA AGCTGTTTTC
CTCCCAGATC CATGCTTTTT TGCGTTTATT ATTTTTTAGA GATGGGGGCT TCACTATGTT GCCCACACTG GACTAAAACT
CTGGGCCTCA AGTGATTGTC CTGCCTCAGC CTCCTGAATA GCTGGGACTA CAGGGGCATG CCATCACACC TAGTTCATTT
CCTCTATTTA AAATATACAT GGCTTAAACT CCAACTGGGA ACCCAAAACA TTCATTTGCT AAGAGTCTGG TGTTCTACCA GGCTCATTIT CCCTCAAAAG TIGCCAGGAG CTGCCAAGTA TICTGCCAAT TCACCCTGGA GCACAATCAA CAAATTCAGC CAGAACACAA CTACAGCTAC TATTAGAACT ATTATTATTA ATAAATTCCT CTCCAAATCT AGCCCCTTGA CTTCGGATTT CACGATTTCT CCCTTCCTCC TAGAAACTTG ATAAGTTTCC CGCGCTTCCC TTTTTCTAAG ACTACATGTT TGTCATCTTA TAAAGCAAAG GGGTGAATAA ATGAACCAAA TCAATAACTT CTGGAATATC TGCAAACAAC AATAATATCA GCTATGCCAT CTITCACTAT TITAGCCAGT ATCGAGTTGA ATGAACATAG AAAAATACAA AACTGAATTC TTCCCTGTAA ATTCCCCGTT CTITICACTAT TITAGCCAGT ATGAGITGA ATGAACATAG AAAAATACAA AACTGAATTC TICCCTGTAA ATTCCCCGIT
TIGACGACGC ACTIGITAGCC ACGTAGCCAC GCCTACITAA GACAATTACA AAAGGCGAAG AAGACTGACT CAGGCTAAG
CTGCCAGCCA GAGAGGGAGT CATITCATTG GCGTTTGAGT CAGCAAAAGGT ATTGCCTCA CATCTCTGGC TATTAAAGTA
TITICTGTTG TIGTITTTCT CTTTGGCTGT TITCTCTCAC ATTGCCTTCT CTAAAGCTAC AGTCCTCCCT TICTTTCTT
GTCCCTCCCT GGTTTGGTAT GTGACCTAGA ATTACAGTCA GATTTCAGAA AATGATTCTC TCATTTTGCT GATAAGGACT
GATTCGTTTT ACTGAGGGAC GGCAGAACTA GTTTCCTATG AGGGCATGGG TGAATACAAC TGAGGCTTCT CATCGGAGGG
AATCTCTACT ATCCAAAAATT ATTAGGAGAA AATTGAAAAAT TTCCAACTCT GTCTCTCTCT TACCTCTGTG TAAGGCAAAT
ACCTTATTCT TGTGGTGTTT TTGTAACCTC TTCAAAACAT TCAAAAGA ATTGCAAAGG AGACAGGTAC ATAGCAAACA
CACATAAGGA ATACCAACAT AAATAAAACA TCTCAAAAGA AGTTTACAAAG AGACAGGTAC ATAGCAAACA
AATTCAAAGG AGCTAGAAGA TGCAAAAGAA TGCCAAAAGAG
ATTCCAAAAG ATTTCAAAAGA TTTCCAACAGT
TTCCAACAAG TTTTCAAGAA GTTTTCAAGAA AATTCAAAGG AGCTAGAAGA TGGAGAAAAT GCTGAATGTG GACTAAGTCA TTCAACAAAG TTTTCAGGAA GCACAAAGAG GAGGGGCTCC CCTCACAGAT ATCTGGATTA GAGGCTGGCT GAGCTGATGG TGGCTGGTGT TCTCTGTTGC AGAAGTCAAG ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGGTA AGGAATAAGA TTTATCTCTT GTGATTTAAT

GAGGGTTTCA AGGCTCACCA GAATCCAGCT AGGCATAACA GTGGCCAGCA TGGGGGCAGG CCGGCAGAGG TTGTAGAGAT GTGTACTAGT CCTGAAGTCA GAGCAGGTTC AGAGAAGACC CAGAAAAACT AAGCATTCAG CATGTTAAAC TGAGATTACA TTGGCAGGGA GACCGCCATT TTAGAAAAAT TATTTTTGAG GTCTGCTGAG CCCTACATGA ATATCAGCAT CAACTTAGAC ACAGCCTCTG TTGAGATCAC ATGCCCTGAT ATAAGAATGG GTTTTACTGG TCCATTCTCA GGAAAACTTG ATCTCATTCA GGAACAGGAA ATGGCTCCAC AGCAAGCTGG GCATGTGAAC TCACATATGC AGGCAAATCT CACTCAGATG TAGAAGAAAG GTAAATGAAC ACAAAGATAA AATTACGGAA CATATTAAAC TAACATGATG TTTCCATTAT CTGTAGTAAA TACTAACACA AACTAGGCTG TCAAAATTTT GCCTGGATAT TTTACTAAGT ATAAATTATG AAATCTGTTT TAGTGAATAC ATGAAAGTAA GCTGAGAGAG AGGAAGCAAG CCAGCTGAAA GTGAGAAGTC TACAGCCACT CATCAATCTG TGTTATTGTG TTTGGAGACC ACAAATAGAC ACTATAAGTA CTGCCTAGTA TGTCTTCAGT ACTGGCTTTA AAAGCTGTCC CCAAAGGAGT ATTTCTAAAA TATTTTGAGC ATTGTTAAGC AGATTTTTAA CCTCCTGAGA GGGAACTAAT TGGAAAGCTA CCACTCACTA CAATCATTGT TAACCTATTT AGTTACAACA TCTCATTTTT GAGCATGCAA ATAAATGAAA AAGTCTTCCT AAAAAAAATCA TCTTTTTATC CTGGAAGGAG GAAGGAAGGT GAGACAAAAG GGAGAGAGGG AGGGAAGCCT AATGAAACAC CAGTTACCTA AGACCAGAAT GGAGATCCTC CTCACTACCT CTGTTGAATA CAGCACCTAC TGAAAGAACT TTCATTCCCT GACCATGAAC AGCCTCTCAG GRAGATACH CHACHACH CHAINATH CAGCACHA HARACHARAT HATTCATICAT GACCATORAC AGCCHUCAG AGCTICAG CTTCTGTTTT CCTTCCTCAC AGAAATCCTT CTATCATGTA AGCTATGGCC CACTCCATGA AGGCTGCATG GATCAATCTG TGTCTCTGAG TATCTCTGAA ACCTCTAAAA CATCCAAGCT TACCTTCAAG GAGAGCATGG TGGTAGTAGC AACCAACGGG AAGGTTCTGA AGAAGAGCA CAATAATATC TTTCTTTTTAC AGTTTTAAGC AAGTAGGGAC AGTAGAATTT AGGGGAAAAT TAAAACGTGGA GTCAGAATAA CAAGAAGACA ACCAAGCATT AGTCTGCTCAC AGCACATTATT TCTTAGCCAT ATTGTAAACGT CTCCAGGAGG GAGAAATGAG CAGTGGCCTG AATCGAGAAT ACTTGCTCAC AGCCATTATT TCTTAGCCAT ATTGTAAAGG TCGTGTGGCT TTTAGCCTT CAGGAGAAAG CAGTAATAAG ACCACTTACG AGCTATGTTC CTCTCATACT AACTATGCCT CCTTGGTCAT GITACATAAT CTTTTCGTGA TTCAGTTTCC TCTACTGTAA AATGGAGATA ATCAGAATCC CCCACTCATT GGATTGTTGT AAAGATTAAG AGTCTCAGGC TTTACAGACT GAGCTAGCTG GGCCCTCCTG ACTGTTATAA AGATTAAATG 35 CACCTIGGCC ICCCAAAGIG CCGGGATIAC AGGCGIGAGC CACCGGCCC GGCCIATIAI IATIATIATI ACTACTACTA
CTACCTATAT GAATACTACC AGCAATACTA ATTTATTAAT GACTGGATTA TGICTAAACC TCACAAGAAT CCTACCTTCT
CATTTTACAT AAAAGGAAAC TAAGCTCATT GAGATAGGTA AACTGCCCAA TGGCATACAT CTGTAAGTGG GAGAGCCTCA
AATCTAATTC AGTTCTACCT GAGTAAAAAA ATCATGGTTT CTCCTCCATC CCTTTACTGT ACAAGCCTCC ACATGAACTA
TAAACCCAAT ATTCCTGTTT TTAAGATAAT ACCTAAGCAA TAACGCATGT TCACCTAGAA GGTTTTAAAA TGTAACAAAA
TATAAGAAAA TAAAAATCAC TCATATCGTC AGTGAGAGTT TACTACTGCC AGCACTATGG TATGTTTCCT TAAAATCTTT
GCTATACACA TACCTACATG TGAACAAATA TGTCTAACAT CAAGACCACA CTATTTACAA CTTTATATCC AGCTTTTCTT ACTTAGCAAT GTATTGAGGA CATTTAGAG TGCCCGTTTT TCACCATTAT AAGCAATGCA ACAATGACA TCTGTATAAA
TAAATATTCA TTTCTCTCAC CCTTTATTTC CTTAGAATAT ATTCCTAGAA GTAGAAATTC CCAGAGCCAT GAGGATTTGT
GACGCTATTG ATATGTGCCA CTTTGCACTC TCTGTGACAT ATATAATTAT TTTTAATGCA TTCATTTTT TCTCAGAGTG
CATTCGTTTG AAAACATAGA CGGGAAATAC TGGTAGTCTT CCTTGTCAGT TAGAAACACC CAAACAATGA AAAATGAAAA CATTCGTTTG AAAACATAGA CGGGAAATAC TGGTAGTCT CCTTGTCAGT TAGAAACACU CAAACAATGA AAAATGAAAAA
AGTTGCACAA ATAGTCTCTA AAAACAATGA AACTATTGCC TGAGGAATTG AAGTTTAAAAA AGAAGCACAT AAGCAACAAC
AAGGATAATC CTAGAAAACC AGTTCTGCTG ACTGGGTGAT TTCACTTCTC TTTTGCTTCCT CATCTGGATT GGAATATCCC
TAATACCCCC TCCAGAACTA TTTTCCCTGT TTGTACTAGA CTGTGTATAT CATCTGTGTT TGTACATAGA CATTAATCCC
CACTTGTGAT CATGGTTTTA GAAATCATCA AGCCTAGGTC ATCACCTTTT AGCTTCCTGA GCAATGTGAA ATACAACTTT
ATGAGGATCA TCAAATACGA ATTCATCCTG AATGACGCCC TCAATCAAAG TATAATTCGA GCCAATGATC AGTACCTCAC
GGCTGCTGCA TTACAATAATC TGGATGAAGC AGGTACATTA AAAATGGCACC AGACATTTCT GTGTTCCACA ATTCTTCCACA AGAAGTTTCC TATCTTTGAG AGTAAAGGGT TGTGCACAAA GCTAGCTGAT GTACTACCTC TTTGGTTCTT TCAGACATTC TTACCCTCAA TTTTAAAACT GAGGAAACTG TCAGACATAT TAAATGATTT ACTCAGATTT ACCCAGAAGC CAATGAAGAA CAATCACTCT CCTTTAAAAA GTCTGTTGAT CAAACTCACA AGTAACACCA AACCAGGAAG ATCTTTATTA TCTCTGATAA TIGATTCCAG AGGCGTGCCT AGGCAGGATC TATGAGAAAA TATAACAGAG AGTAAGAGGA AAATTACCTT CTTTCTTTTT CCTTTCCCTG CCTGACCTTA TTCACCTCCC ATCCCAGAGC ATCCATTTAT TCCATTGATC TTTACTGACA TCTATTATCT

GACCTACACA ATACTAGACA TTAGGACAAT GTGGCCTGCC TCCAAGAAAC TCAAATAAGC CAACTGAGAT CAGAGAGGAT GCTGCAAAAA AAAAAAAAAT GAATAGGGTG CTAAGATAGA GAAAAGTGGG AGAGTGCTAT TTAGACAAAG TGGTAAAAAAC AAAGCCCCTT GTGAGATGAG AGCTGCCGAC AGAGGGGGCG GGTCATGGTT GTGGGTTTTT GGGTAGGACA TTCAGAGGAG GGGGCGGGTC GTGGTTGTGG GTTTTTGGGT AGGACATTCA GAGGAGGGGG CGGGTCGTGG TTGTGGGTTT TTGGGTAGGA CATTCAGAGG AGGGGCGGG TCGTGGTTGT GGGTTTTTGG GTAGGACATT CAGAGGAGGG GGCGGGTCGT GGTTGTGGGT TITTGGGACA TICAGAGGAG TCTGAGTIGI GGGTTTTGAG ACACTTCAAG ATGGTAAAGG ACAGCTCCAA GGATCAGAAG AAGATCATTGGGACA TICAGAGGAG CATTTTGAGA AGGAGGAAAA ATAGCAGAG ACTAGTGCTT GCAGAGCTTG CATTTGAGT TCATTTGAGG TACAATGAAA ACCCATTAAT GGGTTCACA CAGTGCAATG GCCTGACCTC ACTTATATTT CCTAAAATAG AAAACAGATC AGAAGGAAGG CAATAGAGAA GCCGAAAAGTC CAATGAGGAG GTTTCACAGC AGTCATGGGG GTGGGGTAAG GAAAGAAGT GGAAAGAAC AGACAGAATT GGGTTATATT TTGGAGATAG AACCAACAGA AGGAAGAGGA GAAACAACAT TTACTGAGAT AGGAGAGGAA TAGGTTTGGG AAATAAACTC TGCTGACATT GGAAACCCCA AGGAAGCCTC AAAAGTATTA TTACTTGCTT TAGATTTAAA AGAATAGGAA AGAATAGGAA AGAACCACT CAACTTGGAA TTTGAAATCT ATTTTTCCAT GTAGTGAGAC CAACCTCCTC TTCTTCTGGG AAACTCACGG CACTAAGAAC TATTTCACAT CAGTTGCCCA TCCAAACTTG
TTTATTGCCA CAAAGCAAGA CTACTGGGTG TGCTTGGCAG GGGGGCCACC CTCTATCACT GACTTTCAGA TACTGGAAAA ATAAATATAT TTAAGATAAT TATAATATAC TATATTATG GGAACCCCTT CATCCTCTGA GTGTGACCAG GCATCCTCCA
CAATAGCAGA CAGTGTTTTC TGGGATAAGT AAGTTTGATT TCATTAATAC AGGGCATTIT GGTCCAAGTT GTGCTTATCC
CATAGCCAGG AAACTCTGCA TTCTAGTACT TGGGAGACCT GTAATCATAT AATAAATGTA CATTAATTAC CTTGAGCCAG
TAATTGGTCC GATCTTTGAC TCTTTTGCCA TTAAACTTAC CTGGGCATTC TTGTTTCATT CAATTCCACC TGCAATCAAG
TCCTACAAGC TAAAATTAGA TGAACTCAAC TTTGACAACC ATGAGACCAC TGTTATCAAA ACTTTCTTTT CTGGAATGTA ATCAATGTTT CTTCTAGGTT CTAAAAATTG TGATCAGACC ATAATGTTAC ATTATTATCA ACAATAGTGA TTGATAGAGT GTTATCAGTC ATAACTAAAAT AAAGCTTGCA ACAAAATTCT CTGACACATA GTTATTCATT GCCTTAATCA TTATTTTACT GCATGGTAAT TAGGGACAAA TGGTAAATGT TTACATAAAAT AATTGTATTT AGTGTTACTT TATAAAAATCA AACCAAGATT TTATATTTTT TTCTCCTCTT TGTTAGCTGC CAGTATGCAT AAATGGCATT AAGAATGATA ATATTTCCGG GTTCACTTAA AGCTCATATT ACACATACAC AAAACATGTG TTCCCATCTT TATACAAACT CACACATACA GAGCTACATT AAAAACAACT AATAGGCCAG GCACGGTGGC TCAGACCTGT AATCCCAGCA CTTTGGGAGG-3' (FRAG. NO:)(SEQ ID NO:11879) ANTAGGCCAG GCACGGTGGC TCAGACCTGT ANTCCCAGCA CTTTGGGAGG-3' (FRAG. NO:)(SEQ ID NO:11879)
5'-ACCAACCTCT TCGAGGCACA AGGCACAACA GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCATTGCTCA AGTGTCTGAA
GCAGCCATGG CAGAAGTACC TGAGCTCGCC AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGGTGACT TGTTCTTTGA
AGCTGATGGC CCTAAACAGA TGAAGTGCTC CTTCCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA
TCTCCGACCA CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG
GTTCCCTGCC CACAGACCTT CCAGGAGAAT GACCTGAGCA CCTTCTTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCTT
CGACCACATGG GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCACC TGAACTGCAC GCTCCGGGAC TCACAGCACACA AAAGCTTGGT GATGTCTGGT CCATATGAAC TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC
TCCATGTCCT TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTTGGGCCTC AAGGAAAAGA ATCTGTACCT
GTCCTGCGTG TTGAAAGATG ATAAGCCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCCAA CTGGTACATC AGCACCTCTC AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAGG CGGCCAGGAT ATAACTGACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCCT GTGCTGAATG TGGACTCAAT CCCTAGGGCT GGCAGAAAGG GAACAGAAAG GTTTTTGAGT ACGCTATAG CCTGGACTTT CCTGTTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA GGATCTCCTG TCCATCAGCC AGGACAGTCA GCTCTCTCCT TTCAGGGCCA ATCCCCAGCC CTTTTGTTGA GCCAGGCCTC TCTCACCTCT CCTACTCACT TAAAGCCCGC CTGACAGAAA CCACGGCCAC ATTTGGTTCT AAGAAACCCT TTTATAAATG AGCAAATATC ATACTGTTCA ATGGTTCTGA AATAAACTTC TCTGAAG-3' (FRAG. NO:_)(SEQ ID NO:11880) 5'-AGAAAGAAAG AGAGAGAGAA AGAAAAGAAA GAGGAAGGAA GGAAGGAAAGG AAGAAAGACA GGCTCTGAGG AAGGTGGCAG TTCCTACAAC GGGAGAACCA GTGGTTAATT TGCAAAGTGG ATCCTGTGGA GGCANNCAGA GGAGTCCCCT AGGCCACCCA GACAGGGCTT TTAGCTATCT GCAGGCCAGA CACCAAATTT CAGGAGGGCT CAGTGTTAGG AATGGATTAT GGCTTATCAA ATTCACAGGA AACTAACATG TTGAACAGCT TTTAGATTTC CTGTGGAAAA TATAACTTAC TAAAGATGGA GTTCTTGTGA CTGACTCCTG ATATCAAGAT ACTGGGAGCC AAATTAAAAA TCAGAAGGCT GCTTGGAGAG CAAGTCCATG
AAATGCTCTT TTTCCCACAG TAGAACCTAT TTCCCTCGTG TCTCAAATAC TTGCACAGAG GCTCACTCCC TTGGATAATG CAGAGCGAGC ACGATACCTG GCACATACTA ATTTGAATAA AATGCTGTCA AATTCCCATT CACCCATTCA AGCAGCAAAC TCTATCTCAC CTGAATGTAC ATGCCAGGCA CTGTGCTAGA CTTGGCTCAA AAAGATTTCA GTTTCCTGGA GGAACCAGGA GGGCAAGGTT TCAACTCAGT GCTATAAGAA GTGTTACAGG CTGGACACGG TGGCTCACGC CTGTAATCCC AACATTTGGG

AGGCCGAGGC GGGCAGATCA CAAGGTCAGG AGATCGAGAC CATCCTGGCT AACATGGTGA AACCCTGTCT CTACTAAAAA TACAAAAAAT TAGCCGGGCG TTGGCGGCAG GTGCCTGTAG TCCCAGCTGC TGGGGAGGCT GAGGCAGGAG AATGGTGTGA ACCCGGGAGG CGGAACTTGC AGGGGGCCGA GATCGTGCCA CTGCACTCCA GCCTGGGCGA CAGAGTGAGA CTCTGTCTCA AAAAAAAAA AAAAGTGTTA TGATGCAGAC CTGTCAAAGA GGCAAAGGAG GGTGTTCCTA CACTCCAGGC ACTGTTCATA ACCTGGACTC TCATTCATTC TACAAATGGA GGGCTCCCCT GGGCAGATCC CTGGAGCAGG CACTTTGCTG GTGTCTCGGT TAAAGAGAAAA CTGATAACTC TTGGTATTAC CAAGAGATAG AGTCTCAGAT GGATATTCTT ACAGAAACAA TATTCCCACT TTTCAGAGTT CACCAAAAAA TCATTTTAGG CAGAGCTCAT CTGGCATTGA TCTGGTTCAT CCATGAGATT GGCTAGGGTA ACAGCACCTG GTCTTGCAGG GTTGTGTGAG CTTATCTCCA GGGTTGCCCC AACTCCGTCA GGAGCCTGAA CCCTGCATAC CGTATGTTCT CTGCCCCAGC CAAGAAAGGT CAATTTTCTC CTCAGAGGCT CCTGCAATTG ACAGAGAGCT CCCGAGGCAG AGAACAGCAC CCAAGGTAGA GACCCACACC CTCAATACAG ACAGGGAGGG CTATTGGCCC TTCATTGTAC CCATTTATCC ATCTGTAAGT GGGAAGATTC CTAAACTTAA GTACAAAGAA GTGAATGAAG AAAAGTATGT GCATGTATAA ATCTGTGTGT CTTCCACTTT GTCCCACATA TACTAAATTT AAACATTCTT CTAACGTGGG AAAATCCAGT ATTTTAATGT GGACATCAAC TGCACAACGA TTGTCAGGAA AACAATGCAT ATTTGCATGG TGATACATTT GCAAAATGTG TCATAGTTTG CTACTCCTTG CCCTTCCATG AACCAGGAA TTATCAGGT TTATTAGTCC CCTCCCCTAA GAAGCTTCCA CCAATACTCT TTTCCCCTTT CCTTTAACTT GATTGTGAAA TCAGGTATTC AACAGAGAAA TTTCTCAGCC TCCTACTTCT GCTTTTGAAA GCTATAAAAA CAGCOAGGA GAAACTGGCA GATACCAAAC CTCTTCGAGG CACAAGGCAC AACAGGCTGC TCTGGGATTC TCTTCAGCCA
ATCTTCATTG CTCAAGTATG ACTTTAATCT TCCTTACAAC TAGGTGCTAA GGGAGTCTCT CTGTCTCTCT GCCTCTTTGT
GTGTATGCAT ATTCTCTCTC TCTCTCTCTT TCTTTCTCTG TCTCTCCTCT CCTTCCTCT TGCCTCCTC CTCAGCTTTT TIGCAAAAATG CCAGGTGTAA TATAATGCTT ATGACTCGG AAATATTCTG GGAATGGATA CTGCTTATCT AACAGCTGAC ACCCTAAAGG TTAGTGTCAA AGCCTCTGCT CCAGCTCTCC TAGCCAATAC ATTGCTAGTT GGGGTTTGGT TTAGCAAATG CTTTTCTCTA GACCCAAAGG ACTTCTCTTT CACACATTCA TTCATTTACT CAGAGATCAT TTCTTTGCAT GACTGCCATG CACTGGATGC TGAGAGAAAT CACACATGAA CGTAGCCGTC ATGGGGAAGT CACTCATTTT CTCCTTTTTA CACAGGTGTC TGAAGCAGCC ATGGCAGAAG TACCTGAGCT CGCCAGTGAA ATGATGGCTT ATTACAGGTC AGTGGAGACG CTGAGACCAG TAACATGAGC AGGTCTCCTC TTTCAAGAGT AGAGTGTTAT CTGTGCTTGG AGACCAGATT TTTCCCCTAA ATTGCCTCTT TCAGTGGCAA ACAGGGTGCC AAGTAAATCT GATTTAAAGA CTACTTTCCC ATTACAAGTC CCTCCAGCCT TGGGACCTGG AGGCTATCCA GATGTGTTGT TGCAAGGGCT TCCTGCAGAG GCAAATGGGG AGAAAAGATT CCAAGCCCAC AATACAAGGA ATCCCTTTGC AAAGTGTGGC TTGGAGGGAG AGGGAGAGCT CAGATTTTAG CTGACTCTGC TGGGCTAGAG GTTAGGCCTC AAGATCCAAC AGGGAGCACC AGGGTGCCCA CCTGCCAGGC CTAGAATCTG CCTTCTGGAC TGTTCTGCGC ATATCACTGT GAAACTTGCC AGGTGTTTCA GGCAGCTTTG AGAGGCAGGC TGTTTGCAGT TTCTTATGAA CAGTCAAGTC TTGTACACAG GGAAGGAAAA ATAAACCTGT TTAGAAGACA TAATTGAGAC ATGTCCCTGT TTTTATTACA GTGGCAATGA GGATGACTTG TTCTTTGAAG CTGATGGCCC TAAACAGATG AAGGTAAGAC TATGGGTTTA ACTCCCAACC CAAGGAAGGG CTCTAACACA GGGAAAGCTC AAAGAAGGGA GTTCTGGGCC ACTTTGATGC CATGGTATTT TGTTTTAGAA AGACTTAAC CTCTTCCAGT GAGACACAGG CTGCACCACT TGCTGACCTG GCCACTTGGT CATCATATCA CCACAGTCAC TCACTAACGT TGGTGGTGGT GGCCACACTT GGTGGTGACA GGGGAGGAGT AGTGATAATG TTCCCATTTC ATAGTAGGAA GACAACCAAG TCTTCAACAT AAATTTGATT ATCCTTTTAA GAGATGGATT CAGCCTATGC CAATCACTTG AGTTAAACTC TGAAACCAAG AGATGATCTT GAGAACTAAC ATATGTCTAC CCCTTTTGAG TAGAATAGTT TTTTGCTACC TGGGGTGAAG CTTATAACAA CAAGACATAG ATGATATAAA CAAAAAGATG AATTGAGACT TGAAAGAAAA CCATTCACTT GCTGTTTGAC CTTGACAAGT CATTTTACCC GCTTTGGACC TCATCTGAAA AATAAAGGGC TGAGCTGGAT GATCTCTGAG ATTCCAGCAT CCTGCAACCT CCAGTTCTGA AATATTITCA GITGTAGCTA AGGGCATTTG GGCAGCAAAT GGTCATTTIT CAGACTCATC CTTACAAAGA GCCATGTTAT ATTCCTGCTG TCCCTTCTGT TTTATATGAT GCTCAGTAGC CTTCCTAGGT GCCCAGCCAT CAGCCTAGCT AGGTCAGTTG TGCAGGTTGG AGGCAGCCAC TTTTCTCTGG CTTTATTTTA TTCCAGTTTG TGATAGCCTC CCCTAGCCTC ATAATCCAGT CCTCAATCTT GTTAAAACA TATTTCTTTA GAAGTTTTAA GACTGCCATA ACTTCTTGGC TGCAGCTGTG GGAGGAGCCC ATTGCCTCTT CCAGCAGCTT GGCTCTGCTC CAGGCAGGAA ATTCTCTCCT GCTCAACTTT CTTTTGTGCA CTTACAGGTC TCTTTAACTG TCTTTCAAGC CTTTGAACCA TTATCAGCCT TAAGGCAACCC TCAGTGAAGC CTTAATACGG AGCTTCTCTG AATAAGAGGA AAGTGGTAAC ATTTCACAAA AAGTACTCTC ACAGGATTTG CAGAATGCCT ATGAGACAGT GTTATGAAAA AGGAAAAAAA AGAACAGTGT AGAAAAATTG AATACTTGCT GAGTGAGCAT AGGTGAATGG AAAATGTTAT GGTCATCTGC ATGAAAAAGC AAATCATAGT GTGACAGCAT TAGGGATACA AAAAGATATA ACAGAGTCTC ACTCTGTTGC CCAGGCTGGA GTGCAGTGGT ACAATCTTGG CTTACTGCAT CCTCCACCTC CTGAGTTCAA GCGATTCTCC TTCCTCAGTC TCCTGAATAG CTAGGATTAC AGGTGCACCC CACCACACCC AGCTAATTTT TGTATTTTTA GTAGAGAAGG GGTTTCGCCA TGTTGGCCAG GCTGGTTTTG AAGTCCTGAC CTAAATGATT CATCCACCTC GGCTTCCCAA AGTGCTGGGA TTACAGGCAT GAGCCACCAC GCCTGGCCCA GAGAGGGATG ATCTTTAGAA GCTCGGGATT CTTTCAAGCC CTITICCTCCT CTCTGAGCTT TCTACTCTCT GATGTCAAAG CATGGTTCCT GGCAGGACCA CCTCACCAGG CTCCCTCCCT CGCTCTCTCC GCAGTGCTCC TTCCAGGACC TGGACCTCTG CCCTCTGGAT GGCGGCATCC AGCTACGAAT CTCCGACCAC CACTACAGCA AGGGCTTCAG GCAGGCCGCG TCAGTTGTTG TGGCCATGGA CAAGCTGAGG AAGATGCTGG TTCCCTGCCC ACAGACCTTC CAGGAGAATG ACCTGAGCAC CTTCTTTCCC TTCATCTTTG AAGAAGGTAG TTAGCCAAGA GCAGGCAGTA GATCTCCACT TGTGTCCTCT TGGAAGTCAT CAAGCCCCAG CCAACTCAAT TCCCCCAGAG CCAAAGCCCT TTAAAGGTAG AAGGCCCAGC GGGGAGACAA AACAAGAAG GCTGGAAACC AAAGCAATCA TCTCTTTAGT GGAAACTATT CTTAAAGAAG ATCTTGATGG CTACTGACAT TTGCAACTCC CTCACTCTTT CTCAGGGGCC TTTCACTTAC ATTGTCACCA GAGGTTCGTA ACCTCCCTGT GGGCTAGTGT TATGACCATC ACCATTTTAC CTAAGTAGCT CTGTTGCTCG GCCACAGTGA GCAGTAATAG ACCTGAAGCT GGAACCCATG TCTAATAGTG TCAGGTCCAG TGTTCTTAGC CACCCCACTC CCAGCTTCAT CCCTACTGGT
GTTGTCATCA GACTTTGACC GTATATGCTC AGGTGTCCTC CAAGAAATCA AATTTTGCCA CCTCGCCTCA CGAGGCCTGC
CCTTCTGATT TTATACCTAA ACAACATGTG CTCCACATTT CAGAACCTAT CTTCTTCGAC ACATGGGATA ACGAGGCTTA
TGTGCACGAT GCACCTGTAC GATCACTGAA CTGCACGCTC CGGGACTCAC AGCAAAAAAG CTTGGTGATG TCTGGTCCAT ATGAACTGAA AGCTCTCCAC CTCCAGGGAC AGGATATGGA GCAACAAGGT AAATGGAAAC ATCCTGGTTT CCCTGCCTGG CCTCCTGGCA GCTTGCTAAT TCTCCATGTT TTAAACAAAG TAGAAAGTTA ATTTAAGGCA AATGATCAAC ACAAGTGAAA CALCAGGGA GETTGETAAT TELECATORY THAACAAAG TAGAAAGTTA ATTTAAGGA AATGATCAAC ACAAGTGAAA GAAAAATAATTA AAAAGGAATA TACAAACTTT GGTCCTAGAA ATGGCACATT TGATTGCACT GGCCAGTGCA TTTGTTAACA GGAGTGTGAC CCTGAGAAAT TAGACAGCGCTC AAGCACTCCC AGGACCATT CCACCCAAGT CTCTTGGGCA TAGTGCAGTG TCAATTCTTC CACAATATGG GGTCATTTGA TGGACATGGC CTAACTGCCT GTGGGTTCTC TCTTCCTGTT GTTGAGGCTG AAACAAGAGT GCTGGAGCGA TAATGTGTCC ATCCCCCTCC CCAGTCTTCC CCCCTTGCCC CAACATCCGT CCCACCCAAT GCCAGGTGGT TCCTTGTAGG GAAATTTTAAC CGCCCAGCAG GAACTTATAT CTCTCCGGTG TAACGGGCAA AAGTTTCAAG TGCGGTGAAC CCATCATTAG CTGTGGTGAT CTGCCTGGCA TCGTGCCACA GTAGCCAAAG CCTCTGCACA GGAGTGTGGG CAACTAAGGC TGCTGACTTT GAAGGACAGC CTCACTCAGG GGGAAGCTAT TTGCTCTCAG CCAGGCCAAG AAAATCCTGT

TGGATGGCA CATTGCCAGC CAGTGACACA ATGGCTTCCT TCCTTCCTTC CTTCAGCATT TAAAATGTAG ACCCTCTTTC ATTCTCCGTT CCTACTGCTA TGAGGCTCTG AGAAACCCTC AGGCCTTTGA GGGGAAACCC TAAATCAACA AAATGACCCT GCTATTGTCT GTGAGAAGTC AAGTTATCCT GTGTCTTAGG CCAAGGAACC TCACTGTGGG TTCCCACAGA GGCTACCAAT TACATGTATC CTACTCTCGG GGCTAGGGGT TGGGGTGACC CTGCATGCTG TGTCCCTAAC CACAAGACGC CCTTCTTTCT TCAGTGGTGT TCTCCATGTC CTTTGTACAA GGAGAAGAAA GTAATGACAA AATACCTGTG GCCTTGGGCC TCAAGGAAAA GAATCTGTAC CTGTCCTGCG TGTTGAAAGA TGATAAGCCC ACTCTACAGC TGGAGGTAAG TGAATGCTAT GGAATGAAGC CCTTCTCAGC CTCCTGCTAC CACTTATTCC CAGACAATTC ACCTTCTCCC CGCCCCCATC CCTAGGAAAA GCTGGGAACA AAGAAGAAGA TGGAAAAGCG ATTTGTCTTC AACAAGATAG AAATCAATAA CAAGCTGGAA TTTGAGTCTG CCCAGTTCCC CAACTGGTAC ATCAGCACCT CTCAAGCAGA AAACATGCCC GTCTTCCTGG GAGGGACCAA AGGCGCCAG GATATAACTG ACTTCACCAT GCAATTTGTG TCTTCCTAAA GAGAGCTGTA CCCAGAGAGT CCTGTGCTGA ATGTGGACTC AATCCCTAGG GCTGGCAGAA AGGGAACAGA AAGGTTTTTG AGTACGGCTA TAGCCTGGAC TTTCCTGTTG TCTACACCAA TGCCCAACTG CCTGCCTTAG GGTAGTGCTA AGAGGATCTC CTGTCCATCA GCCAGGACAG TCAGCCTCT CCTTTCAGGG CCAATCCCCA
GCCCTTTTGT TGAGCCAGGC CTCTCTCACC TCTCCTACTC ACTTAAAGCC CGCCTGACAG AAACCACGGC CACATTTGGT
TCTAAGAAAC CCTCTGTCAT TCGCTCCCAC ATTCTGATGA GCAACCGCTT CCCTATTTAT TTATTTATTT GTTTGTTTGATTCAT TGGTCTAATT TATTCAAAGG GGGCAAGAAG TAGCAGTGTC TGTAAAAGAG CCTAGTTTTT AATAGCTATG 25 GAATCAATTC AATTITGACT GGTGTGCTCT CTTTAAATCA AGTCCTTTAA TTAAGACTGA AAATATATAA GCTCAGATTA
TTTAAATGGG AATATTTATA AATGAGCAAA TATCATACTG TTCAATGGTT CTGAAATAAA CTTCACTGAA GAAAAAAAA
AAAGGGTCTC TCCTGATCAT TGACTGTCTG GATTGACACT GACAGTAAGC AAACAGGCTG TGAGAGTTCT TGGGACTAAG 30 CCCACTCCTC ATTGCTGAGT GCTGCAAGTA CCTAGAAATA TCCTTGGCCA CCGAAGACTA TCCTCCTCAC CCATCCCCTT TATTTCGTTG TTCAACAGAA GGATATTCAG TGCACATCTG GAACAGGATC AGCTGAAGCA CTGCAGGGAG TCAGGACTGG TAGTAACAGC TACCATGATT TATCTATCAA TGCACCAAAC ATCTGTTGAG CAAGCGCTAT GTACTAGGAG CTGGGAGTAC ÁGAGATGAGA ACAGTCACAA GTCCCTCCTC AGATAGGAGA GGCAGCTAGT TATAAGCAGA ACAAGGTAAC ATGACAAGTA GAGTAAGATA GAAGAACGAA GAGGAGTAGC CAGGAAGGAG GGAGGAGAAC GACATAAGAA TCAAGCCTAA AGGGATAAAC AGAAGATTTC CACACATGGG CTGGGCCAAT TGGGTGTCGG TTACGCCTGT AATCCCAGCA CTTTGGGTGG CAGGGGCAGA GCCCAGAAGT TCAAGACTGC AGTGAGCTTA TCCGTTGACC TGCAGGTCGA C-3' (FRAG. NO:)(SEQ ID NO:11881) 5'-ACAAACCTTT TCGAGGCAAA AGGCAAAAAA GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCAATGCTCA AGTGTCTGAA GCAGCCATGG CAGAAGTACC TAAGCTCGCC AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGATGACT TGTTCTTTGA AGCTGATGGC CCTAAACAGA TGAAGTGCTC CTTCCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA TCTCCGACCA CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CCAGGAGAAT GACCTGAGCA CCTTCTTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCTT CGACACATGG GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAACTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GATGTCTGGT CCATATGAAC TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC TCCATGTCCT TTGTACAAGG AGAAGAAGT AATGACAAAA TACCTGTGGC CTTGGGCCTC AAGGAAAAGA ATCTGTACCT GTCCTGCGTG TTGAAAGATG ATAAGCCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCCAA CTGGTACATC AGCACCTCTC AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAGG CGGCCAGGAT ATAACTGACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCCT GTGCTGAATG TGGACTCAAT CCCTAGGGCT GGCAGAAAGG GAACAGAAAG GTTTTTGAGT ACGGCTATAG CCTGGACTTT CCTGTTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA GGATCTCCTG TCCATCAGCC AGGACAGTCA GCTCTCTCCT TTCAGGGCCA ATCCCAGCCC TTTTGTTGAGCCAGGCCTCT CTCACCTCTC CTACTCACTT AAAGCCCGCC TGACAGAAAC CAGGCCACAT TTTGGTTCTA AGAAACCCTC CTCTGTCATT CGCTCCCACA TICTGATGAG CAACCGCTTC CCTATITATT TATITATTTG TITGTTTGTT TTGATTCATT
GGTCTAATTT ATTCAAAGGG GGCAAGAAGT AGCAGTGTCT GTAAAAGAGC CTAGTTTTTA ATAGCTATGG AATCAATTCA ATTTGGACTG GTGTGCTCTC TTTAAATCAA GTCCTTTAAT TAAGACTGAA AATATATAAG CTCAGATTAT TTAAATGGGA ATATTTATAA ATGAGCAAAT ATCATACTGT TCAATGGTTC TCAAATAAAC TTCACT-3' (FRAG. NO:)(SEQ ID NO:11882) 5'-CTGGCAGGAG TAGCAGCTGC CCCTTGGCGC GACTGCTGGA GCCGCGAACT AGAGAAACAC AGACACGCCT CATAGAGCAA CGGCGTCTCT CGGAGCGTGG AGCCCGCCAA GCTCGAGCTG AGCTTTCGCT TGCCGTCCAC CACTGCCCAC ACTGTCGTTT GCTGCCATCG CAGACCTGCT GCTGACTTCC ATCCCTCTGG ATCCGGCAAG GGCCTGCGAT TTTGACAATG TCAAGATTTA CCGTATATCC CTGTTTGTTT GGATACACCA GTGACCTCCA CTTCTAGAAG ACAAAGTTAT ATTACTTAAA CAACCAAAGA TATGAAACTA TCCATGAAGA ACAATATTAT CAATACACAG CAGTCTTTTG TAACCATGCC CAATGTGATT GTACCAGATA TTGAAAAGGA AATACGAAGG ATGGAAAATG GAGCATGCAG CTCCTTTTCT GAGGATGATG ACAGTGCCTC TACATCTGAA GAATCAGAGA ATGAAAACCC TCATGCAAGG GGTTCCTTTA GTTATAAGTC ACTCAGAAAG GGAGGACCAT CACAGAGGGA GCAGTACCTG CCTGGTGCCA TTGCCATTTT TAATGTGAAC AACAGCGACA ATAAGGACCA GGAACCAGAA GAAAAAAAGA AAAAGAAAA AGAAAAGAAG AGCAAGTCAG ATGATAAAAA CGAAAATAAA AACGACCCAA AGAAGAAGAT GGAAAAAGCGA-3' (FRAG. NO:)(SEQ ID NO:11883) 5'-ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGTGA AAATGAAGAA GACAGTTCCT CCATTGATCA TCTGTCTCTG AATCAGAAAT CCTTCTATCA TGTAAGCTAT GGCCCACTCC ATGAAGGCTG CATGGATCAA TCTGTGTCTC
TGAGTATCTC TGAAACCTCT AAAACATCA AGCTTACCTT CAAGGAGAGC ATGGTGGTAG TAGCAACCAA CGGGAAGGTT
CTGAAGAAGA GACGGTTGAG TTTAAGCCAA TCCATCACTG ATGATGACCT GGAGGCCATC GCCAATGACT CAGAGGAAGA 70 AATCATCAAG CCTAGGTCAG CACCTTTTAG CTTCCTGAGC AATGTGAAAT ACAACTTTAT GAGGATCATC AAATACGAAT TCATCCTGAA TGACGCCCTC AATCAAAGTA TAATTCGAGC CAATGATCAG TACCTCACGG CTGCTGCATT ACATAATCTG GATGAAGCAG TGAAATTTGA CATGGGTGCT TATAAGTCAT CAAAGGATGA TGCTAAAATT ACCGTGATTC TAAGAATCTC AAAAACTCAA TTGTATGTGA CTGCCCAAGA TGAAGACCAA CCAGTGCTGC TGAAGGAGAT GCCTGAGATA CCCAAAACCA

TCACAGGTAG TGAGACCAAC CTCCTCTTCT TCTGGGAAAC TCACGGCACT AAGAACTATT TCACATCAGT TGCCCATCCA AACTTGTTTA TTGCCACAAA GCAAGACTAC TGGGTGTGCT TGGCAGGGGG GCCACCCTCT ATCACTGACT TTCAGATACT GGAAAACCAG GCGTAGGTCT GGAGTCTCAC TTGTCTCACT TGTGCAGTGT TGACAGTTCA TATGTACCAT GTACATGAAG AAGCTAAATC CTTTACTGTT AGTCATTTGC TGAGCATGTA CTGAGCCTTG TAATTCTAAA TGAATGTTTA CACTCTTTGT AAGAGTGGAA CCAACACTAA CATATAATGT TGTTATTTAA AGAACACCCT ATATTTTGCA TAGTACCAAT CATTTTAATT ATTATTCTTC ATAACAATTT TAGGAGGACC AGAGCTACTG ACTATGGCTA CCAAAAAGAC TCTACCCATA TTACAGATGG GCAAATTAAG GCATAAGAAA ACTAAGAAAT ATGCACAATA GCAGTTGAAA CAAGAAGCCA CAGACCTAGG ATTTCATGAT TTCATTICAA CIGITITGCCT TCTGCTTTTA AGITGCTGAT GAACTCTTAA TCAAATAGCA TAAGTTTCTG GGACCTCAGT TTTATCATTT TCAAAATGGA GGGAATAATA CCTAAGCCTT CCTGCCGCAA CAGTTTTTTA TGCTAATCAG GGAGGTCATT TTGGTAAAAT ACTTCTCGAA GCCGAGCCTC AAGATGAAGG CAAAGCACGA AATGTTATTT TTTAATTATT ATTTATATAT GTATTTATAA ATATATTTAA GATAATTATA ATATACTATA TTTATGGGAA CCCCTTCATC CTCTGAGTGT GACCAGGCAT CCTCCACAAT AGCAGACAGT GTTTTCTGGG ATAAGTAAGT TTGATTTCAT TAATACAGGG CATTTTGGTC CAAGTTGTGC TTATCCCATA GCCAGGAAAC TCTGCATTCT AGTACTTGGG AGACCTGTAA TCATATAATA AATGTACATT AATTACCTTG AGCCAGTAAT TGGTCCGATC TTTGACTCTT TTGCCATTAA ACTTACCTGG GCATTCTTGT TTCATTCAAT TCCACCTGCA ATCAAGTCCT ACAAGCTAAA ATTAGATGAA CTCAACTTTG ACAACCATAG ACCACTGTTA TCAAAACTTT CTTTTCTGGA ATGTAATCAA TGTTTCTTCT AGGTTCTAAA AATTGTGATC AGACCATAAT GTTACATTAT TATCAACAAT AGTGATTGAT AGAGTGTTAT CAGTCATAAC TAAATAAAGC TTGCAAGTGA GGGAGTCATT TCATTGGCGT TTGAGTCAGC AAAGAAGTCA AG-3' (FRAG. NO:_)(SEQ ID NO:11884) 5'-AOCTGCCAGC CAGAGAGGGA GTCATTTCAT TGGCGTTTGA GTCAGCAAAQ AAGTCAAGAT GGCCAAAGTT CCAGACATGT TTGAAGACCT GAAGAACTGT TACAGTGAAA ATGAAGAAGA CAGTTCCTCC ATTGATCATC TGTCTCTGAA TCAGAAATCC TTCTATCATG TAAGCTATGG CCCACTCCAT GAAGGCTGCA TGGATCAATC TGTGTCTCTG AGTATCTCTG AAACCTCTAA AACATCCAAG CTTACCTTCA AGGAGAGCAT GGTGGTAGTA GCAACCAACG GGAAGGTTCT GAAGAAGAG CGGTTGAGTT TAAGCCAATC CATCACTGAT GATGACCTGG AGGCCATCGC CAATGACTCA GAGGAAGAAA TCATCAAGCC TAGGTCATCA CCTTTTAGCT TCCTGAGCAA TGTGAAATAC AACTTTATGA GGATCATCAA ATACGAATTC ATCCTGAATG ACGCCCTCAA TCAAAGTATA ATTCGAGCCA ATGATCAGTA CCTCACGGCT GCTGCATTAC ATAATCTGGA TGAAGCAGTG AAATTTGACA TOGOTOCTTA TAAGTCATCA AAGGATGATO CTAAAATTAC COTGATTCTA AGAATCTCAA AAACTCAATT GTATGTGACT GCCCAAGATG AAGACCAACC AGTGCTGCTG AAGGAGATGC CTGAGATACC CAAAACCATC ACAGGTAGTG AGACCAACCT CCTCTTCTTC TGGGAAACTC ACGGCACTAA GAACTATTTC ACATCAGTTG CCCATCCAAA CTTGTTTATT GCCACAAAGC
AAGACTACTG GGTGTGCTTG GCAGGGGGGC CACCCTCTAT CACTGACTTT CAGATACTGG AAAACCAGGC GTAGGTCTGG AGTCTCACTT GTCTCACTTG TGCAGTGTTG ACAGTTCATA TGTACCATGT ACATGAGAA GCTAAATCCT TTACTGTTAG
TCATTTGCTG AGCATGTACT GAGCCTTGTA ATTCTAAATG AATGTTTACA CTCTTTGTAA GAGTGGAACC AACACTAACA
TATAATGTTG TTATTTAAAG AACACCTAT ATTTTGCATA GTACCAATCA TTTTAATTAT TATTCTTCAT AACAATTTTA
GGAGGACCAG AGCTACTGAC TATGGCTACC AAAAAGACTC TACCCATATT ACAGATGGGC AAATTAAGGC ATAAGAAAAC TAAGAAATAT GCACAATAGC AGTCGAAACA AGAAGCCACA GACCTAGGAT TTCATGATTT CATTTCAACT GTTTGCCTTC TGCTTTTAAG TTGCTGATGA ACTCTTAATC AAATAGCATA AGTTTCTGGG ACCTCAGTTT TATCATTTTC AAAATGGAGG GAATAATACC TAAGCCTTCC TGCCGCAACA GTTTTTTATG CTAATCAGGG AGGTCATTTT GGTAAAATAC TTCTCGAAGC CGAGCCTCAA GATGAAGGCA AAGCACGAAA TGTTATTTTT TAATTATTAT TTATATATGT ATTTATAAAT ATATTTAAGA TAATTATAAAT ATACTATATT TATGGGAACC CCTTCATCCT CTGAGTGTGA CCAGGCATCC TCCACAATAG CAGACAGTGT TTTCTGGGAT AAGTAAGTTT GATTTCATTA ATACAGGGCA TTTTGGTCCA AGTTGTGCTT ATCCCATAGC CAGGAAACTC TGCATTCTAG TACTTGGGAG ACCTGTAATC ATATAATAAA TGTACATTAA TTACCTTGAG CCAGTAATTG GTCCGATCTT TGACTCTTTT GCCATTAAAC TTACCTGGGC ATTCTTGTTT CATTCAATTC CACCTGCAAT CAAGTCCTAC AAGCTAAAAT TAGATGAACT CAACTTTGAC AACCATGAGA CCACTGTTAT CAAAACTTTC TTTTCTGGAA TGTAATCAAT GTTTCTTCTA GGTTCTAAAA ATTGTGATCA GACCATAATG TTACATTATT ATCAACAATA GTGATTGATA GAGTGTTATC AGTCATAACT AAATAAAGCT TGCAACAAAA TTCTCTG-3' (FRAG. NO:_)(SEQ ID NO:11885) Human Interleukin-1 Receptor (IL-1 R) Nucleic Acids and Anti-sense Oligonucleotide Fragments 5'-GCCACGTGCT GCTGGGTCTC AGTCCTCCAC TTCCCGTGTC CTCTGGAAGT TGTCAGGAGC AATGTTGCGC TTGTACGTGT TGGTAATGGG AGTTTCTGCC TTCACCCTTC AGCCTGCGGC ACACACAGGG GCTGCCAGAA GCTGCCGGTT TCGTGGGAGG CATTACAAGC GGGAGTTCAG GCTGGAAGGG GAGCCTGTAG CCCTGAGGTG CCCCAGGTG CCCTACTGGT TGTGGGCCTC TGTCAGCCCC CGCATCAACC TGACATGGCA TAAAAATGAC TCTGCTAGGA CGGTCCCAGG AGAAGAAGAG ACACGGATGT GGGCCCAGGA CGGTGCTCTG TGGCTTCTGC CAGCCTTGCA GGAGGACTCT GGCACCTACG TCTGCACTAC TAGAAATGCT TCTTACTGTG ACAAAATGTC CATTGAGCTC AGAGTTTTTG AGAATACAGA TGCTTTCCTG CCGTTCATCT CATACCCGCA AATTITAACC TTGTCAACCT CTGGGGTATT AGTATGCCCT GACCTGAGTG AATTCACCG TGACAAAACT GACGTGAAGA
TTCAATGGTA CAAGGATTCT CTTCTTTTGG ATAAAGACAA TGAGAAAATT CTAAGTGTGA GGGGGACCAC TCACTTACTC
GTACACGATG TGGCCCTGGA AGATGCTGGC TATTACCGCT GTGTCCTGAC ATTTGCCCAT GAAGGCCAGC AATACAACAT
CACTAGGAGT ATTGAGCTAC GCATCAAGAA AAAAAAAGAA GAGACCATTC CTGTGATCAT TTCCCCCCTC AAGACCATAT CAGCTTCTCT GGGGTCAAGA CTGACAATCC CGTGTAAGGT GTTTCTGGGA ACCGGCACAC CCTTAACCAC CATGCTGTGG TGGACGGCCA ATGACACCCA CATAGAGAGC GCCTACCCGG GAGGCCGCGT GACCGAGGGG CCACGCCAGG AATATTCAGA AAATAATGAG AACTACATTG AAGTGCCATT GATTTTTGAT CCTGTCACAA GAGAGGATTT GCACATGGAT TTTAAATGTG TTGTCCATAA TACCCTGAGT TTTCAGACAC TACGCACCAC AGTCAAGGAA GCCTCCTCCA CGTTCTCCTG GGGCATTGTG CTGGCCCCAC TTTCACTGGC CTTCTTGGTT TTGGGGGGAA TATGGATGCA CAGACGGTGC AAACACAGAA CTGGAAAAGC AGATGGTCTG ACTGTGCTAT GGCCTCATCA TCAAGACTTT CAATCCTATC CCAAGTGAAA TAAATGGAAT GAAATAATTC AAACACAAAA AAAAAAAA AAAAAAAA GCCGGAGCCG ACTCGGAGCG CGCGCGCGCG CCGGGAGGAG CCGAGCGCGC CGGGCGCGC CGGCGCCCCAG GGAGCGGCAG GAATGTGACA ATCGCGCGCC CGCACCGTAG CACTCCTCGC TCGGCTCCTA GGGCTCTCGC CCTCTGAGCT GAGCCGGGTT CCGCCCGGGC TGGGATCCCA TCACCCTCCA CGGCCGTCCG TCCAGGTAGA CGCACCCTCT GAAGATGGTG ACTCCCTCCT GAGAAGCTGG ACCCCTTGGT AAAAGACAAG
GCCTTCTCCA AGAAGAATAT GAAAGTGTTA CTCAGACTTA TTTGTTTCAT AGCTCTACTG ATTTCTTCTC TGGAGGCTGA TAAATGCAAG GAACGTGAAG AAAAAATAAT TTTAGTGTCA TCTGCAAATG AAATTGATGT TCGTCCCTGT CCTCTTAACC CAAATGAACA CAAAGGCACT ATAACTTGGT ATAAAGATGA CAGCAAGACA CCTGTATCTA CAGAACAAGC CTCCAGGATT CATCAACACA AAGAGAAACT TTGGTTTGTT CCTGCTAAGG TGGAGGATTC AGGACATTAC TATTGCGTGG TAAGAAATTC ATCITACTGC CTCAGAATTA AAATAAGTGC AAAATTTGTG GAGAATGAGC CTAACTTATG TTATAATGCA CAAGCCATAT
TTAAGCAGAA ACTACCCGTT GCAGGAGACG GAGGACTTGT GTGCCCTTAT ATGGAGTTTT TTAAAAATGA AAATAATGAG TTACCTAAAT TACAGTGGTA TAAGGATTGC AAACCTCTAC TTCTTGACAA TATACACTTT AGTGGAGTCA AAGATAGGCT CATCGTGATG AATGTGGCTG AAAAGCATAG AGGGAACTAT ACTTGTCATG CATCCTACAC ATACTTGGGC AAGCAATATC
CTATTACCCG GGTAATAGAA TTTATTACTC TAGAGGAAAA CAAACCCACA AGGCCTGTGA TTGTGAGCCC AGCTAATGAG ACAATGGAAG TAGACTTGGG ATCCCAGATA CAATTGATCT GTAATGTCAC CGGCCAGTTG AGTGACATTG CTTACTGGAA

GTGGAATGGG TCAGTAATTG ATGAAGATGA CCCAGTGCTA GGGGAAGACT ATTACAGTGT GGAAAAATCCT GCAAACAAAA GAAGGAGTAC CCTCATCACA GTGCTTAATA TATCGGAAAT TGAAAGTAGA TTTTATAAAC ATCCATTTAC CTGTTTTGCC AAGAATACAC ATGGTATAGA TGCAGCATAT ATCCAGTTAA TATATCCAGT CACTAATTTC CAGAAGCACA TGATTGGTATA
ATGTGTCACG TTGACAGTCA TAATTGTGTG TTCTGTTTTC ATCTATAAAA TCTTCAAGAT TGACATTGTG CTTTGGTACA
GGGATTCCTG CTATGATTTT CTCCCAATAA AAGCTTCAGA TGGAAAGACC TATGACGCAT ATATACTGTA TCCAAAGACT
GTTGGGGAAG GGTCTACCTC TGACTGTGAT ATTTTTGTGT TTAAAGTCTT GCCTGAGGTC TTGGAAAAAC AGTGTGGATA TAAGCTGTTC ATTTATGGAA GGGATGACTA CGTTGGGGAA GACATTGTTG AGGTCATTAA TGAAAACGTA AAGAAAAGCA GAAGACTGAT TATCATTITA GTCAGAGAAA CATCAGGCTT CAGCTGGCTG GGTGGTTCAT CTGAAGAGCA AATAGCCATG
TATAATGCTC TTGTTCAGGA TGGAATTAAA GTTGTCCTGC TTGAGCTGGA GAAAATCCAA GACTATGAGA AAATGCCAGA ATCGATTAAA TTCATTAAGC AGAAACATGG GGCTATCCGC TGGTCAGGGG ACTTTACACA GGGACCACAG TCTGCAAAGA CAAGGTTCTG GAAGAATGTC AGGTACCACA TGCCAGTCCA GCGACGGTCA CCTTCATCTA AACACCAGTT ACTGTCACCA GCCACTAAGG AGAAACTGCA AAGAGAGGCT CACGTGCCTC TCGGGTAGCA TGGAGAAGTT GCCAAGAGTT CTTTAGGTGC CTCCTGTCTT ATGGCGTTGC AGGCCAGGTT ATGCCTCATG CTGACTTGCA GAGTTCATGG AATGTAACTA TATCATCCTT TATCCCTGAG GTCACCAGGA ATCAGG-3' (FRAG NO:)(SEQ ID NO:11889)
5'-GCCACGTGCT GCTGGGTCTC AGTCCTCCAC TTCCCGTGTC CTCTGGAAGT TGTCAGGAGC AATGTTGCGC TTGTACGTGT TGGTAATGGG AGTTTCTGCC TTCACCCTTC AGCCTGCGGC ACACACAGGG GCTGCCAGAA GCTGCCGGTT TCGTGGGAGG CATTACAAGC GGGAGTTCAG GCTGGAAGGG GAGCCTGTAG CCCTGAGGTG CCCCAGGTG CCCTACTGGT TGTGGGCCTC . TGTCAGCCCC CGCATCAACC TGACATGGCA TAAAAATGAC TCTGCTAGGA CGGTCCCAGG AGAAGAAGAG ACACGGATGT GGGCCCAGGA CGGTGCTCTG TGGCTTCTGC CAGCCTTGCA GGAGGACTCT GGCACCTACG TCTGCACTAC TAGAAATGCT
TCTTACTGTG ACAAAATGTC CATTGAGCTC AGAGTTTTTG AGAATACAGA TGCTTTCCTG CCGTTCATCT CATACCCGCA
AATTTTAACC TTGTCAACCT CTGGGGTATT AGTATGCCCT GACCTGAGTG AATTCACCCG TGACAAAACT GACGTGAAGA TTCAATGGTA CAAGGATTCT CTTCTTTTGG ATAAAGACAA TGAGAAATTT CTAAGTGTGA GGGGGACCAC TCACTTACTC GTACACGATG TGGCCCTGGA AGATGCTGGC TATTACCGCT GTGTCCTGAC ATTTGCCCAT GAAGGCCAGC AATACAACAT CACTAGGAGT ATTGAGCTAC GCATCAAGAA AAAAAAAGAA GAGACCATTC CTGTGATCAT TTCCCCCCTC AAGACCATAT CAGCTTCTCT GGGGTCAAGA CTGACAATCC CGTGTAAGGT GTTTCTGGGA ACCGGCACAC CCTTAACCAC CATGCTGTGG TGGACGCCA ATGACACCCA CATAGAGAGC GCCTACCCGG GAGGCCGCGT GACCGAGGGG CCACGCCAGG AATATTCAGA AAATAATGAG AACTACATTG AAGTGCCATT GATTTTTGAT CCTGTCACAA GAGAGGATTT GCACATGGAT TTTAAATGTG
TTGTCCATAA TACCCTGAGT TTTCAGACAC TACGCACCAC AGTCAAGGAA GCCTCCTCCA CGTTCTCCTG GGGCATTGTG CTGGCCCCAC TTTCACTGGC CTTCTTGGTT TTGGGGGGAA TATGGATGCA CAGACGGTGC AAACACAGAA CTGGAAAAGC AGATGGTCTG ACTGTGCTAT GGCCTCATCA TCAAGACTTT CAATCCTATC CCAAGTGAAA TAAATGGAAT GAAATAATTC AAACACAAAA AAAAAAAAA AAAAAAAA-3' (FRAG. NO:)(SEQ ID NO:11887) 5'-GCCGGAGCCG ACTCGGAGCG CGCGGCGCGG CCGGGAGGAG CCGAGCGCGC CGGGCGCGC GTGGGGGCGC CGGCTGCCCC GCGCGCCCAG GGAGCGGCAG GAATGTGACA ATCGCGCGCC CGCACCGTAG CACTCCTCGC TCGGCTCCTA GGGCTCTCGC CCTCTGAGCT GAGCCGGGTT CCGCCCGGGC TGGGATCCCA TCACCCTCCA CGGCCGTCCG TCCAGGTAGA CGCACCCTCT GAAGATGGTG ACTCCCTCCT GAGAAGCTGG ACCCCTTGGT AAAAGACAAG GCCTTCTCCA AGAAGAATAT GAAAGTGTTA CTCAGACTTA TTTGTTTCAT AGCTCTACTG ATTTCTTCTC TGGAGGCTGA TAAATGCAAG GAACGTGAAG AAAAAATAAT TTTAGTGTCA TCTGCAAATG AAATTGATGT TCGTCCCTGT CCTCTTAACC CAAATGAACA CAAAGGCACT ATAACTTGGT ATAAAGATGA CAGCAAGACA CCTGTATCTA CAGAACAAGC CTCCAGGATT CATCAACACA AAGAGAAACT TTGGTTTGTT CCTGCTAAGG TGGAGGATTC AGGACATTAC TATTGCGTGG TAAGAAATTC ATCTTACTGC CTCAGAATTA AAATAAGTGC AAAATTTGTG GAGAATGAGC CTAACTTATG TTATAATGCA CAAGCCATAT TTAAGCAGAA ACTACCCGTT GCAGGAGACG
GAGGACTTGT GTGCCCTTAT ATGGAGTTTT TTAAAAATGA AAATAATGAG TTACCTAAAT TACAGTGGTA TAAGGATTGC
AAACCTCTAC TTCTTGACAA TATACACTTT AGTGGAGTCA AAGATAGGCT CATCGTGATG AATGTGGCTG AAAAGCATAG AGGGAACTAT ACTIGTCATG CATCCTACAC ATACTTGGGC AAGCAATATC CTATTACCCG GGTAATAGAA TTTATTACTC TAGAGGAAAA CAAACCCACA AGGCCTGTGA TTGTGAGCCC AGCTAATGAG ACAATGGAAG TAGACTTGGG ATCCCAGATA TAGAGGAAAA CAAACCCACA AGGCCTGTGA TTGTGAGCCC AGCTAATGAG ACAATGGAAG TAGACTTGGG ATCCCAGATA
CAATTGATCT GTAATGTCAC CGGCCAGTTG AGTGACATTG CTTACTGGAA GTGGAATGGG TCAGTAATTG ATGAAGATGA
CCCAGTGCTA GGGGAAGACT ATTACAGTGT GGAAAATCCT GCAAACAAAA GAAGGAGTAC CCTCATCACA GTGCTTAATA
TATCGGAAAT TGAAAGTAGA TTTTATAAAC ATCCATTTAC CTGTTTTGCC AAGAATACAC ATGGTATAGA TGCAGCATAT
ATCCAGTTAA TATATCCAGT CACTAATTTC CAGAAGCACA TGATTGGTAT ATGTGTCACG TTGACAGTCA TAATTGTGTG
TTCTGTTTTC ATCTATAAAA TCTTCAAGAT TGACATTGTG CTTTGGTACA GGGATTCCTG CTATGATTTT CTCCCAATAA
AAGCTTCAGA TGGAAAGACC TATGACGCAT ATATACTGTA TCCAAAGACT GTTGGGGAAG GGTCTACCTC TGACTGTGAT ATTITTGTGT TTAAAGTCTT GCCTGAGGTC TTGGAAAAAC AGTGTGGATA TAAGCTGTTC ATTIATGGAA GGGATGACTA CGTTGGGGAA GACATTGTTG AGGTCATTAA TGAAAACGTA AAGAAAAGCA GAAGACTGAT TATCATTTTA GTCAGAGAAA CATCAGGCTT CAGCTGGCTG GGTGGTTCAT CTGAAGAGCA AATAGCCATG TATAATGCTC TTGTTCAGGA TGGAATTAAA GTTGTCCTGC TTGAGCTGGA GAAAATCCAA GACTATGAGA AAATGCCAGA ATCGATTAAA TTCATTAAGC AGAAACATGG GGCTATCCGC TGGTCAGGGG ACTTTACACA GGGACCACAG TCTGCAAAGA CAAGGTTCTG GAAGAATGTC AGGTACCACA TGCCAGTCCA GCGACGGTCA CCTTCATCTA AACACCAGTT ACTGTCACCA GCCACTAAGG AGAAACTGCA AAGAGAGGCT CACGTGCCTC TCGGGTAGCA TGGAGAAGTT GCCAAGAGTT CTTTAGGTGC CTCCTGTCTT ATGGCGTTGC AGGCCAGGTT ATGCCTCATG CTGACTTGCA GAGTTCATGG AATGTAACTA TATCATCCTT TATCCCTGAG GTCACCAGGA ATCAGG-3' (FRAG. NO:)(SEQ ID NO:11888)

0 Human Interleukin-8 Fragments Antisense Oligonucleotide Fragments

5'-GBTGTTTGTT BCCBBBGCBT CBBGBBTBGC TTTGCTBTCT BBGGBTCBCB TTTBGBCBTB GGBBBBCGCT GTBGGTCBGBB
BGBTGTGCTT BCCTTCBCBC BGBGCTGCBG BBBTCBGGBBGG CTGCCBBGBGGG CCBCGGCCBGC TTGGBGTCBT GTTTBCBCBC
BGTGBGGTGC TCCGGTGGCT TTTTGCTTGT GTGCTCTGCT GTCTCTG TTC CTTCCGGTGG TTTCTTCCTG GCTCTTGTCC
TTTCTCTTGG CCCTTGGCCC-3' (FRAG. NO:1834) (SEQ ID NO:11216)

65 5'-G CTC CGG-3' (FRAG. NO:1835) (SEQ ID NO:11217)
5'-CBBGBBTBGC-3' (FRAG. NO:1836) (SEQ ID NO:11218)
5'-CBCBC BGTGBGGTGC-3' (FRAG. NO:1837) (SEQ ID NO:11219)
5'-BCCBBBGCBT CBBGBBTBGC-3' (FRAG. NO:1838) (SEQ ID NO:11220)
5'-GCCBBGBGBG CCBCGGCCBGC-3' (FRAG. NO:1839) (SEQ ID NO:11221)
70 5'-GTG CTC CGG TGG CTT TTT-3' (FRAG. NO:1289)(SEQ ID NO:10667)

5'-GCT TGT GTG CTC TGC TGT TCT TGC TGC TTG TCC T-3' (FRAG. NO:1290)(SEQ ID NO:10668)
5'-TTC CTT CCG GTG GTT TCT TCC TGG CTC TTG TCC T-3' (FRAG. NO:1291)(SEQ ID NO:10669)
5'-TTC TCT TGG CCC TTG GCC C-3' (FRAG. NO:1292)(SEQ ID NO:10670)

5'-GBTGTTTGTT BCCBBBGCBT CBBGBBTBGC TTTGCTBTCT BBGGBTCBCB TTTBGBCBTB GGBBBBCGCT GTBGGTCBGBB BGBTGTGCTT BCCTTCBCBC BGBGCTGCBG BBBTCBGGBBGG CTGCCBBGBGBG CCBCGGCCBGC TTGGBGTCBT GTTTBCBCBC BGTGBGGTGC TCCGGTGGCT TTTTGCTTGT-3' (FRAG. NO:1840) (SEQ ID NO:11222)

Human IL-8 Receptor Alpha Antisense Oligonucleotide Fragments

5-ACAGGGGCTG TAATCTTCATC TGCAGGTGGC ATGCCAGTGA AATTTAGATC ATCAAAATCC CACATCTGTG GATCTGTAAT
ATTTGACATG TCCTCTTCAG TTTCAGCAAT GGTTTGATCT AACTGAAGCA CCGGCCAGGB CBGGGGCTGT BBTCTTCBTC
TGCBGGTGGC BTGCCBGTGB BBTTTBGBTC BTCBBBBTCC CBCBTCTGTG GBTCTGTBBT BTTTGBCBTG TCCTCTTCBG
TTTCBGCBB TGGTTTGBTC TBBCTGBBGC BCCGGCCBGG TGGCTCGGTG CTTCTGCCCC TGTTGTTGCG GCGCTCGGTT
GGTGTGGCCC CTGTGGTGCT TCGTTTCCCC CTCTTTCTCT TTGTTCGGGG GTTCTTGTGG CGGGCTGCTT GTCTCGTTCC3'(FRAG.NO:1841)(SEQ ID NO:11223)

5'-CBGGGGC-3' (FRAG. NO:1842) (SEQ ID NO:11224) 5'-GCBGGTGGC-3' (FRAG. NO:1843) (SEQ ID NO:11225) 5'-GCGGCGCTC-3' (FRAG. NO:1844) (SEQ ID NO:11226)

5'-TGGCTCGGTGCTTCTGCCCC (FRAG. NO:1293)(SEQ ID NO:10671)

15 5'-TGTTGTTGCGGCGCTC (FRAG. NO:1294)(SEQ ID NO:10672)
5'-GGTTGGTGGCCCCTG (FRAG. NO:1295)(SEQ ID NO:10673)
5'-TGGTGCTTCGTTTCC (FRAG. NO:1296)(SEQ ID NO:10674)
5'-CCCTCTTTCTCTTTGTTC (FRAG. NO:1297)(SEQ ID NO:10675)
5'-GGGGGTTCTTGTGGC (FRAG. NO:1298)(SEQ ID NO:10676)

5'-GGGCTGCTTGTCCGTTCC (FRAG. NO:1299)(SEQ ID NO:10677)
5'-ACAGGGGGCTG TAATCTTCATC TGCAGGTGGC ATGCCAGTGA AATTTAGATC ATCAAAATCC CACATCTGTG GATCTGTAAT
ATTTGACATG TCCTCTTCAG TTTCAGCAAT GGTTTGATCT AACTGAAGCA CCGGCCAGG-3' (FRAG. NO:1845) (SEQ ID NO:11227)
5'-B CBGGGGCTGT BBTCTTCBTC TGCBGGTGGC BTGCCBGTGB BBTTTBGBTC BTCBBBBTCC CBCBTCTGTG GBTCTGTBBT
BTTTGBCBTG TCCTCTTCBG TTTCBGCBB TGGTTTGBTC TBBCTGBBGC BCCGGCCBGG-3' (FRAG. NO:1846) (SEQ ID NO:11228)

25 Interleukin-11 (IL-11) Nucleic Acid and Antisnese Oligonucleotide Fragments
5'-GCTCAGGGCA CATGCCTCCC CTCCCCAGGC CGCGGCCCAG CTGACCCTCG GGGCTCCCCC GGCAGCGGAC AGGGAAGGGT
TAAAGGCCCC CGGCTCCCTG CCCCCTGCCC TGGGGAACCC CTGGCCCTGT GGGGACATGA ACTGTGTTTG CCGCCTGGTC
CTGGTCGTGC TGAGCCTGTG GCCAGATACA GCTGTCGCCC CTGGGCCACC ACCTGGCCCC CCTCGAGTTT CCCCAGACCC
TCGGGCCGAG CTGGACAGCA CCGTGCTCCT GACCCGCTCT CTCCTGGCGG ACACGCGGCA GCTGGCTGCA CAGCTGAGGG

ACAAATTCCC AGCTGACGG GACCACACC TGGATTCCCT GCCCACCCTG GCCATGAGTG CGGGGGCACT GGGGGCACT
CAGCTCCCAG GTGTGCTGAC AAGGCTGGA GCGGACCTAC TGTCCTACCT GCGGCACGTG CAGTGGCTGC GCCGGCAGG
TGGCTCTCC CTGAAGACCC TGGAGCCCGA GCTGGGCACC CTGCAGGCC GACTGGACG GCCGGCAGG
TGCTCTTCC CTGAAGACCC TGGAGCCCGA GCTGGGCACC CTGCAGGCC GACTGGACG GCCGCCCCCTC CTCAGCCTGG
GGGGGCATCA GGGCCGCCCA CGCCATCCTG GGGGGGCTGC ACCTGCAGCC GCCCCCCCTC CTCAGCCTGG
GGGGGCATCA GGGCCGCCCA CGCCATCCTG GGGGGGCTGC ACCTGCACCT TGACTGGGCC GTGAGGGGAC
TGCTGTGTGC
TCTGGGGGGA AACAGCCAGG TGATCCCCC GCCATTATCT CCCCCTAGTT AGAGACAGTC CTTCCGTGAG GCCTGGGGA
CATCTTGTGCC TTATTTATAC TTATTTTATTT CAGTAACTACT CCCCCTAGTT AGAGACAGTC CTTCCCCCAC GAGGAGGG
GGACTGGGGT CCCGGGATCT TGGGTCTCC AGAAGTCTG CCACAGACTT CTGCCCTGGC TCTTCCCCAC CTAGGCCTG
GCAGGAACAT ATATTATTTA TTTATAGCAAT TACTTTTCAT TTTGGGTTGCC GAGGAGGG
GCAGGAACAT ATATTATTTA TTTATAGCAAT TACTTTTCAT TTTGGGTTGC CCCCAGGGCC CTCCCCGCTG
TCTCCTCCCC TCCGGGTCT TCGGTCCC CACAGACCTC CTCCCCGGGCC CCCCCCGCGCC
ATCCTCCTGCC CTCCTGACC CTCTCTCCCAAGCCCC CTCCTGGCC CTCCTGGCC
TCTGCTGCC CTCCTGACC CTCTCTGAGC CCCCCAGGCC
ATCCTCTGCC CCCGGATCT TGGGTCTCC AGAAGCAGG GGAAGGGGG GGAAGGGGG GAAAGGGAAG CCTGGGTTT

40 TGTACAAAAAA TGTGAGAAAC CTTTGTGAGA CAGAGAACAG GGAATTAAAT GTGTCATACA TATCC
CAGCTGCGC
CTCCTGCTGC CTCCTGACC CTCTCTGACC CTCCTGCCCC CTCCTGGCC CTCCTGCTC
CTCCTGCCC CTCCTGACC CTCTCTGACC CTCCTGCCCC CTCCTGCCC
CTCCTGCTCC CTCCTGACC CTCCTGCCC CTCCTGCCC CTCCTGCTCC
CTCCTGCTGC CTCCTGACC CTCCTGCCC CTCCTGCTCC CTCCTGCCC CTCCTGCTCC
CTCCTGCTGC CTCCTGACC CTCCTGCCC CTCCTGCTCC CTCCTGCTCC CTCCTGCTCC CTCCTGCCCC
CTCTTGCTCCC CTCCTGCTCC CTCCTGCTCC CTCCTGCTCC CTCCTGCTCC CTCCTGCTCC CTCCT

GCGTCCGGGG GCGGACGGGA GACGCCCGGG CCGCGTCTGC TCCGACGGGC GGGGCAGCCA GAGCCAGGGA GGGAGAGGGA
AGCCCGCCTG GCCCTGCGAC CTGCCCGCG GCGTTCCACC CTGGGACTTA AGACCTCCAG CTCCATCCTC CCTAAGGCCG
GGAGTCCAGG CCCCAGACCC TCCTCCCCGA GACCCAGGAG TCCAGACCCC AGGCCTTCCT CCCTCAGACC TAGGAGTCCA
GGCCCCCAGC CTCTCCTCCC TCAGACCCAG GAGGAGTCCA GACCCCAGTT CCTCCTCCCT CAGACCCGG AGTCCAGCCC
AGGCCTCCT CTCTCAGACC CGGAGTCCAG CCTGAGCTCT CTGCCCCCAG GTGTTTGCCG CCTGGTCCTG
GTCGTGCTGA GCCTGTGGCC AGATACAGCT GTCGCCCCTT GGCCCCCCT CGAGTTTCCC CAGACCCTCG

GTCGTGCTGA GCCTGTGGCC AGATACAGCT GTCGCCCCTG GGCCACCACC TGGCCCCCCT CGAGTTTCCC CAGACCCTCG

GGCCGAGCTG GACAGCACCG TGCTCCTGAC CCGCTCTCTC CTGGCGGCACCA CGCGGCAGCT GGCTGCACAG CTGGTAGGAG

AGACTGGGCT GGGGCCAGCA CAGGAGTGAG AGGCAGAGAG GAACGGAGAG GAGTCTGCGG GCAGCCACTT GGAGGGGTTC

TGGGCTCTCA GGTGGCAGAG TGAGGGAGGG GAAGAGTTGG GGGCCTGGCG TGGGGGATGG AGGGAGCCCC GAGGCTGGGC

AGGGGCCACC TCACAGCTTT TTTCCCTGCC AGAGGGACAA ATTCCCCAGCT GACGGGGACC ACAACCTGGA TTCCCTGCCC

ACCCTGGCCA TGAGTGCAGG GGCACTGGGA GCTCTACAGG TAAGGGCAAG GGAGTGGGCT GGGGACAAGG TGGGAGGCAG

GCAGTGAAGG GGGCGGGAG GATGAGGGGC ACTGGTCGGG TGTTCTCTGA TGTCCCGGCT CTATCCCCAG CTCCCAGGTG

GCAGTGAAGG GGGCGGGAG GATGAGGGGC ACTGGTCGGG TGTTCTCTGA TGTCCCGGCT CTATCCCCAG CTCCCAGGTG

```
TGCTGACAAG GCTGCGAGCG GACCTACTGT CCTACCTGCG GCACGTGCAG TGGCTGCGCC GGGCAGGTGG CTCTTCCCTG
AAGACCCTGG AGCCCGAGCT GGGCACCCTG CAGGCCCGAC TGGACCGGCT GCTGCGCCGG CTGCAGCTCC TGGTATGTCC
TGGCCCCAAG ACCTGACACC CCAGACCCCC ACCCCTGGCC CCAAAATCCT GTGGCCTGAG TCCTTGAAGC CTGAGACCCC
            AGACCCGAGT GCAACAGCCC CGCTCTGAGA CCCTGACACC CTAACAGCCC GCTCTGAGAC CCTGACACCG TAACAGCCCC
           AGGCCTAGAGC CCTGACCCTA ACAGTCCTGC TCTGAGACCC TGACCCTGCA GTCCCAAGAT CCTGTGGCCC TGAGACCCTG
AGGCCCTAGA CCCCCAAATC CTGCCCAGAA ACTTCAAATT CTCACCCAAG ACCCTGAGAC TCCATCATCC ATGACCTCAA
AGTCCCCAGA TCCCAGCCCC TAAGACCCAA GACCCCATCC TGAAGCCCAA AGCCTTGAGA ATTCAAATCC TCACCTCAAG
            ACTTGGAGAC CCTGGCCCCA TGACATTGAA AACCATGGAC CTGGCCAGGC GTGGTGGCTC ACGCCTGTAA TCCCAGCACT TTGGGAGGCC GAGGCAAGTG GATCACCTGA GGTCGGGAGT TCAAGACCAG CCAGACCAAC ATGGTGAAAC CCTGTCTCTA
           CTAAAAATAC AAAATTAGCC AGGCGTGGTG GTGCATGCCT GTAATCCCAG CTACTTGGGA GGCTGAGGCA GGAGAATCGC
TTGAACCTGG GAGGCGGAGG TTGCAGTGAG CCGAGATCGC ACCATTACAC TCCAGCCTGG GCAACAAGAG CAAAACTCCC
           TCTCTCTCAA AAAAAAAAA AAAAAAAAA AAGAAGGAAA AGAAAACCAT GGACCTCAG ACCCTGAGAC CCCAGGCCCCC AGCCCTGAGA TCCTGACATC TTAAAGATCC CAGGCCCTAA GATACAAGAC CTTGACCCAA AGCCAGCCTT GGGACCTGG CTGTACAAAC CCAAGACCTC CAGGACCTAG ACCCCGAGCC CTGAGGCCCT ATGTCTCACT CCCAACATCG AAAACCCTGA
           CACCTCAGAT CCTGAGCCTG CGCCTGTACG ACTCCAAGAC CCTCACTTCC AAAGCCAGGC CCAAAGCCCT GAGACCAGAA GACTTCAAAC CCTGGTTCTT GGGCCTAACT CCAAAGACCC TGGATCTCAA ATTCCAACTT CTAGCTCTGA GACTCCAGCC CTCACCCATG AGTTCCTGAA CTTGAACCCA GAGACCCCAT CTCTAAGACT TCAGCCTTGA GATCCAGGGC CTGACCCTAG
            ACTCGAGCCC ACAGACCTCA GATACTGTCT GTAAAACCCC AGCTCTGGTG GGGAGCAGTG GCTCACTCCT GTAATCCCAA
            GGCAGGGGAG GCCAAGGCAG AAGGACCTCT TGAGGCCATG AGTTTGAGAC AGCCTGGGCA GCATAGCAAG ACTCTGTTTC
           TTAATTATTA TATTATTAT TATTTTTTG AGACAGAGT TCGCGCTCTG TTGCCCAGGC TAGAGTGCAA TGGTGCCATT TCGGCTTGCT GGAACCTCCG CCTCCTGGG TCAAGCGAT TCTCTGCCTC AGCCTCCTG GTAGCTGGGA CTTCAGGTGC ACACTGCCAC ACCCGGATAA TTTTTTTGTA TTTTAGTAGA CACAGGGTTT CACCGTGTTG CCCAGGCTGG TCACAAACTC CTGAGCTCAG GCCATCCGCC CGCCTCGGCC TCCCAAAGCG CTGGGATAAC AGGCGTGACG CCGCGCCTGG CTTCTTAATT
           GTTCTAACAG CAGCGACAAC AACAAAAACC CAGCTCTGAG ATTCCAGCCC CGGCGACTCT AACAGTCCCA GGCCCGATCC CTCACCTAGA ACCGAGATGC CAGCCCTGAC TCCACAGACT TCACCCCCAA CCCCCACACT CAGCTCTGGA AGCCCGTCCT
            GACTCCAGCC TCCATTTTCG GAACCCCACA GCCTGAAGAG CTCCCGGCCT AAACACTTCA CCCCACGCGC CACAGTCCCC
            CTGTGAATAT GCAGCCCCGA TTCAGCTGCA GCTCCACAGC ACCCCTGCCC TGCACCCCC TACCTGTGAC TCACCTCTCT CCTCTCCCCA CAGATGTCCC GCCTGGCCCT GCCCCAGCCA CCCCCGGACC CGCCGGCGCC CCCCCTGGCG
           CCCCCCTCCT CAGCCTGGGG GGGCATCAGG GCCGCCCAG CCATCCTGGG GGGGCTGCAC CTGACACTTG ACTGGGCCGT
GAGGGGACTG CTGCTGCTGA AGACTCGGCT GTGACCCGGG GCCCAAAGCC ACCACCGTCC TTCCAAAGCC AGATCTTATT
TATTTATTTA TTTCAGTACT GGGGGCGAAA CAGCCAGGTG ATCCCCCCGC CATTATCTCC CCCTAGTTAG AGACAGTCCT
            TCCGTGAGGC CTGGGGGGCA TCTGTGCCTT ATTTATACTT ATTTATTTCA GGAGCAGGGG TGGGAGGCAG GTGGACTCCT GGGTCCCCGA GGAGGAGGGG ACTGGGGTCC CGGATTCTTG GGTCTCCAAG AAGTCTGTCC ACAGACTTCT GCCCTGGCTC
            TCCACTTGAG GGCGATTTGT CTGAGAGCTG GGGCTGGATG CTTGGGTAAC TGGGGCAGGG CAGGTGGAGG GGAGACCTCC
           ATTCAGTTGAG GGCGATTTGT CTGAGAGCTG GGGCTGGATG CTTGGGTAAC TGGGGCAGGG CAGGTGGAGG GGAGACCTCC
ATTCAGGTGG AGGTCCCAG TGGGCCGGGC AGCACTGGG AGATGGGTCG GTCACCCAGA CAGCTCTGTG GAGGCAGGGT
CTGAGCCTTG CCTGGGGCCC CGCACTGCAT AGGGCCGTTT GTTTGTTTTT TGAGATGGAG TCTCCGCTC TTGCCTAGGC
TGGAGTGCAG TGAGGCAACT TAAGGTCACT GCAACCTCCA CCTCCCGGGT TCAAGCAATT CTCTGCCTC AGCCTCCCGA
TTAGCTGGGA TCACAGGTGT GCACCACCAT GCCCAGCTAA TTATTTATTT CTTTTGTATT TTTAGTAGAG ACAGGGTTTC
ACCATGTTGG CCAGGCTGGT TTCGAACTCC TGACCTCAGG TGATCCTCCT GCCTCGGCCT CCCCAAAGTGC TGGGATTACA
           GOTOTGAGCC ACCACACCTG ACCCATAGOT CTTCAATAAA TATTTAATGG AAGGTTCCAC AAGTCACCCT GTGATCAACA GTACCCGTAT GGGACAAAGC TGCAAGGTCA AGATGGTTCA TTATGGCTGT GTTCACCATA GCAAACTGGA AACAATCTAG ATATCCAACA GTGAGGGTTA AGCAACATGG TGCATCTGTG GATAGAACGC CACCCAGCCG CCCGGAGCAG GGACTGTCAT
           TCAGGGAGGC TAAGGAGAGA GGCTTGCTTG GGATATAGAA AGATATCCTG ACATTGGCCA GGCATGGTGG CTCACGCCTG
TAATCCTGGC ACTTTGGGAG GACGAAGCGA GTGGATCACT GAAGTCCAAG AGTTTGAGAC CGGCCTGCGA GACATGGCAA
            AACCCTGTCT CAAAAAAGAA AGAATGATGT CCTGACATGA AACAGCAGGC TACAAAACCA CTGCATGCTG TGATCCCAAT
           TITGIGITIT TCTTTCTATA TATGGATTAA AACAAAAATC CTAAAGGGAA ATACGCCAAA ATGITGACAA TGACIGICTC CAGGTCAAAG GAGAGAGGTG GGATTGTGGG TGACTTTTAA TGTGTATGAT TGTCTGTATT TTACAGAATT TCTGCCATGA CTGTGTATTT TGCATGACAC ATTTTAAAAA TAATAAACAC TATTTTTAGA ATAACAGAAT ATCAGCCTCC TCCTCTCCAA
50
            AAATAAGCCC TCAGGAGGGG ACAAAGTTGA CCGCTGATTG AGCCTGTCAG GGCTGTGCAC-3' (FRAG. NO: )(SEQ ID NO: 11892)
            5'-GCTCAGGGCA CATGCCTCCC CTCCCCAGGC CGCGGCCCAG CTGACCCTCG GGGCTCCCCC GGCAGCGGAC AGGGAAGGGT
           TAAAGGCCCC CGGCTCCCTG CCCCTGCCC TGGGGAACCC CTGGCCCTGT GGGGACATGA ACTGTGTTTG CCGCCTGGTC CTGGTCGTCC TGAGCCTGTG GCCAGATACA GCTGTCGCCC CTGGGCCACC ACCTGGCCCC CCTCGAGTTT CCCCAGACCC
           TCGGGCCGAG CTGGACAGCA CCGTGCTCCT GACCCGCTCT CTCCTGGCGG ACACGCGGCA GCTGGCTGCA CAGCTGAGGG
  55
           ACAAATTCCC AGCTGACGGG GACCACAACC TGGATTCCCT GCCCACCCTG GCCATGAGTG CGGGGGCACT GGGAGCTCTA CAGCTCCCAG GTGTGCTGAC AAGGCTGCGA GCGGACCTAC TGTCCTACCT GCGGCACGTG CAGTGGCTGC GCCGGGCAGG
           TGGCTCTTCC CTGAAGACCC TGGAGCCCGA GCTGGGCACC CTGCAGGCCC GACTGGACCG GCTGCTGCGC CGGCTGCAGC
TCCTGATGTC CCGCCTGGCC CTGCCCCAGC CACCCCCGGA CCCGCCGGCG CCCCCCGTGG CGCCCCCCTC CTCAGCCTGG
           GGGGGCATCA GGGCCGCCCA CGCCATCCTG GGGGGGCTGC ACCTGACACT TGACTGGGCC GTGAGGGGAC TGCTGCTGCT
           GAAGACTCGG CTGTGACCCG GGGCCCAAAG CCACCACCGT CCTTCCAAAG CCAGATCTTA TTTATTTATT TATTTCAGTA
CTGGGGGCGA AACAGCCAGG TGATCCCCCC GCCATTATCT CCCCCTAGTT AGAGACAGTC CTTCCGTGAG GCCTGGGGGA
CATCTGTGCC TTATTTATAC TTATTTATTT CAGGAGCAGG GGTGGGAGGC AGGTGGACTC CTGGGTCCCC GAGGAGGAGG
           GGACTGGGGT CCCGGATTCT TGGGTCTCCA AGAAGTCTGT CCACAGACTT CTGCCCTGGC TCTTCCCCAT CTAGGCCTGG
GCAGGAACAT ATATTATTTA TTTAAGCAAT TACTITTCAT GTTGGGGTGG GGACGGAGGG GAAAGGGAAG CCTGGGTTTT
            TGTACAAAAA TGTGAGAAAC CTTTGTGAGA CAGAGAACAG GGAATTAAAT GTGTCATACA TATCC-3' (FRAG. NO: )(SEQ ID
            5-CAGCTGCGGC ATCCTCTGTC TCAGAGTCTT GGTGTCTCTG TTCCTTTCCC CTCGGGGTCT CCCTGGGTCT CCCCAAGTCC
           CTCCTGCTGT CTTCCTCCCG CTCTCTGATC TCTGACTCCC AGAACCTCTC CCCTGGGTCT CCCCAAGTCC
TCTTTGCTTC TCTGGTGTGT CTCTCTGGCT GCCTCCATCT CTGTGGATCT CCGTCTCCCT GTCTCTGTCT CAGTCTGTCC
TTCACTCTGT GTGTGTGTGT GTCTCTCTCT CTCTCTCCCT TCCCTTCCA CTCCCTCTCC CTCCTGCCT CAGTCTGCCC
GCCCCGGAC CCCCACCCAC AGTCGGCCCT AGTCGGCTT TCCGTCCCT TCCCTCCGGC CCGTGGAGGT GQAGGGAGGG
CACCCCCAATG ACCTCACCAC AGTCGGCCC CAGCGCTTGA GCCTGAGTGT CTGCTCCGGC CCGTGGAGGT GQAGGGAGGG
            GACGCCAATG ACCTCACCAG CCCCTCTCCG ACCACCCCCC CCTTTCCCTT TTCAACTTTT CCAACTTTTC CTTCCGTGCC
           CTCCTCCGAG CGCGGCGGCG TGAGCCCTGC AAGGCAGCCG CTCCGTCTGA ATGGAAAAGG CAGGCAGGGA GGGTGAGTCA
```

```
CACACTCCCT CACTGCCGCG GGCCCTGCTG CTCAGGGCAC ATGCCTCCCC TCCCCAGCCG CGGGCCCAGC TGACCCTCGG
       GGCTCCCCCG GCAGCGGACA GGGAAGGGTT AAAGGCCCCC GGCTCCCTGC CCCCTGCCCT GGGGAACCCC TGGCCCTGTG
       GGGACATGAA CTGTAAGTTG GTTCATGGGG AGGGTGGAGG GGACAGGGAG GCAGGGAGGA GAGGGACCCA CGGCGGGGGT
       GGGAGCAGAC CCCGCTGAGT CGCACAGAGA GGGACCCGGA GACAGGCAGC CGGGGAGGAG AGCAGCTTCG GAGACAGGAG
       GCGGCGGAGG AGATGGGCAG AGAGAGACAC AGACAGGAGC GGATGGAGGC AGCCAATCAG AGGCGCCGCA GGAGGGACGG
       GCCAGACAGG GCCCGAGAGG AGCGAGACGC GAGACCGAGC AGGGGCAGGG ACGCAGGGAC TGGTGCCGGG AGGGAGGTGA
       CCCCCATCGA CCCAGGCCCC AGGGAGCCCG CGGGGACCGG GAGACTCCCT GGGATTCCGG CAGAGAGGCT CCGGAGGGAA
       ACTGAGGCAG GGTCCGCGGA GAGCGGAGCA AGCCAGGGAG TAGCGACCCC AGCCGGGGGG AGGAGAGAG CTGGGCGCCG
       GGGGAAAGCG GGGAGAGCCG GGCAGATGCG GCCGACGGAG GCGCGGACAG ACCGACGGCT GGCGGGCCCG GGGGGCGGGC
       TOGGGGTGTG CGAGGCGCGG GCGGCCGGGG AGCGCTGATT GGCTGGCGGG TGGCCGGGTG GGCGGGCGG CCGGGGTGGG
       CTGCGGGGAG CGAGCTCCGG ACCCCGGCGC CCCCGGCGCC CCCGCCGCA GCTCTCCCGC TCCCGGCGCCC
       CGGCCGGGCC ATGGCTCTGC CCCTCTCCGC CCAGGTGCGC TGCGGCCCGG GCTTCTGCCG CCCACCCGGC GGGCTCCTGG
       GAGGGCGTCT AAGGGGTCTC CCGTGGGAGA GGTCCGTGTC TCCCGGACTC CGTCCTGGGC TTTTGGCTCC TTCCCCTGCT CCCAGCCAGC TCGGGCTCCC GCGGCCCGGG GAGGGGGCAG GTTCTGGCCT GTGCCTCCCC CACCATCCGC GCCCCGGGGC
       CCAGATTCCG GCGTCCGGGG GCGGACGGGA GACGCCCGGG CCGCGTCTGC TCCGACGGGC GGGGCAGCCA GAGCCAGGGA
       GGGAGAGGGA AGCCCGCCTG GCCCTGCGAC CTGCCCGCGG GCGTTCCACC CTGGGACTTA AGACCTCCAG CTCCATCCTC CCTAAGGCCG GGAGTCCAGG CCCCAGACCC TCCTCCCCGA GACCCAGGAG TCCAGACCC AGGCCTTCCT CCCTCAGACC
       TAGGAGTICCA GGCCCCCAGC CTCTCCCTCCC TCAGACCCAG GAGGAGTICCA GACCCCAGTT CCTCCTCCCT CAGACCCGGG
AGTICCAGCCC AGGCCCTCCT CTCTCAGACC CGGAGTICCAG CCTGAGCTCT CTGCCTTATC CTGCCCCCAG GTGTTTGCCG
CCTGGTCCTG GTCGTGCTGA GCCTGTGGCC AGATACAGCT GTCGCCCCTG GGCCACCACC TGGCCCCCT CGAGTTTCCC
       CAGACCCTCG GGCCGAGCTG GACAGCACCG TGCTCCTGAC CCGCTCTCTC CTGGCGGACA CGCGGCAGCT GGCTGCACAG CTGGTAGGAG AGACTGGGCT GGGGCCAGCA CAGGAGTGAG AGGCAGAGAG GAACGGAGAG GAGTCTGCGG GCAGCCACTT
       GGAGGGGTTC TGGGCTCTCA GGTGGCAGAG TGAGGGAGGG GAAGAGTTGG GGGCCTGGCG TGGGGGATGG AGGGAGCCCC
       GAGGCTGGGC AGGGGCCACC TCACAGCTTT TTTCCCTGCC AGAGGGACAA ATTCCCAGCT GACGGGGACC ACAACCTGGA TTCCCTGCC ACCCTGGCCA TGAGTGCAGG GGCACTGGGA GCTCTACAGG TAAGGGCAAG GGAGTGGGCT GGGGACAAGG
       TGGGAGGCAG GCAGTGAAGG GGGCGGGGAO GATGAGGGGC ACTGGTCGGG TGTTCTCTGA TGTCCCGGCT CTATCCCCAG
       CTCCCAGGTG TGCTGACAAG GCTGCGAGCG GACCTACTGT CCTACCTGCG GCACGTGCAG TGGCTGCGCC GGGCAGGTGG CTCTTCCCTG AAGACCCTGG AGCCCGAGCT GGGCACCCTG CAGGCCCGAC TGGACCGGCT GCTGCGCCGG CTGCAGCTCC TGGTATGTCC TGGCCCAAG ACCTGACACC CCAGACCCCC ACCCCTGGCC CCAAAATCCT GTGGCCTGAG TCCTTGAAGC CTGAGACCCC AGACCCGAGT GCAACAGCC CGCTCTGAGAC CCTGACACC CTAACAGCC GCTCTGAGAC CCTGACACCC
       TAACAGCCC GCTCTGAGAC CCTGACACC CTAACAGCC GTCTGAGAC CCTGACACC CTAACAGCCC GCTCTGAGAC CCTGACACCC TAACAGCCC GCTCTGAGAC CCTGACACCC TGACACCC TGACACCC GCTCTGAGAC CCTGACACCC TGACACCC TCCTTGAGAC TCCATCACCCCAAG ACCTTGAGAC TCCATCACCCCAAG ACCTTGAGAC TCCATCACCCCAAG ACCTTGAGA ATTCAAATCC TCACCTCAAG ACTTGGAGAC CCTGGCCCCA TGACATTGAA AACCATGGAC CTGGCCCAA AGCCTTGAGA ATTCAAATCC TCCAGCACT TTGGGAGGCC GAGGCAAGT GATCACCTGA GGTCGGGAGT TCAAGACCAG CCAGACCAAC ATGGTGAAAC CCTGTCTCTA CTAAAAATAC AAAATTAGCC AGGCGTGGTG GTGCATGCCT GTAATCCCAG CTACTTGGGA GGCTGAGGCA
       AAAACCCTGA CACCTCAGAT CCTGAGCCTG CGCCTGTACG ACTCCAAGAC CCTCACTTCC AAAGCCAGGC CCAAAGCCCT
       GAGACCAGAA GACTICAAAC CCTGGTTCTT GGGCCTAACT CCAAAGACCC TGGATCTCAA ATTCCAACTT CTAGCTCTGA
GACTCCAGCC CTCACCCATG AGTTCCTGAA CTTGAACCCA GAGACCCCAT CTCTAAGACT TCAGCCTTGA GATCCAGGGC
       CTGACCCTAG ACTCGAGCCC ACAGACCTCA GATACTGTCT GTAAAACCCC AGCTCTGGTG GGGAGCAGTG GCTCACTCCT
       GTAATCCCAA GGCAGGGGAG GCCAAGGCAG AAGGACCTCT TGAGGCCATG AGTTTGAGAC AGCCTGGGCA GCATAGCAAG
       GIANICCCAA GGCAGGGAG GCCAAGGCAG AAGGACTCT TGAGGCCATG AGTTTGAGAC AGCCTGGGCA GCATAGCAAG
ACTCTGTTTC TTAATTATTA TTATTATTAT TATTTTTTGG AGACAGAGTC TCGCGCTCTG TTGCCCAGGC TAGAGTGCAA
TGGTGCCATT TCGGCTTGCT GGAACCTCCG CCTCCTGGGC TCAAGCGATT CTCCTGCCTC AGCCTCTGA GTAGCTGGGA
CTTCAGGTGC ACACTGCAC ACCCGGATAA TTTTTTTTGTA TTTTAGTAGA CACAGGGTTT CACCGTGTTG CCCAGGCTGG
TCACAAACTC CTGAGCTCAG GCCATCCGCC CGCCTCGGCC TCCCAAAGCG CTGGGATAAC AGCGTGACG CCGCGCCTGG
CTTCTTAATT GTTCTAACAG CAGCGACAAC AACAAAAACC CAGCTCTGAG ATTCCAGCCC CGCGCACTCT AACAGTCCCA
GGCCCGATCC CTCACCTAGA ACCGAGATGC CAGCCCTGAC TCCACAGACT TCACCCCCAA CCCCCACACT CAGCTCTGGA
       AGCCCGTCCT GACTCCAGCC TCCATTTTCG GAACCCCACA GCCTGAAGAG CTCCCGGCCT AAACACTTCA CCCCACGCGC CACAGTCCCC CTGTGAATAT GCAGCCCCGA TTCAGCTGCA GCTCCACAGC ACCCCTGCCC TGCACCCCCG CTGCACCCCC
       TACCTGTGAC TCACCTCTCT CCTCTCCCA CAGATGTCCC GCCTGGCCCT GCCCAGCCA CCCCGGACC CGCCGGCGCC
       CCCGCTGGCG CCCCCCTCCT CAGCCTGGGG GGGCATCAGG GCCGCCCACG CCATCCTGGG GGGGCTGCAC CTGACACTTG
ACTGGGCCGT GAGGGGACTG CTGCTGCTGA AGACTCGGCT GTGACCCGGG GCCCAAAGCC ACCACCGTCC TTCCAAAGCC
       AGATCTTATT TATTTATTTA TITCAGTACT GGGGGCGAAA CAGCCAGGTG ATCCCCCGC CATTATCTCC CCCTAGTTAG AGACAGTCCT TCCGTGAGGC CTGGGGGGCA TCTGTGCCTT ATTTATACTT ATTTATTTCA GGAGCAGGGG TGGGAGGCAG GTGGACTCCT GGGTCCCCGA GGAGGAGGGG ACTGGGGTCC CGGATTCTTG GGTCTCCAAG AAGTCTGTCC ACAGACTTCT
       ACGGAGGGGA AAGGGAAGCC TGGGTTTTTG TACAAAAATG TGAGAAACCT TTGTGAGACA GAGAACAGGG AATTAAATGT
       GTCATACATA TCCACTTGAG GGCGATTTGT CTGAGAGCTG GGGCTGGATG CTTGGGTAAC TGGGGCAGGG CAGGTGGAGG
       GTCATACATA TCCACTTGAG GGCGATTTGT CTGAGAGCTG GGGCTGGATG CTTGGGTAAC TGGGGCAGGG CAGGTGGAGG
GGAGACCTCC ATTCAGGTGG AGGTCCCGAG TGGGCGGGC AGCGACTGGG AGATGGGTCG GTCACCCAGA CAGCTCTGTG
GAGGCAGGGT CTGAGCCTTG CCTGGGGCCC CGCACTGCAT AGGGCCGTTT GTTTGTTTTT TGAGATGGAG TCTCGCTCTG
TTGCCTAGGC TGGAGTGCAG TGAGGCAATC TAAGGTCACT GCAACCTCCA CCTCCCGGGT TCAAGCAATT CTCCTGCCTC
AGCCTCCCGA TTAGCTGGGA TCACAGGTGT GCACCACCAT GCCCAGCTAA TTATTTATTT CTTTTGTATT TTTAGTAGAACTCC TGACCTCCAGGTTTC ACCATGTTGG CCAGGCTGGT TTCGAACTCC TGACCTCCAGG TGATCCTCCT CCCCAAAGTGC
       TGGGATTACA GGTGTGAGCC ACCACACCTG ACCCATAGGT CTTCAATAAA TATTTAATGG AAGGTTCCAC AAGTCACCCT
       GTGATCAACA GTACCCGTAT GGGACAAAGC TGCAAGGTCA AGATGGTTCA TTATGGCTGT GTTCACCATA GCAAACTGGA
       AACAATCTAG ATATCCAACA GTGAGGGTTA AGCAACATGG TGCATCTGTG GATAGAACGC CACCCAGCCG CCCGGAGCAG
       GGACTGTCAT TCAGGGAGGC TAAGGAGAGA GGCTTGCTTG GGATATAGAA AGATATCCTG ACATTGGCCA GGCATGGTGG
       CTCACGCCTG TAATCCTGGC ACTITGGGAG GACGAAGCGA GTGGATCACT GAAGTCCAAG AGTTTGAGAC CGGCCTGCGA
       GACATGGCAA AACCCTGTCT CAAAAAAGAA AGAATGATGT CCTGACATGA AACAGCAGGC TACAAAACCA CTGCATGCTG
75
       TGATCCCAAT TTTGTGTTTT TCTTTCTATA TATGGATTAA AACAAAAATC CTAAAGGGAA ATACGCCAAA ATGTTGACAA
```

TGACTGTCTC CAGGTCAAAG GAGAGAGGTG GGATTGTGGG TGACTTTTAA TGTGTATGAT TGTCTGTATT TTACAGAAATT TCTGCCATGA CTGTGTATTT TGCATGACAC ATTTTAAAAA TAATAAACAC TATTTTTAGA ATAACAGAAT ATCAGCCTCC TCCTCTCCAA AAATAAGCCC TCAGGAGGGG ACAAAGTTGA CCGCTGATTG AGCCTGTCAG GGCTGTGCAC-3' (FRAG. NO:_)(SEQ

ID NO:11891) Human GM-CSF Nucleic Acid and Antisense Oligonucleotide Fragments 5'-CTTGBGCBGG BBGCTCTGGG GCBGGGBGCT GGCBGGGGCCC BGGGGGGTGG CTTCCTGCBC TGTCCBGBGT GCBCTGTGCC CBGGCTCCGG GCGGTCCBGCCBTGGGTCTG GGGGCTGGG CTGCBGGCTC CGGGCGGGCG GGTGCGGGCT GCGTGCTGGG TGCTGGGGGC TGCCCCGCAG GCCCTGC-3' (FRAG. NO:1847) (SEQ ID NO:11229) 5'-GBGCBGG BBG-3' (FRAG. NO:1848) (SEQ ID NO:11230) 5'-GBGCBGG BBG-3' (FRAG. NO:1848) (SEQ ID NO:11230)
5'-GCCBCBGCBGCBGC-3' (FRAG. NO:1849) (SEQ ID NO:11231)
5'-GGG TGC GGG C-3' (FRAG. NO:1850) (SEQ ID NO:11232)
5'-GGT CCB GCC BTG GGT CTG GG-3' (FRAG. NO:1300)(SEQ ID NO:10678)
5'-GGC TGG GCT GCB GGC TCC GG-3' (FRAG. NO:1301)(SEQ ID NO:10679)
5'-GCG GGC GGG TGC GGG CTG CGT GCT GGG-3' (FRAG. NO:1302)(SEQ ID NO:10680) 5'-GGC TGC CCC GCA GGC CCT GC-3' (FRAG. NO:1303)(SEQ ID NO:10681) 5-CTTGBGCBGG BBGCTCTGGG GCBGGGBGCT GGCBGGGCCC BGGGGGGTGG CTTCCTGCBC TGTCCBGBGT GCBCTGTGCC CBGGCTCCGG GC-3' (FRAG. NO:1851) (SEQ ID NO:11233) Human Tumor Necrosis Factor (Antisense Oligonucleotide Fragments
5-GCBCCGCCTG GBGCCCTGGG GCCCCCTGT CTTCTTGGGG BGCGCCTCCT CGGCCBGCTC CBCGTCCCGG BTCBTGCTTT CTTGCTGGTG CTCBTGGTGT CCTTTCCGCC CTGGGGCCCC CCTGTCTTCT TGGGGGCCTCT TCCCTCTGGG GGCCGTCTC GGGBGCGTCT GCTGGC-3' (FRAG.NO:1852)(SEQ ID NO:11234) 5'-GGGGCCCCC-3' (FRAG. NO:1853) (SEQ ID NO:11235) 5'- GGG GGC CG TCT-3' (FRAG. NO:1854) (SEQ ID NO:11236) 5'-CCBGGGGBGB GBGGGGCTGG-3' (FRAG. NO:1855) (SEQ ID NO:11237) 5'-GCBCCGCCTG GBGCCCTGGG GCCCCCCTGT CTTCTTGGGG BGCGCCTCCT CGGCCBGCTC CBCGTCCCGG BTCBTGCTTT CTT CCC TCT GGG GGC CG TCT CTC TCC CTC TCT TGC GTC TCT C TCT TTC TCT CTC TCT CTC CTT CCC C TTT CCC GCT CTT TCT TCT C CBG TGC TCB TGG TGT CC-3' (FRAG. NO:1305) (SEQ ID NO:10683)
5'-GCT GBG GGB GCG TCT GCT GGC GCT GGT CCT CTG TCC TTG CTG GTG CTC BTG GTG TCC TTT CC GCC CTG GGG CCC CCC TGT CTT GGG G CCT CTT CCC TCT GGG GGC CG TCT CTC TCC CTC TCT TGC GTC TCT C TCT TTC TCT CTC TCT CTT CCC C TTT CCC GCT CTT TCT GTC TC GGT GTC TGG TTT TCT CTC TCC GCT GGC TGC CTG TCT GGC CTG CGC TCT T GGC CTG CTT GGG CTG GGC TCC GTG TCT C CBG TGC TCB TGG TGT CC GCT GBG GGB GCG TCT GCT GGC-3'(FRAG.NO:1306)(SEQ ID 5'-GCT GGT CCT CTG CTG TCC TTG CTG-3' (FRAG. NO:1655) (SEQ ID NO:11033) 5'-GTG CTC BTG GTG TCC TTT CC-3' (FRAG. NO:1656)(SEQ ID NO:11034)
5'-GCC CTG GGG CCC CCC TGT CTT CTT GGG G-3' (FRAG. NO:1657)(SEQ ID NO:11035) 5'-CCT CTT CCC TCT GGG GGC CG-3' (FRAG. NO:1658)(SEQ ID NO:11036) 5'-TCT CTC TCC CTC TCT TGC GTC TCT C-3' (FRAG. NO:1659)(SEQ ID NO:11037)
5'-TCT TTC TCT CTC TCT CTC CTC CCC C-3' (FRAG. NO:1669)(SEQ ID NO:11038) 5'-TIT CCC GCT CTT TCT GTC TC-3' (FRAG. NO:1661)(SEQ ID NO:11039)
5'-GGT GTC TGG TTT TCT CTC TCC-3' (FRAG. NO:1662)(SEQ ID NO:11040)
5'-GCT GGC TGC CTG TCT GGC CTG CGC TCT T-3' (FRAG. NO:1663)(SEQ ID NO:11041) 55 5'-GCC CCC TCT GGG GTC TCC CTC TGT CCT TGG C-3' (FRAG. NO:1666)(SEQ ID NO:11042)
5'-GCC CCC TCT GGG GTC TCC CTC TGG C-3' (FRAG. NO:1666)(SEQ ID NO:11044) 5'-GTG GTG GTC TTG TTG CTT-3' (FRAG. NO:1667)(SEQ ID NO:11045)
5'-GGG CTG GGC TCC GTG TCT C-3' (FRAG. NO:1668)(SEQ ID NO:11047)
5'-CBG TGC TCB TGG TGT CC-3' (FRAG. NO:1669)(SEQ ID NO:11047) 5'-GCT GBG GGB GCG TCT GCT GGC-3' (FRAG. NO:1670)(SEQ ID NO:11048)

Human Leukotriene C4 Synthase Nucleic Acids and Antisense Oligonucleotide Fragments

5-CTCGGTBGBC GCGCTCGBBC TCGGGTGGGC CGGTGGTGBG CGGCGGCGBCB CGCGGBBGGC CCTGCGCGCC GBGBTCBCCTG CBGGGBGBBG TBGGCTTGCB GCBGGBCTCC CBGGBGGGTG BCBGCBGCCB GTBGBGCTBC CTCGTCCTTC BTGGTBCCGT CGGTGTGGTG GCBCGGGCTG TGTGTGBBGG CGBGCTGGCC CCCGTCTGCT GCTCCTCGTG CCGCCTCGTC CTTCA TGG TA CCGTCGGTGT GGTGGCCTCG GGTGGGCCGG TGGTGGGGCG CGCGCGCTCG CGTGGCTCCG GCTCTTCTTT CCCGGCTCCGT

CGGCCCGGGG GCCTTGGTCT CCCTCGTCCT TCBTGGTBCC G-3' (FRAG. NO:1856) (SEQ ID NO:11238) 70

5'-GCB GCBGGBC-3' (FRAG. NO:1857) (SEQ ID NO:11239) 5'-CCCGGCTCCG-3' (FRAG. NO:1858) (SEQ ID NO:11240) 5'-CGGCCCGGGG GCC-3' (FRAG. NO:1859) (SEQ ID NO:11241) 5'-CB CGCGG-3' (FRAG. NO:1860) (SEQ ID NO:11242)

```
5'-GCC CCG TCT GCT GCT CCT CGT GCC G-3' (FRAG. NO:1307)(SEQ ID NO:10685)
       5'-CCT CGT CCT TCA TGG TAC CGT CGG TGT GGT GGC-3' (FRAG. NO:1308)(SEQ ID NO:10686)
       5'-CTC GGG TGG GCC GGT GGT G-3' (FRAG. NO:1309)(SEQ ID NO:10687)
       5'-GGG CGC GCG CGC TCG CGT-3' (FRAG. NO:1310)(SEQ ID NO:10688)
       5'-GGC TCC GGC TCT TCT TTC CCG GCT CCG TCG GCC CGG GGG CCT TGG TCT C-3'(FRAG.NO:1311)(SEQ ID NO:10689)
       5'-CCT CGT CCT TCB TGG TBC CG-3' (FRAG. NO:1312)(SEQ ID NO:10690)
       5'-CTCGGTBGBC GCGCTCGBBC TCGGGTGGGC CGGTGGTGBG CGCCGCCBCB CGCCGBBGGC CCTGCGCGCC GBGBTCBCCTG
       CBGGGBGBBG TBGGCTTGCB GCBGGBCTCC CBGGBGGGTG BCBGCBGCCB GTBGBGCTBC CTCGTCCTTC BTGGTBCCGT
       CGGTGTGGTG GCBCGGGCTG TGTGTGBBGG CGBGCTGG-3' (FRAG.NO:1861) (SEQ ID NO:11243)
       Human Endothelin-1 Nucleic Acids and Antisense Oligonucleotide Fragments
       5'-BCCGGCGGBG CCGCCBGGGT GGBCTGGGBG TGGGTTTCTC CCCGCCGTTC TCBCCCBCCG CGCTGBGCTC BGCGCCTBBG
       BCTGCTGTTT CTGGBGCTCC TTGGCBBGCC BCBBBCBGCB GBGBGBBBBT CBTGBGCBBB TBBTCCBTTC TGBBBBBBBG
GGBTCBBBBB CCTCCCGTTC CCCGTTCGCC TGGCGCGCC TGCGGGTTCC TCGTGGGTTT CTCCCGGCCG TTCTCCGGTC
       TGTTGCCTTT GTGGGCTTCT TGTCTTTTTG GCTGTTCTTT TCCTGCTTGG CGTCTTTTCC TTTCTTTGTG CTCGGTTGTG GGTCCGCTGG TCCTTTGCCC TGTGTGTTTC TGCTGCCCGT TCGCCTGCG GGTCCTCGGG GTTCCTCGCC GGCTTCTC CGGCTTCTC CGGCTTCTC CGGCTTCTC CTTTGTGGG CTTCTTGTCT TTTTGGCTGT TCTTTTCCTTG CTTTGGCGTCT TTTCCTTTCT
       TTGTGCTCGG TTGTGGGTCC GCTGGTCCTT TGCCCTGTGT GTTTCTGCTG-3' (FRAG. NO:1862) (SEQ ID NO:11244)
       5'-CCGGCGGBG CCGCCBGGGT GGBC-3' (FRAG. NO:1863) (SEQ ID NO:11245) 5'-CCGCCBGGG-3' (FRAG. NO:1864) (SEQ ID NO:11246)
       5'-CCGCCBGGG-3' (FRAG. NO:1864) (SEQ ID NO:11246)
5'-GGCGCGCGC-3' (FRAG. NO:1865) (SEQ ID NO:11247)
5'-CTGGGTCCGC-3' (FRAG. NO:1866) (SEQ ID NO:11248)
5'-CCCGTTCGCCTGGCGC-3' (FRAG. NO:1313) (SEQ ID NO:10691)
5'-GCGCTGCGGGTTCCTC-3' (FRAG. NO:1314) (SEQ ID NO:10692)
5'-GTGGGTTTCTCCCCGCCGTTCTC-3' (FRAG. NO:1315) (SEQ ID NO:10693)
20
25
       5'-CGGTCTGTTGCCTTTGTGGG -3' (FRAG. NO:1316)(SEQ ID NO:10694)
       5'-CTTCTTGTCTTTTTGGCT-3' (FRAG. NO:1317)(SEQ ID NO:10695)
5'-GTTCTTTTCCTGCTTGGC-3' (FRAG. NO:1318)(SEQ ID NO:10696)
      5'-GTTCTTTTCCTGCTTGGC-3' (FRAG. NO:1318)(SEQ ID NO:10696)
5'-GTCTTTTCCTTTCTT-3' (FRAG. NO:1319)(SEQ ID NO:10697)
5'-TGTGCTCGGTTGTGGGTC-3' (FRAG. NO:1320)(SEQ ID NO:10698)
5'-CGCTGGTCCTTTGCC-3' (FRAG. NO:1321)(SEQ ID NO:10700)
5'-CCCGTTCGCCTGCGCG-3' (FRAG. NO:1322)(SEQ ID NO:10701)
5'-GCGCTGCGGGTTCCTC-3' (FRAG. NO:1323)(SEQ ID NO:10702)
5'-GTGGGTTTCTCCCCGCCGTTCTC-3' (FRAG. NO:1325)(SEQ ID NO:10703)
5'-CGGTCTGTGTTGTGGGG-3' (FRAG. NO:1325)(SEQ ID NO:10704)
30
35
       5'-CTTCTTGTCTTTTTGGCT-3' (FRAG. NO:1327)(SEQ ID NO:10705)
5'-GTTCTTTTCCTGCTGGC-3' (FRAG. NO:1328)(SEQ ID NO:10706)
5'-GTCTTTTCCTTTCTT-3' (FRAG. NO:1329)(SEQ ID NO:10707)
5'-TGTGCTCGGTTGTGGGTC-3' (FRAG. NO:1330)(SEQ ID NO:10708)
40
       5'-CGCTGGTCCTTTGCC-3' (FRAG. NO:1331)(SEQ ID NO:10709)
       5'-CTGTGTGTTTCTGCTG-3' (FRAG. NO:1332)(SEQ ID NO:10710)
       Endothelin Receptor ET-B Nucleic Acids and Antisense Oligonucleotide Fragments
       5'-GCCCTGTCGG GCGGGAAGCC TCTCTCCTCT CCCCAGATC CGCGACAGGC CGCAGGCAAG AACCAGCGCA ACCAGGGCGC
       GTCCGCACAG ACTIGGAGGC GGCTGCATGC TGCTACCTGC TCCAGAAGCG TCCGGTGGCC GCCGCGCC CTGTCGGGCG
       GGBBGCCTCT CTCCTCTCCC CBGBTCCGCG BCBGGCCGCB GGCBBGBBCC BGCGCBBCCB GGGCGCGTCC GCBCBGBCTT
       GGBGGCGGCT GCBTGCTGCT BCCTGCTCGGGCG GGBBGCCTCCG GTGGCCGCCG CGCGTCCGGT GGCCGCCGCG CCTCTCTCCT
       CTCCCCGTGG CCCTGTCGGG CGGGTCCTGC CGTCCTGTCT CCTTTTCTT TGCTGTCTTG TCTTCCCGTC TCTGCTTT-3' (FRAG.
       NO: 1867) (SEQ ID NO:11249)
       5'-CGGGCG GGBBGCC-3' (FRAG. NO: 1868) (SEQ ID NO:11250)
       5'-CGGGCGGG-3' (FRAG. NO: 1869) (SEQ ID NO:11250)
5'-CGCBCBGBC-3' (FRAG. NO: 1870) (SEQ ID NO:11251)
5'-GCGTCCGGTGGCCGCCGC-3' (FRAG. NO:1333)(SEQ ID NO:10711)
       5'-GCCTCTCTCCCCC-3' (FRAG. NO:1334)(SEQ ID NO:10712)
       5'-GTGGCCCTGTCGGGCGGG-3' (FRAG. NO:1335)(SEQ ID NO:10713)
5'-TCCTGCCGTCCTGTCTCCTTT-3' (FRAG. NO:1336)(SEQ ID NO:10714)
5'-TCTTTTGCTGTCTTGT-3' (FRAG. NO:1337)(SEQ ID NO:10715)
55
       5'-CTTCCCGTCTCTGCTTT-3' (FRAG. NO:1338)(SEQ ID NO:10716)
       5'-GCCTGTCGG GCGGGAAGCC TCTCTCCTCT CCCCAGATC CGCGACAGGC CGCAGGCAAG AACCAGCGCA ACCAGGGCGC GTCCGCACAG ACTTGGAGGC GGCTGCATGC TGCTACCTGC TCCAGAAGCG TCCGGTGGCC GCCGC-3' (FRAG. NO: 1871) (SEQ
60
       ID NO:11253)
       5'-GCCCTGTCGG GCGGGBBGCC TCTCTCCTCT CCCCBGBTCC GCGBCBGGCC GCBGGCBBGB BCCBGCGCB BCCBGGGCGC
       GTCCGCBCBG BCTTGGBGGC GGCTGCBTGC TGCTBCCTGC TCCBGBBGCG TCCGGTGGCC GCCGC-3' (FRAG, NO: 1872) (SEO
       ID NO:11254)
       Endothelin ETA Receptor Nucleic Acids and Antisense Oligonucleotide Fragments
5-GTCTGTCCTC CCCGTCTCCT CCCACTGCTT CTCCCGGGGG CTTCCCCGGC TTCGGGTGGC CGGTGTCCCG GGCTCCGGCG
       CGGCGCCGC TTCGGCTGCG GGTGGGTGGC GCGGCTGCC GGGTCCGCGC GGCGCCTGGG CCCTTGTGCT GCTTTTTGCT
```

```
BTCCBBCCBG TGCCBGCCBB BBGGBTGCCC TGBGGCBBBG GGTTTCCBTC TTGBGGCBBB TTTGBGGB-3' (FRAG. NO:1873)
       (SEO ID NO:11255)
        5'-GBGGCBBBGGG-3' (FRAG. NO:1874) (SEQ ID NO:11256)
        5'-GCCBGCCBB BBGGB-3' (FRAG. NO:1875) (SEQ ID NO:11257)
        5'-CGCCTGGGCC C-3' (FRAG. NO:1876) (SEQ ID NO:11258)
        5'-GTCTGTCCTCCCCGTCTCCCC-3' (FRAG. NO:1339)(SEO ID NO:10717)
        5'-ACTGCTTCTCCCGGGG-3' (FRAG. NO:1340)(SEQ ID NO:10718)
        5'-GCTTCCCCGGCTTC-3' (FRAG. NO:1341)(SEQ ID NO:10719)
        5'-GGCTTCGGCTGC-3' (FRAG. NO:1343)(SEQ ID NO:10721)
        5'-GGGTGGGTGGCGCGG-3' (FRAG. NO:1344)(SEQ ID NO:10722)
        5'-GCTGCCGGGTCCGCGCGCGCCCTGGGCC-3' (FRAG. NO:1345)(SEQ ID NO:10723)
        5'-CTTGTGCTGCTTTT-3' (FRAG. NO:1346(SEQ ID NO:10724)
5'-TGCTTGTTCCGTTC-3' (FRAG. NO:1347)(SEQ ID NO:10725)
        5'-TGGCTGCTCCGGTCTGTTGTTGTGGTTGTTTTG-3' (FRAG. NO:1348)(SEQ ID NO:10726)
        5'-TTTCTTCTTGGGTGTGGG-3' (FRAG. NO:1349)(SEQ ID NO:10727)
        5'-CCTTGCGGTTTTGG-3' (FRAG. NO:1350)(SEQ ID NO:10728)
        5'-CTGTGGGCCCTTTG-3' (FRAG. NO:1351)(SEQ ID NO:10729)
        5'-GGGCCTTGGCTTCTGGCTC-3' (FRAG. NO:1352)(SEQ ID NO:10730)
        5'-CATCCACATG ATTGCTTAGA TTTGTGCTGT ATCTCTCAGG ATTATCACTG ATTACACATC CAACCAGTGC CAGCCAAAAG
        GATGCCCTGA GGCAAAGGGT TTCCATCTTG AGGCAAATTT GAGGA-3' (FRAG.NO:1353) (SEQ ID NO:10731)
5'-CBTCCBCBTG BTTGCTTBGB TTTGTGCTGT BTCTCCBGG BTTBTCBCTG BTTBCBCBTC CBBCCBGTGC CBGCCBBBBG
        GBTGCCCTGB GGCBBBGGGT TTCCBTCTTG BGGCBBBTTT GBGGB-31 (FRAG. NO:1354)(SEQ ID NO:10732)
        Endothelin Receptor A Nucleic Acid and Antisense Oligonucleotide Fragments
        5'-GCCACCATGG AAACCCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG
       ATACAGCACA AATCTAAGCA ATCATGTGGA TGATTTCACC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACTC ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACTAT TGCCCACAGC AGACTAAAAT TACTTCAGCT TTCAAATACA TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCACACTCTGC TCAGGATCAT
       TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TTCTGCTTGG TTGTAATTTT TGCTCTTTGC TGGTTCCCTC
       TTCATTTAAG CCGTATATTG AAGAAAACTG TGTATAACGA GATGGACAAG AACCGATGTG AATTACTTAG TTTCTTACTG CTCATGGATT ACACTGGTAT TAACTTGGCA ACCATGAATT CATGTATAAAA CCCCATAGCT CTGTATTTTG TGAGCAAGAA ATTTAAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG
        GAACAAGCAT CCAGTGGAAG AACCACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG CATGAACTGA
       CCACCCTTAG AAGCACTCCT GAATTCGGGA AAAAGTGAAG GTGTAAAAGC AGCACAAGTG CAATAAGAGA TATTTCCTCA AATTTGCCTC AAGATGGAAA CCCTTTGCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA CAGCACAAAT CTAAGCAATC ATGTGGATGA TTTCACCACT TTTCGTGGCA CAGAGCTCAG CTTCCTGGTT
       ACCACTCATC AACCCACTAA TTTGGTCCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAAAATTAC TTCAGCTTTC AAATACATTA ACACTGTGAT ATCTTGTACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT TTGGCGTATT TCTTTGCAAG CTGTTCCCCT TTTTGCAGAA GTCCTCGGTG GGGATCACCG TCCTCAACCT CTGCGCTCTT AGTGTTGACA GGTACAGAGC AGTTGCCTCC TGGGGTCGT TTCAGGGAAT TGGGGATCCT TTGGTAACTG CCATTGAAAT TGTCTCCATC
       TGGATCCTGT CCTTTATCCT GGCCATTCCT GAAGCGATTG GCTTCGTCAT GGTACCCTTT GAATATAGGG GTGAACAGCA
TAAAACCTGT ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT
ATTTCTGTAT GCCCTTGGTG TGCACTGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC
50
      TTGAGAATTG CCCTCAGTGA ACATCITAAG CAGCGTCGAG AAGTGGCAAA AACAGTTTC TGCTTGGTTG TAATTTTTGC
TCTTGCTGG TTCCCTCTTC ATTTAAGCCG TATATTGAAG AAAACTGTGT ATAACGAGAT GGACAAGAAC CGATGTGAAT
TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAACCC CATAGCTCTG
TATTTTGTGA GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC
CTCGGTCCCC ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA
```

TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA AACAGATTTC TGCTTGGTTG TAATTTTTGC TCCTTGCTGG TCCCTCTTC ATTTAAGCCG TATATTGAAG AAAACTGGTGT
ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC
ATGAATTCAT GTATAAACCC CATAGCTCTG TATTTTGTGA GCAAGAAATT TAAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT GAACTGACCA CCCTTAGAAG CACTCCTCGG TACTCCCATA ATCCTCTCGG AGAAAAAAAT CACAAGGCAA CTGTGAGTCC GGGAATCTCT TCTCTGATCC TTCTTCCTTA ATTCACTCCC ACACCCAAGA AGAAATGCTT TCCAAAACCG CAAGGGTAGA CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTTCTT TAATTGATCT AATTTACATA TTCTGCGTGT TGTATTCAGC ACTAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTACTACTTT TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT
GGTGAATGTT CAATGGGAAC TGGTCACCAT GAAACTTTAG AGATTAACGA CAAGATTTTC TACTTTTTTT AAGTGATTTT TTTGTCCTTC AGCCAAACAC AATATGGGCT CAAGTCACTT TTATTTGAAA TGTCATTTGG TGCCAGTATC CCGAATTC-3' (FRAG. NO:___) (SEQ ID NO:12383) 5'-GAATTCGGGA AAAAGTGAAG GTGTAAAAGC AGCACAAGTG CAATAAGAGA TATTTCCTCA AATTTGCCTC AAGATGGAAA CCCTTTGCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA CAGCACAAAT CTAAGCAATC ATGTGGATGA TTTCACCACT TTTCGTGGCA CAGAGCTCAG CTTCCTGGTT ACCACTCATC AACCCACTAA TTTGGTCCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAAAATTAC TTCAGCTTTC AAATACATTA ACACTGTGAT ATCTTGTACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATITA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG ATCTCCCTAT CAATGTATIT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT TTGGCGTATT TCTTTGCAAG CTGTTCCCCT TTTTGCAGAA GTCCTCGGTG GGGATCACCG TCCTCAACCT CTGCGCTCTT AGTGTTGACA GGTACAGAGC AGTTGCCTCC TGGAGTCGTG TTCAGGGAAT TGGGATTCCT TTGGTAACTG CCATTGAAAT TGTCTCCATC TGGATCCTGT CCTTTATCCT GGCCATTCCT GAAGCGATTG GCTTCGTCAT GGTACCCTTT GAATATAGGG GTGAACAGCA TAAAACCTGT ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT GCCCTTGGTG TGCACTGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA AACAGTTTTC TGCTTGGTTG TAATTTTTGC TCTTTCGTTG TTCCTCTTC ATTTAAGCCG TATATTGAAG AAAACTGTGT ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAACCC CATAGCTCTG TATTTTGTGA GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC ATGAACGGAA CAAGCATCAA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT GAACTGACCA CCCTTAGAAG CACTCCTCGG TACTCCCATA ATCCTCTCGG AGAAAAAAAT CACAAGGCAA CTGTGAGTCC GGGAATCTCT TCTCTGATCC TTCTTCCTTA ATTCACTCCC ACACCCAAGA AGAAATGCTT TCCAAAAACCG CAAGGGTAGA CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTTCTT TAATTGATCT AATTTACATA TTCTGCGTGT TGTATTCAGC ACTAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTACTACTTT TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT GGTGAATGTT CAATGGGAAC TGGTCACCAT GAAACTTTAG AGATTAACGA CAAGATTTTC TACTTTTTTT AAGTGATTTT TTTGTCCTTC AGCCAAACAC AATATGGGCT CAAGTCACTT TTATTTGAAA TGTCATTTGG TGCCAGTATC CCGAATTC-3' (FRAG. NO:__) (SEQ ID NO:11851)
5'-GAATTCGGGA AAAAGTGAAG GTGTAAAAGC AGCACAAGTG CAATAAGAGA TATTTCCTCA AATTTGCCTC AAGATGGAAA CCCTTTGCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA CAGCACAAAT CTAAGCAATC ATGTGGATGA TTTCACCACT TTTCGTGGCA CAGAGCTCAG CTTCCTGGTT ACCACTCATC AACCCACTAA TTTGGTCCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAAAATTAC TTCAGCTTTC AAATACATTA ACACTGTGAT ATCTTGTACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT TTGGCGTATT TCTTTGCAAG CTGTTCCCCT TTITIGCAGAA GTCCTCGGTG GGGATCACCG TCCTCAACCT CTGCGCTCTT AGTGTTGACA GGTACAGAGC AGTTGCCTCC
TGGAGTCGTG TTCAGGGAAT TGGGATTCCT TTGGTAACTG CCATTGAAAT TGTCTCCATC TGGATCCTGT CCTTTATCCT
GGCCATTCCT GAAGCGATTG GCTTCGTCAT GGTACCCTTT GAATATAGGG GTGAACAGCA TAAAACCTGT ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT GCCCTTGGTG
TGCACTGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA AACAGTTTTC TGCTTGGTTG TAATTTTTGC TCTTTGCTGG TTCCCTCTTC
ATTTAAGCCG TATATTGAAG AAAACTGTGT ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAACCC CATAGCTCTG TATTTTGTGA GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC ATGAACGGAA CAAGCATCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCG AGCAGCCATA AGGACAGCAT GAACTGACCA CCCTTAGAAG CACTCCTCGG TACTCCCATA ATCCTCTCGG AGAAAAAAAT CACAAGGCAA CTGTGAGTCC GGGAATCTCT TCTCTGATCC TTCTTCCTTA ATTCACTCCC ACACCCAAGA AGAAATGCTT TCCAAAAACCG CAAGGGTAGA CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTTCTT TAATTGATCT AATTTACATA TTCTGCGTGT TGTATTCAGC ACTAAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTACTACTIT TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT GGTGAATGTT CAATGGGAAC TGGTCACCAT GAAACTTTAG AGATTAACGA CAAGATTITC TACTTTTTTT AAGTGATTIT TTTGTCCTTC AGCCAAACAC AATATGGGCT CAAGTCACTT TTATTTGAAA TGTCATTTGG TGCCAGTATC CCGAATTC-3'(FRAG. NO:___) (SEQ ID NO:11839) 5'-GCCACCATGG AAACCCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG ATACAGCACA AATCTAAGCA ATCATGTGGA TGATTTCACC ACTITTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACTC
ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACTAT TGCCCACAGC AGACTAAAAT TACTTCAGCT
TTCAAATACA TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCACACTCTGC TCAGGATCAT
TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA
TTGATCTCCC TATCAATGTA TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC AAGCTGTTCC
CCTTTTTGCA GAAGTCCTCG GTGGGGATCA CCGTCCTCAA CCTCTGCGCT CTTAGTGTTG ACAGGTACAG AGCAGTTGCC TCCTGGAGTC GTGTTCAGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCCTCC ATCTGGATCC TGTCCTTTAT CCTGGCCATT CCTGAAGCGA TTGGCTTCGT CATGGTACCC TTTGAATATA GGGGTTGGACA GCATAAAACC TGTATGCTCA ATGCCACATC AAAATTCATG GAGTTCTACC AAGATGTAAA GGACTGGTGG CTCTTCGGGT TCTATTTCTG TATGCCCTTG GTGTGCACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTTGAACAG AAGGAATGGC AGCTTGAGAA TTGCCCTCAG
TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TTCTGCTTGG TTGTAATTTT TGCTCTTTGC TGGTTCCCTC
TTCATTTAAG CCGTATATTG AAGAAAACTG TGTATAACGA GATGGACAAG AACCGATGTG AATTACTTAG TTTCTTACTG CTCATGGATT ACATCGGTAT TAACTTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGTATTTTG TGAGCAAGAA

ATTTAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG GAACAAGCAT CCAGTGGAAG AACCACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG CATGAACTGA CCACCCTTAG AAGCACTCCT-31 (FRAG. NO:) (SEQ ID NO:12486)

Substance P Antisense Nucleic Acids and Oligonucleotide Antisense Oligonucleotide Fragments

- 5'-CTGCTGBGGC TTGGGTCTCC GGGCGBTTCT CTGCBGBBGB TGCTCBBBGG GCTCCGGCBG TTCCTCCTTG BTCTGGTCGCT GTCGTBCCBG TCGGBCCBGT BBTTCBGBTC BTCBTTGGCT CCTBTTTCTT CTGCBBBCBG CTGBGTGGBG BCBBGBBBBB BGBCTGCCBB GGCCBCGBGG BTTTTCBTGT TGGBTTTTGC GBCGGBCBGT CCCGCGGGGT GCTGAGTTTC TCTGGTTCCT CCGBGCGCBC GTGGTCGCTC CGCGTTTCTC TGGTTCCTCC GGTCCCGCGG GGTGCTGTCT GGTCGCTGTC GTGGCTTGGG TCTCCGGGCG GTTTCCTTCC TTTTCCGC-3' (FRAG. NO:1877) (SEQ ID NO:11259)
- 5'-CTCC GGGCGB-3' (FRAG. NO:1878) (SEQ ID NO:11260) 5'-GGCCBCGBGG-3' (FRAG. NO:1879) (SEQ ID NO:11261) 5'-GGGTCTCCGGGCG-3' (FRAG. NO:1880) (SEQ ID NO:11262) 5'-GGGTCTCCGGGCG G-3' (FRAG. NO:1881) (SEQ ID NO:11263) 5'-CGTGGTCGCTCCGC-3' (FRAG. NO:1355)(SEQ ID NO:10733)
- 5'-GTTTCTCTGGTTCCTCCG-3' (FRAG. NO:1356)(SEO ID NO:10734) 5'-GTCCCGCGGGGTGCTG-3' (FRAG. NO:1357)(SEQ ID NO:10735) 5'-TCTGGTCGCTGTCGT-3' (FRAG. NO:1358)(SEQ ID NO:10736) 5'-GGCTTGGGTCTCCGGGCG-3' (FRAG. NO:1359)(SEQ ID NO:10737) 5'-GTTTCCTTCCTTTTCCGC-3' (FRAG. NO:1360)(SEQ ID NO:10738)
- 5-CTGCTGBGGC TTGGGTCTCC GGGCGBTTCC CTGCBGBBGB TGCTCBBBGG GCTCCGGCBG TTCCTCCTTG BTCTGGTCGCT GTCGTBCCBG TCGGBCCBGT BBTTCBGBTC BTCBTTGCT CCTBTTTCTT CTGCBBBCBG CTGBGTGGBG BCBBGBBBBB BGBCTGCCBB GGCCBCGBGG BTTTTCBTGT TGGBTTTTCC GBCGGBCBGT CCCGCGGGGT GCTGAGTTTC TCTGGTTCCT CCGBGCGCB-3' (FRAG. NO:1882) (SEQ ID NO:11264)

- Substance P Receptor Nucleic Acids and Antisense Oligonucleotide Fragments
 5-GGCTBBGBT GBTCCBCBTC BCTBCCBCGT TGCCCBCCBC BGBGGTCBCC BCBBTGBCCG TGTBGGCBGC TGCCCBBBGG BCBBTTTGCC BGGCTGGTTG CBCGBBCTGB TTGGGTTCCG BGGTGTTBGT GGBGBTGTTT GGGGBGBGGT CTGBGTCCBC CGGGBGGBCG TTBTCCBTTT CGBBGCTBGG CGGTBBBGCC CTBCTBTCTG TBCBCBBCCC CCCTCTGCBG CBGBGTCCTG TCGTGGCGCC TGGGGCTCBG GGTCCGGCC TAAGATGATC CACATCACTA CCACGTTGCC CACCACAGAG GTCACCACAA TGACCGTGTA GGCAGCTGCC CAAAGGACAA TTTGCCAGGC TGGTTGCACG AACTGATTGG GTTCCGAGGT GTTACTGGAG ATGTTTGGGG AGAGGTCTGA GTCCACCGGG AGGACGTTAT CCATTTCGAA GCTAGGCGGT AAAGCCCTAC TATCTGTACA CAACCCCCCT CTGCAGCAGA GTCCTGTCGT GGCGCCTGGG GCTCAGGGGT CGTCCTGTCG TGGCGCCTGG GGCTCTTCTT
- TTGTGGGCTC TTTGGTGGCT GTGGCTGTGG TCTCTGTGGT TGCTGCCCTG GGTCTGGGGG TGTGGCCTTG GGGCCGTCCT CTGGCTCCTC CTCGTGGGCC CCC-3' (FRAG. NO:1883) (SEQ ID NO:11265) 5'-GGGBGGBCG-3' (FRAG. NO:1884) (SEQ ID NO:11266)
- 5'-GGGTC CG-3' (FRAG. NO:1885) (SEQ ID NO:11267) 5-'GGGCC CCC-3' (FRAG. NO:1886) (SEQ ID NO:11268)
 - 5'-GTCCTGTGGGGCTC-3' (FRAG. NO:1361)(SEQ ID NO:10739)
 5'-TTCTTTTGTGGGCT-3' (FRAG. NO:1362)(SEQ ID NO:10740)
 5'-CTTTGGTGGCTGTGGCTG-3' (FRAG. NO:1363)(SEQ ID NO:10741)
- 5'-TGGTCTCTGTGGTTG-3' (FRAG. NO:1364)(SEQ ID NO:10742) 5'-CTGCCCTGGGTCTGG-3' (FRAG. NO:1365)(SEQ ID NO:10743)
- - 5'-GGGTGTGGCCTTGGGGCCGTCCTCTGGCTCCTCGTGGGCCCCC (FRAG.NO:1366)(SEQ ID NO:10744)
 5'-GGGCTAAGAT GATCCACATC ACTACCACGT TGCCCACCAC AGAGGTCACC ACAATGACCG TGTAGGCAGC TGCCCAAAGG
- ACAATITGCC AGGCTGGTTG CACGAACTGA TTGGGTTCCG AGGTGTTAGT GGAGATGTTT GGGGAGAGGT CTGAGTCCAC CGGGAGGACG TTATCCATTTC GAAGCTAGGC GGTAAAGCCC TACTATCTGTA CACAACCCCC CTCTGCAGCA GAGTCCTGTC
- GTGGCGCCTG GGGCTCAGGGTCC-3'(FRAG.NO:1367)(SEQ ID NO:10745) 5'-GGGCTBBGBT GBTCCBCBTC BCTBCCBCGT TGCCCBCCBC BGBGGTCBCC BCBBTGBCCG TGTBGGCBGC TGCCCBBBGG BCBBTTTGCC BGGCTGGTTG CBCGBBCTGB TTGGGTTCCO BGGTGTTBGT GGGGBGBGGTC TGBGTCCBCC GGGBGGBCGT TBTCCBTTTC GBBGCTBGGC GGTBBBGCCC TBCTBTCTGTB CBCBBCCCCC CTCTGCBGCB GBGTCCTGTC GTGGCGCCTG GGGCTCBGGG TCC-3' (FRAG. NO:1368) (SEQ ID NO:10746)

- Chymase Antisense Nucleic Acids and Oligonucleotides Antisense Oligonucleotide Fragments
 5-GGBGCTGBTB CTGCBGATTT CBGBGGGBBG BBCCCTGBTB CTCBCCBGCT TCBGCTCTGG BGCBCBBGBG BBBGBGCBGC BGGGGGBGBG GBBGBBGCBG CBTCTTCCCB GBGBGGCTGC CTGBGCBBBT GCTGGTTTTC CTTTCCBGTC TTGGGTTTTB
- GGGCTCTCCT CTGTCTCTGT GTCCTTGCCC TGGCCCTCTT CCCTCTCGT TCTCCTGTCC CTGTGTTCCG CCCGTCTTCC
- TCCCAGTTAA TACATAATCA ATATGCAATT TATTAATACA TCTCCCATG TCCACCCC CTGTATCTTG CCATTCTTGA
 CCTGCATTTC CATCCTCCTT ACCTTCCCTA GAGGCCAACT CATTTTCTTT GAAAAACCTG GCATTTCCCA GAAAAAAAAG
 TGAAGGCTG GGAGCTGTCC GTTGTCCTGA TTTGCTCCCT CTGCCCTTGC TTCCAAATGT GGTTGGAAAG AAGCACTATT
 GAAAAATCCC TAAACGCACC CCTGCAGGGT TGGCTCTACC CTGTAGCCAT GGACACATGC TGTTGATACC ACCTGCCTCA
 TGAGTCTCAA ATAATTTGCC CTTTCACACT ATCTACCCCA TCAGCCTTAC CAAAACCATA CCTGCATCCT GGGCAGCATC
- TGCCCTTCAA GAGACTAAGG AATCTCCTTG CAACCAAGAA TGACTAGACC AATGAGACAC CCTTTAAGGC CCCAGCACAA
 TATAGAAATC CCACAATATG GTAATCCCAG TAAGGAGCTA TCAAGCCATT GCAGGACCAT CTAGAATACA ACTAGAGTAT AGTICCTITC AATCCAGGAA CTATACTCTA ACAGCTTGGC TCACAGGAC CAGAAGTGAA GATGATGAG ATCAGGGTG
 AGCCTGTGAG CACCAGGAC CACACCACA ATTAAACAAG CATCTTGTG ACCCTGGGA TGGAAAGAAT
 AGTTGTTGCC TTATCAACCT CCCCCACAGC CCACACAGAA AAGATAAAAT CATCATGGCT ACAGTGTTAC AGAAGATGAT
 GACCCAAGGA GTAGGCCTGC CTGAGTGAAT GCTGAGAGTG ATAATGGGAG CAGTAGCATC TCAGAGACTA CAGCAGAAAC
- CATCCACATA AAGAGCTITG CCCAAACTTA TGATAAAGGG CACCCTCAGA GACTCTCCCT ACTITAATAT TAGCCCATTG CAGAAATGGT GAGTGGAAAG AGAAATCTTA GGAAGAACCC CTTAAAAAAG CAAAATGCTT TTTAGGTTTG TGCTGAAGAG CCTGGAAAAG AAATAAGGAC ACACACGCTG AGAAATCTTC CTCCTGCCCC AACACTGGGA TAATCTCCAA GGATCTCTCC ATATCTCATT CTCCTGGATA CACTGTCCAC TCAGAAATAT TGTGCAGAGT GCAGTAATTC AAAAGTGAGC TATTGTGTTA GGAGTGAAGG CAAGAGTATC GTAAAATAAA TCAAAATTTGA AATGAATTCT CTTAAATTGC TTTATAGATG TTTAATGTAA

GCCAGCAGCT ATTAAACGAT AAACCTTAAA TTCGAGAAAA ACTTGGTCAT TCAGAAACTA TAGAAACAGG CAGGACTTAT TGCGAGGGCA AACACAGAGT GAGCTCCAGC CTGCTTCAGG AAAATCTGCC AGTGCCATGA AGGATGTACT CTGTCTGCTC CACTGCACTA CTGCTCAGTA TGAGCCCATG CCATCAGCTG TCCCTGACCC ACAGGAGTTC TTTAGAAGAG ACTGGTCAAC AAAAGTTTCT AGGGTGTTTT ATACCTGCCA ACTCGAGGGT TAAAACAAGT TGCATAGAAA TGCTCAATCA AGAAAGACAC AGTCATTACT CAGAGAATAA TAAACAGCCT GGCAGCACAT GAATGAATAG AAAAAAGATG TTACATGCAA AGCATGAAAT AACCAAATTC CATAACAGAT GTTAATCTGT AATGTGTTTA GGAGAATTTA GAGGAAGTAT AAGATTTATT CTTTCATCAA AAAAATTATA GCCAATGAGG ATATATCTAT CAATTATCCA TCAAGTGGTG ATATGGCAGC ACAAGGTAAA ACACAAAGGA ATAAAACCAA CGITTATTAA GAACCAATCA TGTGGCATTT CACATTGAGC ATCATATTTA ATTCTGAAAA AAATCCTTGT ACTGTATCAT TCTTCATATT TTATGGATGC AGTAACTAAG GCTGAGAACT TTAAAATTTT TCCTAAGTTC AGACACATAG CTAAGTGGCA GAACCAAGAT TCAAACTCAC CCCATCTAAC TGCAGAGCAA ACTGCATGCC TTAAATGTCA AAGTGAATAC TAGCACAGTT AATACAATGT TTGGAAACTC AGAGAAGGAA TGATCCTCT GCATTATAGT TACTAAGGAA TCATTGCCAT TATTTAAATG CCAGTGCTTC TACATCAGGC CCAAATTTTC TGTCCTACTA ACTGTGAATC AAGACTTGAT TCAACCTCTA CTTGAGTATC TGCCGCAATG AGAAATCACT TACCTCCACT AACCACACAT TTATTTTATA ACAACAGATT GTTAGTAAGT CCTTTCTTAT ACATACTCAA CAGCTGCTTC CCAAGATGCT GTAGGATTAT GTCTAGAGTC AAACTAGCCA GAAGCAATGT CCAAAATACA CCATAACACT GTGCAGCAAA GGTCCTACTA CCACTTGTTT GGCCCAAACA TTCTAGGCAG CACTGGATAT CTGAATCATC AATTATTTCC ACAAACACTG ACCCCTCTAC CAGTCACCCT CACTAGAAGA ATTAATTCCA CATGATAATA
GCTCCCTCAT GTTACTCCCT TCTAAGTCAA ATTGTACACC CCTTTATCTG ATTAACAGAG TCTAAGTCAC ATGACCTAAA TGCAAGAGAA CTGGGAATGG ACGTTTGTGG ATTCTACCTT AGTAAGGCAA AGTTATCATT GGGAATTCCT CTAATACAGG AGGAGAAAA CHOGAATA AAGGAGCAT ATAAATGGAA AATTATCAT AGGAAA AATTATCAT CAATGGAA AATTATCAT CAATGGAACATA AAGGAGCAT AAAAGGAAA AATTATCAACAT ACAATCCATC ACTTGGTTGC CCCACATCAA CATTCATTCT TTTGCCACACA TAAAAGTTC CAAGAACAAA AATTATCCCA CTGAACATAA TCTTTACTAT CTTTTATATA AAGGAAAATT AGACTTGACT CAGCAGAACT GAAATAACCC AGCTCTAACA GTTACTGCTT TTAACTTCAA GTACTGTGTC TCTAGGTGAT ACCTGCTCCA ACAATAGTTT GGTCACATTT TCAATTTGAT ATTCTCTAGT CTCCCAACTT GATAACTGTA CCCTAAACCA TAAAGTTCAC TACCAACATG CTATATATAA AATAACCAAA GGGGGAAGAA GAAAGAGAAA AAGGAAATCT CTTAAAATAC ACAGGTATAC ATATGACAAA GCAAAGAAGG AAATGTGAGC AGATAGTGCA GTCCTCGTTT CTGAAATTGG TCCCCTGACT GGGGCTATAC CTATTCCATT TCCTCACCCT CAGCCAGGCA GGTGGAGCAA AAACTTAAGT CTTGGTGGAT CTGAATCTTG ATGCTGTGGA GCTGTCTTAC TAGCCCCAGA CTACCTGCCT CTCAATTTCT AATTATATCA GTGAAAGCAA ACAGCITTGA TITGTITAAG CCTCTGATTT TITGGTCTAA CTGATGTAAG ACCACAAGGA CAAGAGTTCT CCAGCTCCGG ATTCTCTTCT GTTCTGTTAA TGGTGAAATG CCCGAGAGAA GAGTTGCCAA CTTTGGCAAA TAAAAAATAC AGGATTCCAG TTAAATTCAA ATTTAGATAA ACAACAATTT TTTAGTATTA GTGTGTCCCA TTCAATATTT GGACATACTT AACTAAAAAA 30 TGATTTGTTG TTCATCTGAA ATACAAATTT AACTGGGCAT TCTGAATATT CTCTGGCAAC CCCCGAGAGA GTGAAGAAAG TGGTACAAGG ACACTTAAGA AGACCAGATT TGAAAAGACA TTACGGATGT GTTTAAATGT CTTATTCTAG AGAGAGTTAG AGCTGTAGGT AGAACTTGGG AAATTAAGTT AAAAGCAGAC ACAGAGACCT GGCCAATATA TACTAAGGAG TGGATCACTC TGGTCACAAG CCCAACCTGA GACCAAGGGC ATAGTGAGAT GATTTGGGAA AGGCACTTAT ACACTACTCA TCCCCGTCTT TGAACTAAAT GCCTTATAAA TCTCCAAGAG AAATGACAGT CCACCATGTG GACTGCTTTC TGTAAGTCCA GGGAAAATAA AAGCTATGTG CTTGAAACCC ACTTCTGATA TTATAAGGTG TGTGATCTTT GTCATGTTAA TGGGTCTGAG TATCAATTCT ACAATTGTAA AGTGACAGTA ATGGTGTGTC CCCAGGTTGT TGTGGAAAGC TTGATTCTTA ATGCAACAGT AGGAAACCCC AGCCTCTCTG GAGCAAACAC CCTTCTACAT CTTTACTTCC CCTGCACATT GGCAGGACTC TATTCCTCTA TTTCTCTCTA GTGCTAGAGC, AGAAAGGGAC CTTGATTTGA TATCAGGAAA ATCTATTTCT GAACCATAAG CTATGATAGC TGATTTAAAA AATTGACTAT CATGACATGA TAATGATCAT AATGGTAATA CATATTGATA GGGTTGCCGT GAAAGTAATA ATATATCTAA GAGTTGTGAC AATATATGAT ACGCCTAGAC TCTCAGAAAA TGCTAATTCC AATCCCAATT GCTCTTTTGCA TAAAGTTCTG TCCTAGGGTC TGTTCTTTTC CCACATCTAC CCTCCTTGGA TCTCTCTTCT GTCTTTTTCA TGTGGTTCAG AGGAGGAGAG AGATCCAGGT CAATGTTTTT CAAATTACAA GGAATTATCA TTTAAATGGG GAAGAAGCTC AAGTTTTGAC GTGTAGTGGA ATTGGAGTGG AGTGGAGTGG AATGGAAACT AACAGGAAGA CACTGCACAT GGTTAAGATA AAGATTGTTT CCTGAAACCT THANTITGIG CTTACATACT CACACATACA TATGIGGATG CACTGGGACT CTGCAATATG CATTTCIGAC TATGGAACAT AGCCATAAAA GTCTTTGCAC TGAACGTTCA GTGGGCCTTT CACAAGCTGC CCTAATTGGG AAAGAAAAAC ATGGTCCCTC CATTTCCTGC CCCCAACTCC AGAAAAGTCA CCATAGTTGA GGGTACATCT GAGAAGCCAG CACTTGGGAG TTCAGGGCTC AAGITCCTTT CTAGAAAAAC ACTGGGTGAT TCTAGGGGAA CTTCCGATCA GAAACAGCCA ATTCAGAGTG AGAGAAGAAA ACGTGACCAT GCAGTTCCTG TGGTTACCAG CCTTGCCCCT CTCTTGCCTT CTGGGAGTTA TAAAACCCAA GACTGGAAAAG
GAAAACCAGC ATTTGCTCAG GCAGCCTCTC TGGGAAGATG CTGCTTCTTC CTCTCCCCCT GCTGCTCTTT CTCTTGTGCT
CCAGAGCTGA AGCTGGTGAG TATCAGGGTT CTTCCCTCTG AAATCTGCAG TATCAGCTCC TGAAACAAAG ATGTTTAGTC
TGAAATAGCT GACTCCTAAA CAGGGTTCCA AGATCTCTCT TCAAGAGTCC CACAGAGGAA ATTTCCACTT GGGATGTGTG
CCACCCCACC CCCACCCCCA CCCACTGCCA TTCTCTACAG CCTAGGACAC CCCCAGGAAC AAGGAATTTC ACCTCAATTG 50 TAGAAAAGCC CAGAGCAAGT GGAAGGAAAA GGGGTATCCC CAGGAAAACA GACATGTCCT CTTAATCTTC TGAGCATCAG GGCTACCCAT TACTTTGTGA CTTTCTCACT CTGTGACCAT GCTCAAGAGC TATGGAGAAA TCTAAAACAG GAACCTGGAC AGTGGGTCCT ACACAGAGAC AGAGGAGAGT GGGCCAGGGC AAGGTGGGAG TGGGAGAAGT CTGAGATGAA AACATCAGAA 55 TGGAGCAGAG GCAAGAATGA GATTTCACCT GGGAGGTTAT GGGTGGGGAA AGATACGAAA TACAGGAGAC AGGAGAGGGA AGATGGCCGG AACACAGGGT GAGAATGAGA TTCCAGGGAA GCCTAGCTCA GCTTTAACCC AATTTGTCCA TTCATTGGAG AGAGTATCTA TGGCCGTGTT CAAACCCTGG GGTGCTCTGT TCCAGGGGAG ATCATCGGGG GCACAGAATG CAAGCCACAT
TCCCGCCCCT ACATGGCCTA CCTGGAAATT GTAACTTCCA ACGGTCCCTC AAAATTTTGT GGTGGTTTCC TTATAAGACG
GAACTTTGTG CTGACGGCTG CTCATTGTGC AGGAAGGTGA GACAACAGGG TCTATTTATC TCCAAATGGG AGATGAACAA GAACTITGTG CTGACGGCTG CTCATTGTGC AGGAAGGTGA GACAACAGGG TCTATTTATC TCCAAATGGG AGATGAACAA
CCAGAGTAGC ATCCAGGAAT ACACCTGCAC TGGGGACTGA AGAGGGGGTC CTGGGTCTTG TCAACTITCA GGAGGGGAC
GACTTTGGGC TGAAAGACTT TAGTCTGTGT TTGAATAGTT CCTTGAGCCT CAGTCACTGA GCTAAGCTCC CTTCGGAGGA
AAAGGAGGTC CTGTCCGAAG GTCCCTCTTG TTGCAGTAGC ACCCCTCACC CCTACCCAAC TCAAGACACA CGGCTCACTT
TTCAGGGCCC CACCCAGTCT CAGGGCCACT TCCTCTATGG CCTTTTCAAG AACACTGGCT CTAGTTCTCA GGGTCCTGAA
CCCATCATTT TATGGGAGCA GAGAACAGGT CTACATAAGA CCCCCACTTT CCCGTTTTAA CTGATATCTC CTGCTTCAGG
GGCTGGCCCT CATGCAGGGT TCCCTGAATT AGGAAGTGTG AACCCTGTCC CCTGGGCTG TTCAGTCCCC
AGCAATTCCA GGGGTCGTAAG AAATTGGTCT TGTTTCCTTGA GAAAGGCTCT TCATGAGTTA AGCCTGAGCC CTCAAATGCCC
ACCAATTCCA GGGGTCGTAAG AAATTGGTCT TGTTTCCTTGA GAAAGGCTCTT TCATGAGTTA AGCCTGAGCC CTCAAATGCCC ACAAGTGCC CATGAAAAGG GAGATGGGTA GAGTCCGGCN ACCCAGTGAC AGAGTTTAGT CCTCTTTTCT CAGAATGAGC
TCACCTCAGA AGAAACCCCA AGCCATCACT GTCGCCTCCT TTTCCTTCCT TCTTCCTCAC AGCAGGTCTA TAACAGTCAC
CCTTGGAGGC CATAACATAA CAGAGGAAGA AGACACATGG CAGAAGCTTA AGGTTATAAA GCAATTCCGT CATCCAAAAT ATAACACTTC TACTCTTCAC CACGATATCA TGTTACTAAA GGTGACAACA CCTCTCTTCT CCCTTTCCAC TTCCCATTCT CCTAAGCTTC TCCTTCAGGT CCTCATTGCC CTGAATTTTT CTTAGGACTT GGCTATAACA TGAAGCTACT CACCCTGTCC CTCCCTGATC ACCTCCAACT GTCCAGAGCC CATTCGAGG ACTGACAGTC CTTCATTCCC TTCACAGTTG AAGGAGAAAG CCAGCCTGAC CCTGGCTGTG GGGACACTCC CCTTCCCATC ACAATTCAAC TTTGTCCCAC CTGGGAGAAT GTGCCGGGTG GCTGGCTGGG GAAGAACAGG TGTGTTGAAG CCGGGCTCAG ACACTCTGCA AGAGGTGAAG CTGAGACTCA TGGATCCCCA

GGCCTGCAGC CACTTCAGAG ACTTTGACCA CAATCTTCAG CTGTGTGTGG GCAATCCCAG GAAGACAAAA TCTGCATTTA AGGTGATCCT CCAACTAGGT TTCCTCTCCA AAACTCACTG TTCAGGGACC TGAATGCTCT TAGAAGGAGA TGGGGTCAGC AGGTTGTCAG TCAGGTGACA GGGTGAGCAT CACAGGAATT GCTGTCCTCC CGTGGTCCAA GACAGCCTCT GACCATCCAT TCCAGTCTAC TGCACTGGGG GCATGGGGTG ACTGTGGAGA ATGTGGATGA CGGTCCCAAG AAAGGAAGAA GGGGCATCAG AACTAGATGT ATAAGTGAGG AGCTCCACCT CCTGGGTCTG ACTITAGGTC TCACTGTGAC TCCAAGCTGG CTGGCAGACA
GAACTAGATGT ATAAGTGAGG AGCTCCACCT CCTGGGTCTG ACTITAGGTC TCACTGTGAC TCCAAGCTGG CTGGCAGACA
GGAGTGGAGG ACTTCCCGGG CTCACCTTCT TCTCTCTCT CTCCCCCTAC AGGGAGACTC TGGGGGCCCT CTTCTGTGTG
CTGGGGTGGC CCAGGGCATC GTATCCTATG GACGGTCGGA TGCAAAGCCC CCTGCTGTCT TCACCCGAAT CTCCCATTAC CGGCCCTGGA TCAACCAGAT CCTGCAGGCA AATTAATCCT GGATCCTGAG CCAGCCTGAA GGGAAGCTGG AACTGGACCT TAGCAGCAAA GTGTGTGCAA CTCATTCTGG TTCTACCCTT GGTTCCCTCA GCCACAACCC TAAGCCTCCA AGAGGTCTCC TACAGGTAAC AGAACTTICA ATAAACTTCA GTGAAGACAC AGCTTCTAGT CGTGAGTGTG TGTCCCTCTC TGCTGCTCTC 10 TTCTCCTGCA CATGTGACCT GATTCCCAGC CCAAGCACCA AGGA ATCATCGGGG GCACAGAATC CAAGCCACAT TCCCGCCCCT ACATGGCCTA CCTGGAAATT GTAACTTCCA ACGGTCCCTC AAAATTTTGT GGTGGTTTCC TTATAAGACG GAACTITGTG CTGACGGCTG CTCATTGTGC AGGAAGGTCT ATAACAGTCA CCCTTGGAGC CCATAACATA ACAGAGGAAG AAGACACATG GCAGAAGCTT GAGGTTATAA AGCAATTCCG TCATCCAAAA TATAACACTT CTACTCTTCA CCACGATATC ATGTTACTAA AGTTGAAGGA GAAAGCCAGC CTGACCCTGG CTGTGGGGAC ACTCCCCTTC CCATCACAAT TCAACTTTGT CCCACCTGGG AGAATGTGCC GGGTGGCTGG CTGGGGAAGA ACAGGTGTGT TGAAGCCGGG CTCAGACACT CTGCAAGAGG TGAAGCTGAG ACTCATGGAT CCCCAGGCCT GCAGCCACTT CAGAGACTTT GACCACAATC TTCAGCTGTG TGTGGGCAAT CCCAGGAAGA CAAAATCTGC ATTTAAGGA GACTCTGGGG GCCCTCTTCT GTGTGCTGGG GTGGCCCAGG GCATCGTATC CTATGGACGG TCGGATGCAA AGCCCCCTGC TGTCTTCACC CGAATCTCCC ATTACCGGCC CTGGATCAAC CAGATCCTGC AGGCAAATTA A-3' (FRAG. NO:1887) (SEQ ID NO:12384) 5'-ATCATCGGGG GCACAGAATC CAAGCCACAT TCCCGCCCCT ACATGGCCTA CCTGGAAATT GTAACTTCCA ACGGTCCCTC AAAATTITGT GGTGGTTTCC TTATAAGACG GAACTTTGTG CTGACGGCTG CTCATTGTGC AGGAAGGTCT ATAACAGTCA CCCTTGGAGC CCATAACATA ACAGAGGAAG AAGACACATG GCAGAAGCTT GAGGTTATAA AGCAATTCCG TCATCCAAAA TATAACACTT CTACTCTICA CCACGATATC ATGTTACTAA AGTTGAAGGA GAAAGCCAGC CTGACCCTGG CTGTGGGGAC ACTCCCCTTC CCATCACAAT TCAACTTTGT CCCACCTGGG AGAATGTGCC GGGTGGCTGG CTGGGGAAGA ACAGGTGTGT TGAAGCCGGG CTCAGACACT CTGCAAGAGG TGAAGCTGAG ACTCATGGAT CCCCAGGCCT GCAGCCACTT CAGAGACTTT GACCACAATC TTCAGCTGTG TGTGGGCAAT CCCAGGAAGA CAAAATCTGC ATTTAAGGGA GACTCTGGGG GCCCTCTTCT GTGTGCTGGG GTGGCCCAGG GCATCGTATC CTATGGACGG TCGGATGCAA AGCCCCCTGC TGTCTTCACC CGAATCTCCC ATTACCGGCC CTGGATCAAC CAGATCCTGC AGGCAAATTA A-3'(FRAG.NO:)(SEQ ID NO:11837) 5'-TCCCAGTTAA TACATAATCA ATATGCAATT TATTAATACA TCTCTCCATG TCCACTCCCC CTGTATCTTG CCATTCTTGA CCTGCATTIC CATCCTCCTT ACCTTCCCTA GAGGCCAACT CATTTCTTT GAAAAACCTG GCATTTCCCA GAAAAAAAAG TGAAGGGCTG GGAGCTGTCC GTTGTCCTGA TTTGCTCCCT CTGCCCTTGC TTCCAAATGT GGTTGGAAAG AAGCACTATT GAAAAAATCCC TAAACGCACC CCTGCAGGGT TGGCTCTACC CTGTAGCCAT GGACACATGC TGTTGATACC ACCIGCCTCA TGAGTCTCAC ATAATTTGCC CTTTCACACT ATCTACCCCA TCAGCCTTAC CAAAACCATA CCTGCATCCT GGGCAGCATC TGCCCTTCAA GAGACTAAGG AATCTCCTTG CAACCAAGAA TGACTAGACC AATGAGACAC CCTTTAAGGC CCCAGCACAA TATAGAAATC CCACAATATG GTAATCCCAG TAAGGAGCTA TCAAGCCATT GCAGGACCAT CTAGAATACA ACTAGAGTAT AGTTCCTTTC AATCCAGGAA CTATACTCTA ACAGCTTGGC TCACAGGAAC CAGAAGTGAA GATGATGAGG ATCAGGGCTG
AGCCTGTGAG CACCAGCTCC ACCACTGACA CCAACCACAG ATTAAACAAG CATCTTGTGG ACCCTGGGA TGGAAAGAAT AGTTGTTGCC TTATCAACCT CCCCCACAGC CCACACAGAA AAGATAAAAT CATCATGGCT ACAGTGTTAC AGAAGATGAT ATATCTCATT CTCCTGGATA CACTGTCCAC TCAGAAATAT TGTGCAGAGT GCAGTAATTC AAAAGTGAGC TATTGTGTTA GGAGTGAAGG CAAGAGTATC GTAAAATAAA TCAAATTTGA AATGAATTCT CTTAAATTGC TTTATAGATG TTTAATGTAA
GCCAGCAGCT ATTAAACGAT AAACCTTAAA TTCGAGAAAA ACTTGGTCAT TCAGAAACTA TAGAAACAGG CAGGACTTAT TGCGAGGGCA AACACAGAGT GAGCTCCAGC CTGCTTCAGG AAAATCTGCC AGTGCCATGA AGGATGTACT CTGTCTGCTC CACTGCACTA CTGCTCAGTA TGAGCCCATG CCATCAGCTG TCCCTGACCC ACAGGAGTTC TTTAGAAGAG ACTGGTCAAC
AAAAGTTTCT AGGGTGTTTT ATACCTGCCA ACTCGAGGGT TAAAACAAGT TGCATAGAAA TGCTCAATCA AGAAAGACAC
AGTCATTACT CAGAGAATAA TAAACAGCCT GGCAGCACAT GAATGAATAG AAAAAAGATG TTACATGCAA AGCATGAAAT 50 AACCAAATTC CATAACAGAT GTTAATCTGT AATGTGTTTA GGAGAATTTA GAGGAAGTAT AAGATTTATT CTTTCATCAA AAAAATTATA GCCAATGAGG ATATATCTAT CAATTATCCA TCAAGTGGTG ATATGGCAGC ACAAGGTAAA ACACAAAGGA ATAAAACCAA CGTTTATTAA GAACCAATCA TGTGGCATTT CACATTGAGC ATCATATTA ATTCTGAAAA AAATCCTTGT ACTGTATCAT TCTCATATT TTATGGATGC AGTAACTAAG GCTGAGAACT TTAAAATTTT TCCTAAGTTC AGACACATAG CTAAGTGCA GAACCAAGAT TCAAACTCAC CCCATCTAAC TGCAGAGCAA ACTGCATGCC TTAAATGTCA AAGTGAATAC TAGCACAGTT AATACAATGT TTGGAAACTC AGAGAAGGAA TGATCCTCT GCATTATAGT TACTAAGGAA TCATTGCCAT
TATTTAAATG CCAGTGCTTC TACATCAGGC CCAAATTTTC TGTCCTACTA ACTGTGAATC AAGACTTGAT TCAACCTCTA
CTTGAGTATC TGCCGCAATG AGAAATCACT TACCTCCACT AACCACACAT TTATTTATA ACAACAGATT GTTAGTAAGT
CCTTTCTTAT ACATACTCAA CAGCTGCTTC CCAAGATGCT GTAGGATTAT GTCTAGAGTC AAACTAGCCA GAAGCAATGT
CCAAAATACA CCATAACACT GTGCAGCAAA GGTCCTACTA CCACTTGTTT GGCCCAAACA TTCTAGGCAG CACTGGATAT CTTAAAATAC ACAGGTATAC ATATGACAAA GCAAAGAAGG AAATGTGAGC AGATAGTGCA GTCCTCGTTT CTGAAATTGG
TCCCCTGACT GGGGCTATAC CTATTCCACT TCCTCACCCT CAGCCAGGCA GGTGGAGCAA AAACTTAAGT CTTGGTGGAT
CTGAATCTTG ATGCTGTGGA GCTGTCTTAC TAGCCCCAGA CTACCTGCCT CTCAATTTCT AATTATATCA GTGAAAGCAA 70 ACAGCTTIGA TITGTTTAAG CCTCTGATTT TTTGGTCTAA CTGATGTAAG ACCACAAGGA CAAGAGTTCT CCAGCTCCGG ATTCTCTTCT GTTCTGTTAA TGGTGAAATG CCCGAGAGAA GAGTTGCCAA CTTTGGCAAA TAAAAAATAC AGGATTCCAG TTAAATTCAA ATTTAGATAA ACAACAATTT TTTAGTATTA GTGTGTCCCA TTCAATATTT GGACATACTT AACTAAAAAAA TGATTTGTTG TTCATCTGAA ATACAAATTT AACTGGGCAT TCTGAATATT CTCTGGCAAC CCCCGAGAGA GTGAAGAAAG

```
TGGTACAAGG ACACTTAAGA AGACCAGATT TGAAAAGACA TTACGGATGT GTTTAAATGT CTTATTCTAG AGAGAGTTAG
 AGCTGTAGGT AGAACTTGGG AAATTAAGTT AAAAGCAGAC ACAGAGACCT GGCCAATATA TACTAAGGAG TGGATCACTC TGGTCACAAG CCCAACCTGA GACCAAGGGC ATAGTGAGAT GATTTGGGAA AGGCACTTAT ACACTACTCA TCCCCGTCTT
TGAACTAAAT GCCTTATAAA TCTCCAAGAG AAATGACAGT CCACCATGTG GACTGCTTTC TGTAAGTCCA GGGAAAATAA AAGCTATGTG CTTGAAACCC ACTTCTGATA TTATAAGGTG TGTGATCTTT GTCATGTTAA TGGGTCTGAG TATCAATTCT ACAATTGTAA AGTGACAGTA ATGGTGTGTC CCCAGGTTGT TGTGGAAAGC TTGATTCTTA ATGCAACAGT AGGAAACCCC AGCCTCTCTG GAGCAAACAC CCTTCTACAT CTTTACTTCC CCTGCACATT GGCAGGACTC TATTCCTCTA TTTCTCTCTA
GTGCTAGAGC AGAAAGGGC CTTGATTTGA TATCAGGAAA ATCTATTTCT GAACCATAAG CTATGATAGC TGATTTAAAA
AATTGACTAT CATGACATGA TAATGATCAT AATGGTAATA CATATTGATA GGGTTGCCGT GAAAGTAATA ATATATCTAA
GAGTTGTGAC AATATATGAT ACGCCTAGAC TCTCAGAAAA TGCTAATTCC AATCCCAATT GCTCTTTGCA TAAAGTTCTG
TCCTAGGGTC TGTTCTTTTC CCACATCTAC CCTCCTTGGA TCTCTCTTCT GTCTTTTTCA TGTGGTTCAG AGGAGGAGA
AGATCCAGGT CAATGTTTTT CAAATTACAA GGAATTATCA TTTAAATGGG GAAGAAGCTC AAGTTTTGAC GTGTAGTGGA
ATTGGAGTGG AGTGGAGTGG AATGGAAACT AACAGGAAGA CACTGCACAT GGTTAAGATA AAGATTGTTT CCTGAAACCT TTAATTTGTG CTTACATACT CACACATACA TATGTGCATG CACTGGGACT CTGCAATATG CATTTCTGAC TATGGAACAT AGCCATAAAA GTCTTTGCAC TGAACGTTCA GTGGGCCTTT CACAAGCTGC CCTAATTGGG AAAGAAAAAC ATGGTCCCTC
 CATITCCTGC CCCCAACTCC AGAAAAGTCA CCATAGTTGA GGGTACATCT GAGAAGCCAG CACTTGGGAG TTCAGGGCTC AAGTTCCTTT CTAGAAAAAC ACTGGGTGAT TCTAGGGGAA CTTCCGATCA GAAACAGCCA ATTCAGAGTG AGAGAAGAAA
AAGTICCITT CTAGAAAAAC ACTGGGIGAT TCTAGGGGAA CITCCGATCA GAAACAGCCA ATTCAGAGTG AGAGAAGAAA ACGTGACCAT GCAGTTCCTG TGGTTACCAG CCTTGCCCT CTCTTGCCTT CTGGGAGTTA TAAAACCCAA GACTGGAAAG GAAAACCAGC ATTTGCTCAG GCAGCCTCT TGGGAAGATG CTGCTTCTTC CTCTCCCCCT GCTGCTCTTT CTCTTGTGCT CCAGAGCTGA AGCTGGTAG TATCAGGGTT CTTCCCTCTG AAATCTGCAG TATCAGCTCC TGAAACAAAG ATGTTTAGTC CCACCCCCAC CCCACCCCCA CCCACCCCCA TCTCTACAG CCTAGGACAC CCCACGGAAC AATTCCACTT GGGATGTGTG CCACCCCCCC CCCACCCCCA CCCACTGCCA TTCTCTACAG CCTAGGACAC CCCCAGGAAC AATTCCACTTC ACCTCAATTG
 TAGAAAAGCC CAGAGCAAGT GGAAGGAAAA GGGGTATCCC CAGGAAAACA GACATGTCCT CTTAATCTTC TGAGCATCAG
 GGCTACCCAT TACTITGTGA CTTTCTCACT CTGTGACCAT GCTCAAGAGC TATGGAGAAA TCTAAAACAG GAACCTGGAC
 AGTGGGTCCT ACACAGAGAC AGAGGAGAGT GGGCCAGGGC AAGGTGGGAG TGGGAGAAGT CTGAGATGAA AACATCAGAA
 TGGAGCAGAG GCAAGAATGA GATTTCACCT GGGAGGTTAT GGGTGGGGAA AGATACGAAA TACAGGAGAC AGGAGAGGGA
 AGATGGCCG AACACAGGGT GAGAATGAGA TTCCAGGGAA GCCTAGCTCA GCTTTAACCC AATTTGTCCA TTCATTGGAG
 AGAGTATCTA TGGCCGTGTT CAAACCCTGG GGTGCTCTGT TCCAGGGGAG ATCATCGGGG GCACAGAATG CAAGCCACAT
TCCCGCCCCT ACATGGCCTA CCTGGAAATT GTAACTTCCA ACGGTCCCTC AAAATTTTGT GGTGGTTTCC TTATAAGACG
GAACTTTGTG CTGACGGCTG CTCATTGTGC AGGAAGGTGA GACAACAGGG TCTATTTATC TCCAAATGGG AGATGAACAA
CCAGAGTAGC ATCCAGGAAT ACACCTGCAC TGGGGACTGA AGAGGGGGTC CTGGGTCTTG TCAACTTTCA GGAGAGGGAA
CCAGAGTAGC ATCCAGGAAT ACACCTGCAC TGGGGACTGA AGAGGGGGTC CTGGGTCTTG TCAACTTTCA GGAGAGGGAA
GACTTTGGGC TGAAAAGACTT TAGTCTGTGT TTGAATAGTT CCTTGAGCCT CAGTCACTGA GCTAAGCTCC CTTCCGAGGA
AAAGGAGGTC CTGTCCGAAG GTCCCTCTTG TTGCAGTAGC ACCCCTCACC CCTACCCAAC TCAAGACACAC CGGCTCACTT
TTCAGGGCCC CACCCAGTCT CAGGGCCACT TCCTCTATGG CCTTTTCAAG AACACTGGCT CTAGTTCTCA GGGTCCTGAA
CCCATCATTT TATGGGAGCA GAGAACAGGT CTACATAAGA CCCCCACTTT CCCGTTTTAA CTGATATCTC CTGCTTCAGG
GGCTGGCCCT CATGCAGGGT TCCCTGAATT AGGAAGTGTG AACCCTGTCC CCTGAGTCCT CCCTGGCCTG TTCAGTCCCC
AGCAATTCCA GGGGTCGTAG AAATTGTGTC TGTTTCCTGA GAAAGCTCTT TCATGAGTTA AGCCTGAGCC CTCAAATGCC
ACAAGTGGCC CATGAAAAGG GAGATGGGTA GAGTCCGGCN ACCCAGTGAC AGAGTTTAGT CCTCTTTTCT CAGAATGAGC
TCACCTCAGA AGAAACCCCA AGCCATCACT GTCGCCTCCT TTTCCTTCCT TCTTCCTCAC AGCAGGTCTA TAACAGTCAC
CCTTGGAGCC CATAACATAA CAGAGGAAGA AGACACATGG CAGAAGCTTG AGGTTATAAA GCAATTCCGT CATCCAAAT
ATAACACTTC TACTCTTCAC CACGATATCA TGTTACTAAA GGTGGCACACA CCCTTTCTCT CCCTTTTCTC CCTTTCCAC TTCCCATTCT
ATAACACTIC TACTICTAC CACGATATCA TGITACTAAA GGTGACAACA CCTCTCTTC CCCTTTCCAC TTCCCACTTCT CCTAAGCTTC TCCTCAGGT CCTCATTGCC CTGAATTTTT CTTAGGACTT GGCTATAACA TGAAGCTACT CACCCTGTCC CTCCCTGATC ACCTCCAACT GTCCAGAGCC CATTTCGAGG ACTGACAGTC CTTCATTCCC TTCACAGTTG AAGGAGAAAG CCAGCCTGAC CCTGGCTGTG GGGACACTCC CCTTCCCATC ACAATTCAAC TTTGTCCCAC CTGGGAGAAT GTGCCGGGTGG
 GCTGGCTGGG GAAGAACAGO TGTGTTGAAG CCGGGCTCAG ACACTCTGCA AGAGGTGAAG CTGAGACTCA TGGATCCCCA
GGCCTGCAGC CACTICAGAG ACITIGACCA CAATCITCAG CTGTGTGTGG GCAATCCCAG GAAGACAAAA TCTGCATTTA
AGGTGATCCT CCAACTAGGT TTCCTCTCCA AAACTCACTG TTCAGGGACC TGAATGCTCT TAGAAGGAGA TGGGGTCAGC
AGGTTGTCAG TCAGGTGACA GGGTGAGCAT CACAGGAATT GCTGTCCTCC CGTGGTCCAA GACAGCCTCT GACCATCCAT
TCCAGTCTAC TGCACTGGGG GCATGGGGTG ACTGTGGAGA ATGTGGATGA CGGTCCCAAG AAAGGAAGAA GGGGCATCAG
AACTAGATGT ATAAGTGAGG AGCTCCACCT CCTGGGTCTG ACTTTAGGTC TCACTGTGAC TCCAAGCTGG CTGGCAGACA
GGAGTGGAGG ACTTCCCGGG CTCACCTTCT TCTCTCTCTC CTCCCCCTAC AGGGAGACTC TGGGGGCCCT CTTCTGTGTG
CTGGGGTGGC CCAGGGCATC GTATCCTATG GACGGTCGGA TGCAAAGCCC CCTGCTGTCT TCACCCGAAT CTCCCATTAC
 CGGCCCTGGA TCAACCAGAT CCTGCAGGCA AATTAATCCT GGATCCTGAG CCAGCCTGAA GGGAAGCTGG AACTGGACCT TAGCAGCAAA GTGTGTGCAA CTCATTCTGG TTCTACCCTT GGTTCCCTCA GCCACAACCC TAAGCCTCCA AGAGGTCTCC
 TACAGGTAAC AGAACTTCA ATAAACTTCA GTGAAGACAC AGCTTCTAGT CGTGAGTGTG TGTCCCTCTC TGCTGCTCTC
 TTCTCCTGCA CATGTGACCT GATTCCCAGC CCAAGCACCA AGGA-3' (FRAG. NO:) (SEQ ID NO:11836)
 5'-GGBGCBCBBG-3' (FRAG. NO:1888) (SEQ ID NO:11270)
 5'-GBBGCBGC-3' (FRAG. NO:1889) (SEQ ID NO:11271)
5'-GGGGCBBGG CG-3' (FRAG. NO:1890) (SEQ ID NO:11272)
 5'-CGTTTTCTTCTCTC-3' (FRAG. NO:1369)(SEQ ID NO:10747)
 5'-TTCCTTGTTCCTGGGGGTGTCCT-3' (FRAG. NO:1372)(SEQ ID NO:10750)
 5'-CTTGCTCTGGGCTTTTCT-3' (FRAG. NO:1373)(SEQ ID NO:10751)
 5'-CCCTTTTCCTTCC-3' (FRAG. NO:1374)(SEQ ID NO:10752) [
 5'-TGTCTGTTTTCCTGGGG-3' (FRAG. NO:1375)(SEQ ID NO:10753)
 5'-CTCTCCTCTGTCTCTGTGT-3' (FRAG. NO:1376)(SEQ ID NO:10754)
  5'-CCTTGCCCTGGCCC-3' (FRAG. NO:1377)(SEQ ID NO:10755)
 5'-TCTTCCCTCTCTCTCTCTGT-3' (FRAG. NO:1378)(SEQ ID NO:10756)
 5'-CCCTGTGTTCCGCCC-3' (FRAG. NO:1379)(SEQ ID NO:10757)
  5'-GTCTTCCCTCTCTG-3' (FRAG. NO:1380)(SEQ ID NO:10758)
  5'-ACCTCCTTTTCCTCCG-3' (FRAG. NO:1381)(SEQ ID NO:10759)
 5'-CTGGGTGGGGCCCTG-3' (FRAG. NO:1382)(SEQ ID NO:10760)
  5'-CCTGTTCTCTGCTCCC-3' (FRAG. NO:1383)(SEQ ID NO:10761)
 5'-TGGCTTGGGGTTTCTTCTG-3' (FRAG. NO:1384)(SEQ ID NO:10762)
```

```
5'-TGTGTCTTCTTCCTCTGTT-3' (FRAG. NO:1385)(SEQ ID NO:10763)
      5'-GGCTGGCTTTCTCCTTC-3' (FRAG. NO:1386)(SEQ ID NO:10764)
      5'-TTTTGTCTTCCTGGG-3' (FRAG. NO:1387)(SEQ ID NO:10765) [1397)]
      5'-TGCCCCTTCTTCCTTTGGG-3' (FRAG. NO:1388)(SEQ ID NO:10766)
      5'-TCCTTGGTGCTTGGGCTGGG-3' (FRAG. NO:1389)(SEQ ID NO:10767)
      5'-GGBGCTGBTB CTGCBGATTT CBGBGGGBBG BBCCCTGBTB CTCBCCBGCT TCBGCTCTGG BGCBCBBGBG BBBGBGCBGC
      BGGGGGBBG GBBGBBGCBG CBTCTTCCCB GBGBGGCTGC CTGBGCBBBT GCTGGTTTTC CTTTCCBGTC TTGGGTTTTB
      TBBCTCCCBG BBGGCBBGBG BGGGGCBBGG-3' (FRAG.NO:1891) (SEQ ID NO:11273)
      Endothelial Nitric Oxide Synthase Nucleic Acids and Antisense Oligonucleotide Fragments
10
      5'-GCGTCTTGGG GTGCBGGGCC CBTCCTGCTG CGCCTGGGCG CTGCTGTGCG TCCGTCTGCT GGGGGGCCGG GGTGGCTGGG
      CCCTGCTTGC CGCACGACCC CGGGCCGACC CGAGGCTCGG GGGGCTGTGT TCTGGCGCTG GTGGGCTTGG GCCCCTCTGG GGGCTGGGTT TCCTGCTGCG CCTGGGCGCT GGCGTCTTGG GGTGCGGGGC CGGGGGGCCG GGGGGCCGCT GTTCGTGGGC
     20
     CCCCGCGCTG CTGGGCGTTC TGCGGTCTTG GGGTTGTCTG TGGCCCCGCT CGTGTCGCCC GTCGCCGGCC TCGTCCCCTC CTGGGTGCCC GGCGGCCTTCGTCCCTC CTGGGTGCCC GGCGGCCTTTTGCTCCTTC CTGGGCGTCT TGGGGTGCBG GGCCCBTCCT GCTGCGCCT TGCGCCCTG TGCGCCCTG TGCGCCCTG TGCGCCCTG TTGCCGCACG ACCCCGGGCC
      GACCCGAGGC TCGGGGGGCT GTGTTCTGGC GCTGGTGGGC TTGGGCCCCT CTGGGGGCTG GGTTTCCTGC TGCGCCTGGG
CGCTGGCGTC TTGGGGTGCG GGGCCGGGGG GCCGGGGGGC CGCTGTTCGT GGGCCTGGGG GTGCCTGTGG CTGCCGGTTG
25
      CCCCGGTTGG TGGCGCCGTC CTGCTGCCGG TCGTTGGCTG GGTCCCCCCG CCCGTTTCCT GGGGTCCGCG TGGGGTGCTC
     30
      CGGTTGGGCG GGCGTGGGCG CCGGCGGGTC CTCCGGGCTG CCCTTCTCCG CCGGGGGTCC CGCGCTCCTG CTGTTCCCTG
      GGCTCTTCTG CCTCTCCT GGGTGGGTGC TGGGTGCCGG GGTCTCCGGG CTTGCCCCGC GCTGCTGGGC GTTCTGCGGT CTTGGGGTTG TCTGTGGCCC CGCTCGTTC GCCCTCCGTC GCCCGTCGCC GGCCTCGTC CCTCCTGGGT GCGCGGCGGG
      CTGGTCCTGG CGTTTTGCTC CTTCCTGG-3' (FRAG. NO:1892) (SEQ ID NO:11274) 5'-GCGGGGCCG-3' (FRAG. NO:1893) (SEQ ID NO:11275)
      5'-CGGGGGGC-3' (FRAG. NO:1894) (SEQ ID NO:11276)
      5'-GCGCGGCGGGC-3' (FRAG. NO:1895) (SEQ ID NO:11277)
5'-CTGTGCGTCCGCTGG (FRAG. NO:1390)(SEQ ID NO:10768)
40
      GGGGCCGGGTGGCTGGGCCCTGCTTGCCGC (FRAG. NO:1391)(SEQ ID NO:10769)
      ACGACCCCGGGCCGACCCGAG (FRAG. NO:1392)(SEQ ID NO:10770)
      GCTCGGGGGGCTGTTCTGGCGCTGGTGGG (FRAG. NO:1393)(SEQ ID NO:10771)
      CTTGGGCCCCTCTGGGGGCTGGGTT (FRAG. NO:1394)(SEQ ID NO:10772)
      TCCTGCTGCGCCTGGGCGCTG (FRAG. NO:1395)(SEQ ID NO:10773)
45
      GCGTCTTGGGGTGC (FRAG. NO:1396)(SEQ ID NO:10774)
      GGGGCCGGGGGCCGGGGG (FRAG. NO:1397)(SEQ ID NO:10775)
      GCCGCTGTTCGTGGGCCTGGG (FRAG. NO:1398)(SEQ ID NO:10776)
      GGTGCCTGTGGCTGCC (FRAG. NO:1399)(SEQ ID NO:10777)
      GGTTGCCCCGGTTGGTGGC (FRAG. NO:1400)(SEQ ID NO:10778)
50
      GCCGTCCTGCCGGT (FRAG. NO:1401)(SEQ ID NO:10779)
      CGTTGGCTGGGTCCCCCCCC (FRAG. NO:1402)(SEQ ID NO:10780)
     CCGTTTCCTGGGGTCC (FRAG. NO:1403)(SEQ ID NO:10781)
GCGTGGGGTGCTCC (FRAG. NO:1404)(SEQ ID NO:10782)
      GGTTCCTCGTGCCG (FRAG. NO:1405)(SEQ ID NO:10783)
     CTGCTGCCTTGTCTTTCC (FRAG. NO:1406)(SEQ ID NO:10784)
GGCCGTGGCGGCGTGGTGGTCC (FRAG. NO:1407)(SEQ ID NO:10785)
      GCCCCCCTGGCCTTCTGCTC (FRAG. NO:1408)(SEQ ID NO:10786)
      GGGGTCTGGCTGGT (FRAG. NO:1409)(SEQ ID NO:10787)
      TGCCGGTGCCCTTGGCGGC (FRAG. NO:1410)(SEQ ID NO:10788)
     GGTCTTCTTCCTGGTG (FRAG. NO:1411)(SEQ ID NO:10789)
      GCTCTGGGCCCGGCCGGTCTCGG (FRAG. NO:1412)(SEQ ID NO:10790)
      GCGTCTCGTGTTCG (FRAG. NO:1413)(SEQ ID NO:10791)
      CTCTTGTGCTGTTCCGGCCG (FRAG. NO:1414)(SEQ ID NO:10792)
      CTCCTTCCTCTCCGCCGCC (FRAG. NO:1415)(SEQ ID NO:10793)
     GCCGCTCCCCGCCC (FRAG. NO:1416)(SEQ ID NO:10794)
      GCTCGTCGCCCTGGCCC (FRAG. NO:1417)(SEQ ID NO:10795)
     GGCCTCCTCGGCCGC (FRAG. NO:1418)(SEQ ID NO:10796)
TGTCTCGGGCGGCGTTGGC (FRAG. NO:1419)(SEQ ID NO:10797)
      GCTCCGTTTGGGGCTG (FRAG. NO:1420)(SEQ ID NO:10798)
70
     CCTCTGGCGCTTCC (FRAG. NO:1421)(SÉQ ID NO:10799)
     GGCCCTCGGCCTGGGCGCTC (FRAG. NO:1422)(SEQ ID NO:10800)
      TCTTCCGCCTGTGC (FRAG. NO:1423)(SEQ ID NO:10801)
      TGGTGGCCCTCGTGG (FRAG. NO:1424)(SEQ ID NO:10802)
     GCCCTCCTGGCCTCCGGTGTCC (FRAG. NO:1425)(SEQ ID NO:10803)
     TGTGGTCCCCGGCTGGT (FRAG. NO:1426)(SEQ ID NO:10804)
```

```
GGCCGGGCCGGTTGGGCGGGC (FRAG. NO:1427)(SEQ ID NO:10805)
        GTGGGCGCCGGCGGTCCTCC (FRAG. NO:1428)(SEQ ID NO:10806)
        GGGCTGCCCTTCTCC (FRAG. NO:1429)(SEQ ID NO:10807)
        GCCGGGGGTCCCGC (FRAG. NO:1430)(SEQ ID NO:10808)
        GCTCCTGCTGTTCCCTGGGCTCTTCTGCC (FRAG. NO:1431)(SEQ ID NO:10809)
        TCTCTCCTGGGTGGTGCTGGGTGCCG (FRAG. NO:1432)(SEQ ID NO:10810)
        GGGTCTCCGGGCTTG (FRAG. NO:1433)(SEQ ID NO:10811)
        CCCCGCGCTGCTGGGCGTTCTGC (FRAG, NO:1434)(SEO ID NO:10812)
        GGTCTTGGGGTTGTC (FRAG. NO:1435)(SEQ ID NO:10813)
        TGTGGCCCCGCTCG (FRAG. NO:1436)(SEQ ID NO:10814)
        TGTCGCCCTCCGTCGCC (FRAG. NO:1437)(SEQ ID NO:10815)
        CGTCGCCGGCCTCGTCC (FRAG. NO:1438)(SEQ ID NO:10816)
        CCTCCTGGGTGCGC (FRAG. NO:1439)(SEQ ID NO:10817)
        GGCGGGCTGGTCCT (FRAG. NO:1440)(SEQ ID NO:10818)
        GGCGTTTTGCTCCTTCCTGG (FRAG. NO:1441)(SEQ ID NO:10819)
        5'-GCGTCTTGGGGTGCBGGGCCCBTCCTGCTGCGCCTGGGCGCTG-3'(FRAG. NO:1896) (SEQ ID NO:11278)
        Inducible Nitric Oxide Synthase Nucleic Acids and Antisense Oligonucleotide Fragments
        5'-CTGCCCCBGT TTTTGBTCCT CBCBTGCCGT GGGGBGGBCB BTGGCTGCCT CCCCGGGGTT TCTGCTGCTT GCTGCTTCTT
        TCCCGTCTCC CTTCTTTCCC GTCTCCTTTT TGCCTCTTTG GGTTCCTGTT GTTTCTGGCC TGCTTGGTGG CGGCTTGTGC
       GTTTCCTCTC TCTTCCTTG GGTCTCCGCT TCTCGTCCTG CCTTTTCCTG TCTCTGTCGC GCCGTTCCTC CTCCGGCGTC CTCCTGCCCT GTGCTGTTTG CCTCGGGTGG TGCGGGTCCC GGTGCTCCCC CGGCGGGCCG GCTGGTTGCC TGGGCCTGTC TGGGGCGGTCC GGGTTGGGGG TGTGGTGGGC TCTTCTGTGG CCTGTGGGGC TGTTGGTGTC TCTGTGGGCC
20
       TGTGCTGGGT CTTGGGGCTT CCTCCCTTGT GCTGGGTGCG GCCTCCCCGC CCCCTTCTG GGCCGGTGGC CTGGCTCCTT GTGGGCGCTT CTTCGCCTCG TGGCTGCTG GCTGC CATATGTATG GGAATACTGT
       ATTTCAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT TGTGGCTAAC CCTTGTAATC CTAGCACTTT GAGAGGCTGA AGTGGGCAGA TCACTTGAGC TTCAGAGTTC GAGACCAGCA TGGACAACAT GGTGAAACCC AGTCTCTACC AAAAACACAA
        AAATATTAGC TGGGTGTGGT GGTGCATGCC TGTAGTCCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG CTTGAGCCTG
        GGAGGCAGAA GTTGCAATGA GCAGAGATCG TGCCACTCCG CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAAT
AAATAAATAA ATAAATAAAA TAAATGAAAT GAAATTATAA GAAATTACCA CTTTTTCATG TAAGAAGTGA TCATTTCCAT
       TATAAGGGAA GGAATTTAAT CCTACCTGCC ATTCCACCAA AGCTTACCTA GTGCTAAAGG ATGAGGTGTT AGTAAGACCA ACATCTCAGA GGCCTCTCTG TGCCAATAGC CTTCCTTCCT TTCCCTTCCA AAAACCTCAA GTGACTAGTT CAGAGGCCTG TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTGG AACCTGGGCA TTTTCCAGTG TGTTCCATAC TGTCAATATT
       GATGTAACAG CAAGATCAGG TCACCCACAG GCCCTGGCAG TCACAGTCAT AAATTAGCTA ACTGTACACA AGCTGGGGAC
       ACTOCCTTTG GAAACCAAAA AAAAAAAAA AAAAAAGAG CCTTTATGCA AAACAACTC TCTGGATGGC ATGGGGTGAG
TATAAATACT TCTTGGCTGC CAGTGTGTTC ATAACTTTGT AGCGAGTCGA AAACTGAGGC TCCGGCCGCA GAGAACTCAG
CCTCATTCCT GCTTTAAAAT CTCTCGGCCA CCTTTGATGA GGGGACTGGG CAGTTCTAGA CAGTCCCGAA GTTCTCAAGG
40
        CACAGGTCTC TTCCTGGTTT GACTGTCCTT ACCCCGGGGA GGCAGTGCAG CCAGCTGCAA GGTGAGTTGC C CATATGTATG
       GGAATACTGT ATTTCAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT TGTGGCTAAC CCTTGTAATC CTAGCACTTT
GAGAGGCTGA AGTGGGCAGA TCACTTGAGC TTCAGAGTTC GAGACCAGCA TGGACAACAT GGTGAAACCC AGTCTCTACC
AAAAACACAA AAATATTAGC TGGGTGTGGT GGTGCATGCC TGTAGTCCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG
CTTGAGCCTG GGAGGCAGAA GTTGCAATGA GCAGAGATCG TGCCACTCCG CTCCAGTCTT GGTGACAGAA TGAGACTCCA
       TCTCAAAAAT AAATAAATAA ATAAATAAAA TAAATGAAAT GAAATTATAA GAAATTACCA CTTTTTCATG TAAGAAGTGA
       TCATTTCCAT TATAAGGAA GGAATTTAAT CCTACCTGCC ATTCCACCAA AGCTTACCTA GTGCTAAAGG ATGAGGTGTT
AGTAAGACCA ACATCTCAGA GGCCTCTCTG TGCCAATAGC CTTCCTTCCT TTCCCTTCCA AAAACCTCAA GTGACTAGTT
CAGAGGCCTG TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTGG AACCTGGGCA TTTTCCAGTG TGTTCCATAC
       TGTCAATATT CCCCCAGCTT CCTGGACTCC TGTCACAAGC TGGAAAAGTG AGAGGATGGA CAGGGATTAA CCAGAGAGCT CCCTGCTGAG GAAAAAATCT CCCAGATGCT GAAAGTGAGG CCATGTGGCT TGGCCAAATA AAACCTGGCT CCGTGGTGCC
        CACACAGAGT GATGTAACAG CAAGATCAGG TCACCCACAG GCCCTGGCAG TCACAGTCAT AAATTAGCTA ACTGTACACA
        AGCTGGGGAC ACTCCCTTTG GAAACCAAAA AAAAAAAAA AAAAAAGAGA CCTTTATGCA AAAACAACTC TCTGGATGGC
       ATGGGGTGAG TATAAATACT TCTTGGCTGC CAGTGTGTTC ATAACTTTGT AGCGAGTCGA AAACTGAGGC TCCGGCCGCA GAGAACTCAG CCTCATTCCT GCTTTAAAAT CTCTCGGCCA CCTTTGATGA GGGGACTGGG CAGTTCTAGA CAGTCCCGAA
        GTTCTCAAGG CACAGGTCTC TTCCTGGTTT GACTGTCCTT ACCCCGGGGA GGCAGTGCAG CCAGCTGCAA GGTGAGTTGC C-3'
        (FRAG. NO: )(SEQ ID NO:12385)
        5'-CTGCTTTAAA ATCTCTCGGC CACCTTTGAT GAGGGGACTG GGCAGTTCTA GACAGTCCCG AAGTTCTCAA GGCACAGGTC
       TCTTCCTGGT TTGACTGTCC TTACCCCGGG GAGGCAGTGC AGCCAGCTGC AAGCCCCACA GTGAAGAACA TCTGAGCTCA AATCCAGATA AGTGACATAA GTGACCTGCT TTGTAAAGCC ATAGAGATGG CCTGTCCTTG GAAATTTCTG TTCAAGACCA
       AATTCCACCA GTATGCAATG AATGGGGAAA AAGACATCAA CAACAATGTG GAGAAAGCCC CCTGTGCCAC CTCCAGTCCA GTGACACAGG ATGACCTTCA GTATCACAAC CTCAGCAAGC AGCAGAATGA GTCCCCGCAG CCCCTCGTGG AGACGGGAAA
        GAAGTCTCCA GAATCTCTGG TCAAGCTGGA TGCAACCCCA TTGTCCTCCC CACGGCATGT GAGGATCAAA AACTGGGGCA
        GCGGGATGAC TTTCCAAGAC ACACTTCACC ATAAGGCCAA AGGGATTTTA ACTTGCAGGT CCAAATCTTG CCTGGGGTCC
       ATTATGACTC CCAAAAGTTT GACCAGAGGA CCCAGGGACA AGGCATTTA ACTIGCAGGT CCAAATCTTG CCIGGGGTCC
ATTATGACTC CCAAAAGTTT GACCAGAGGA CCCAGGGACA AGCCTACCCC TCCAGATGAG CTTCTACCTC AAGCTATCGA
ATTTGTCAAC CAATATTACG GCTCCTTCAA AGAGGCAAAA ATAGAGGAAC ATCTGGCCAG GGTGGAAGCG GTAACAAAGG
AGATAGAAAC AACAGGAACC TACCAACTGA CGGGAGATGA GCTCATCTTC GCCACCAAGC AGGCCTGGCG CAATGCCCCA
CGCTGCATTG GGAGGATCCA GTGGTCCAAC CTGCAGGTCT TCGATGCCCG CAGCTGTTCC ACTGCCCGGG AAATGTTTGA
ACACATCTGC AGACACTGC GTTACTCCAC CAACAATGGC AACATCAGGT CGGCCATCAC CGTGTTCCCC CAGCGGAGTG
       ACACATCIGC AGACACGIGC GITACICAC CACAATIGG AACATCAGGI CGGCATCAC CGTGTICCC CAGCAGGIGC
ATGGCAAGCA CGACTTCCGG GTGTGGAATG CTCAGCTCAT CGCCTATGCT GGCTACCAGA TGCCAGATGG CAGCATCAGA
GGGGACCCTG CCAACGTGGA ATTCACTCAG CTGTGCATCG ACCTGGGCTG GAAGCCCAAG TACGGCCGCT TCGATGTGGT
CCCCCTGGTC CTGCAGGCCA ATGGCCGTGA CCCTGAGCTC TTCGAAAATCC CACCTGACCT TGTGCTTGAG GTGGCCATCG
AACATCCCAA ATACGAGTGG TTTCGGGAAC TGGAGCTAAA GTGGTACGCC CTGCCTGCAG TGGCCAACAT GCTGCTTGAG
GTGGCCGCC TGCAGGTTCCC AGGGTGCCC TTCAATGGCT GGTACATGGC CACAGAGATC GGAGTCCGGG ACTTCTGTGA
        COTCCAGCGC TACAACATCC TGGAGGAAGT GGGCAGGAGA ATGGGCCTGG AAACGCACAA GCTGGCCTCG CTCTGGAAAG
```

	ACCAGGCTGT	CGTTGAGATC	AACATTGCTG	TGATCCATAG	TTTTCAGAAG	CAGAATGTGA	CCATCATGGA	CCACCACTCG
	GCTGCAGAAT	CCTTCATGAA	GTACATGCAG	AATGAATACC	GGTCCCGTGG	GGGCTGCCCG	GCAGACTGGA	TTTGGCTGGT
					GAGATGCTGA			
					GCGGAGACCC			
5					CAATGGCGTC			
,					GCCTTATTCA			
					GCTGTTGGTG			
					TGAAAGAGCT			
10					CATGACATTG			
10					GGAGGACGCC			
					TTCAGATCCC			
					GACCTCAGCA			
					TCCGACATCC			
	TGTGAGGATG	GCCAAGGCCT	GAACTACCTG	CCGGGGGAGC	ACCTTGGGGT	TTGCCCAGGC	AACCAGCCGG	CCCTGGTCCA
15	AGGCATCCTG	GAGCGAGTGG	TGGATGGCCC	CACACCCCAC	CAGACAGTGC	GCCTGGAGGA	CCTGGATGAG	AGTGGCAGCT
	ACTGGGTCAG	TGACAAGAGG	CTGCCCCCCT	GCTCACTCAG	CCAGGCCCTC	ACCTACTCCC	CGGACATCAC	CACACCCCCA
	ACCCAGCTGC	TGCTCCAAAA	GCTGGCCCAG	GTGGCCACAG	AAGAGCCTGA	GAGACAGAGG	CTGGAGGCCC	TGTGCCAGCC
					TTCCTGGAGG			
					CAGGTTCTAC			
20					CCGGAGATGG			
20					TGCTTTGTGC			
					CATCGTGCCC			
					TGGTGTTTGG			
25					CATGCGGTGC			
23					CAGCGAGGTG			
					CCCACACCCT			
					AGCCAGAAGC			
					CAGCAGCCTG			
					GCTCTGCATT			
30					CGTTGCTCCC			
					GGGCCTCCCT			
					GCACCACTTC			
					TGTATTTAAA			
	ACTTGGGTCT T	ICCCTGTATG A	ITCCTTGAT GG	AGATATTT ACA	TGAATTG CAT	TTACTT TAATO	GAATTCCCAC	CTCTGCTGCCT
35					GAGCGTGGCC			
					CCACCCGGC			
	ACTCCCACCA	GCGCCAGAAC	ACAGCCCCCC	GAGCTCCCCG	CTAACCCAGC	CCCCAGAGGG	GCCCAAGTTC	CCTCGTGTGA
					CGCCCAGGCG			
	TGCCTGGGCT	CCCTGGTATT	TCCACGGAAA	CTACAGGGCC	GGCCCTCCCC	CGGCCCCCCG	GCCCCTGAGC	AGCTGCTGAG
40					AAGAGGAGCG			
	AGGTGGAAGC	CGAGGTGGCA	GCCACAGGCA	CCTACCAGCT	TAGGGAGAGC	GAGCTGGTGT	TCGGGGCTAA	GCAGGCCTGG
					AGCTGCAGGT			
	GGAAATGTTC	ACCTACATCT	GCAACCACAT	CAAGTATGCC	ACCAACCGGG	GCAACCTTCG	CTCGGCCATC	ACAGTGTTCC
					CAGCCAGCTG			
45	GGCTCTGTGC	GGGGGGACCC	AGCCAACGTG	GAGATCACCG	AGCTCTGCAT	TCAGCACGGC	TGGACCCCAG	GAAACGGTCG
	CTTCGACGTG	CTGCCCCTGC	TGCTGCAGGC	CCCAGATGAG	CCCCCAGAAC	TCTTCCTTCT	GCCCCCGAG	CTGGTCCTTG
	AGGTGCCCCT	GGAGCACCCC	ACGCTGGAGT	GGTTTGCAGC	CCTGGGCCTG	CGCTGGTACG	CCCTCCCGGC	AGTGTCCAAC
	ATGCTGCTGG	AAATTGGGGG	CCTGGAGTTC	CCCGCAGCCC	CCTTCAGTGG	CTGGTACATG	AGCACTGAGA	TCGGCACGAG
	GAACCTGTGT	GACCCTCACC	GCTACAACAT	CCTGGAGGAT	GTGGCTGTCT	GCATGGACCT	GGATACCCGG	ACCACCTCGT
50	CCCTGTGGAA	AGACAAGGCA	GCAGTGGAAA	TCAACGTGGC	CGTGCTGCAC	AGTTACCAGC	TAGCCAAAGT	CACCATCGTG.
					AGAATGAGCA			
					GTTTTCCATC			
								CTTTAAAGAA
								TCCTGTATGG
55					GGGAGACTCT			
55					GCTGGTGCTG			
					AGATGTCCGG			
					TCAGACCCAC			
					CAGGTTCTGT			
60					AGGAACTGGG			
00					GCCCAGGCTG			
					CCCCAAACGG			
					ACGTGCACAG			
					ATCCTGGTGC			
65					CCGGCCCGGC			
	GACCCGCCGG	CGCCCACTGA	GCCCGTGGCA	GTAGAGCAGC	TGGAGAAGGG	CAGCCCTGGT	GGCCCTCCCC	CCGGCTGGGT
	GCGGGACCCC	CGGCTGCCCC	CGTGCACGCT	GCGCCAGGCT	CTCACCTTCT	TCCTGGACAT	CACCTCCCCA	CCCAGCCCTC
	AGCTCTTGCG	GCTGCTCAGC	ACCITGGCAG .	AAGAGCCCAG	GGAACAGCAG	GAGCTGGAGG	CCCTCAGCCA	GGATCCCCGA
					TGGAGGTGCT			
70	CCCACTGCTC	CTCACCCAGC	TGCCTCTGCT	CCAGCCCCGG	TACTACTCAG	TCAGCTCGGC	ACCCAGCACC	CACCCAGGAG
	AGATCCACCT	CACTGTAGCT	GTGCTGGCAT	ACAGGACTCA	GGATGGGCTG	GGCCCCCTGC	ACTATGGAGT	CTGCTCCACG
	TGGCTAAGCC	AGCTCAAGCC	CGGAGACCCT	GTGCCCTGCT	TCATCCGGGG	GGCTCCCTCC	TTCCGGCTGC	CACCCGATCC
	CAGCTTGCCC	TGCATCCTGG	TGGGTCCAGG	CACTGGCATT	GCCCCCTTCC	GGGGATTCTG	GCAGGAGCGG	CTGCATGACA
	TTGAGAGCAA	AGGGCTGCAG	CCCACTCCCA	TGACTTTGGT	GTTCGGCTGC	CGATGCTCCC	AACTTGACCA	TCTCTACCGC
75	GACGAGGTGC	AGAACGCCCA	GCAGCGCGGG	GTGTTTGGCC	GAGTCCTCAC	CGCCTTCTCC	CGGGAACCTG	ACAACCCCAA

GACCTACGTG CAGGACATCC TGAGGACGGA GCTGGCTGCG GAGGTGCACC GCGTGCTGTG CCTCGAGCGG GGCCACATGT TTGTCTGCGG CGATGTTACC ATGGCAACCA ACGTCCTGCA GACCGTGCAG CGCATCCTGG CGACGGAGGG CGACATGGAG CTGGACGAGG CCGCGACGT CATCGGCGTG CTGCGGGATC AGCAACGCTA CCACGAAGAC ATTTTCGGGC TCACGCTGCG CACCCAGGAG GTGACAAGCC GCATACGCAC CCAGAGCTTT TCCTTGCAGG AGCGTCAGTT GCGGGGCGCA GTGCCCTGGG CGTTCGACCC TCCCGGCTCA GACACCAACA GCCCCTGAGA GCCGCCTGGC TTTCCCTTCC AGTTCCGGGA GAGCGGCTGC CCGACTCAGG TCCGCCCGAC CAGGATCAGC CCCCTCCTC CCCTCTTGAG GTGGTGCCTT CTCACATCTG TCCAGAGGCT GCAAGGATTC AGCATTATTC CTCCAGGAAG GAGCAAAACG CCTCTTTTCC CTCTCTAGGC CTGTTGCCTC GGGCCTGGGT CCGCCTTAAT CTGGAAGGCC CCTCCCAGCA GCGGTACCCC AGGGCCTACT GCCACCCGCT TCCTGTTTCT TAGTCCGAAT GTTAGATTCC TCTTGCCTCT CTCAGGAGTA TCTTACCTGT AAAGTCTAAT CTCTAAATCA AGTATTTATT ATTGAAGATT TACCATAAAGG GACTGTGCCA GATGTTAGGA GAACTACTAA AGTGCCTACC CCAGCTC-3' (FRAG. NO:1897) (SEQ ID NO:12386) 5'-CATATGTATG GGAATACTGT ATTTCAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT TGTGGCTAAC CCTTGTAATC CTAGCACTTT GAGAGGCTGA AGTGGGCAGA TCACTTGAGC TTCAGAGTTC GAGACCAGCA TGGACAACAT GGTGAAACCC AGTCTCTACC AAAAACACAA AAATATTAGC TGGGTGTGGT GGTGCATGCC TGTAGTCCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG CTTGAGCCTG GGAGGCAGAA GTTGCAATGA GCAGAGATCG TGCCACTCCG CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAAAT AAATAAATAA ATAAATAAAA TAAATGAAAT GAAATTATAA GAAATTACCA CTTTTTCATG TAAGAAGTGA TCATTTCCAT TATAAGGGAA GGAATTTAAT CCTACCTGCC ATTCCACCAA AGCTTACCTA GTGCTAAAGG ATGAGGTGTT AGTAAGACCA ACATCTCAGA GGCCTCTCTG TGCCAATAGC CTTCCTTCCT TTCCCTTCCA AAAACCTCAA GTGACTAGTT CAGAGGCCTG TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTGG AACCTGGGCA TTTTCCAGTG TGTTCCATAC TGTCAATATT CCCCCAGCTT CCTGGACTCC TGTCACAAGC TGGAAAAGTG AGAGGATGGA CAGGGATTAA CCAGAGAGCT CCCTGCTGAG GAAAAAATCT CCCAGATGCT GAAAGTGAGG CCATGTGGCT TGGCCAAATA AAACCTGGCT 20 GAAGAGGCAC CACACAGAGT GATGTAACAG CAAGATCAGG TCACCCACAG GCCCTGGCAG TCACAGTCAT AAATTAGCTA ACTGTACACA AGCTGGGGAC ACTCCCTTTG GAAACCAAAA AAAAAAAAA AAAAAAGAGA CCTTTATGCA AAAACAACTC TCTGGATGGC ATGGGGTGAG TATAAATACT TCTTGGCTGC CAGTGTGTTC ATAACTTTGT AGCGAGTCGA AAACTGAGGC TCCGGCCGCA GAGAACTCAG CCTCATTCCT GCTTTAAAAT CTCTCGGCCA CCTTTGATGA GGGGACTGGG CAGTTCTAGA CAGTCCCGAA GTTCTCAAGG CACAGGTCTC TTCCTGGTTT GACTGTCCTT ACCCCGGGGA GGCAGTGCAG CCAGCTGCAA 25 GGTGAGTTGC C-3' (FRAG. NO:_)(SEQ ID NO:11875) 5'-CTGCTTTAAA ATCTCTCGGC CACCTTTGAT GAGGGGACTG GGCAGTTCTA GACAGTCCCG AAGTTCTCAA GGCACAGGTC TCTTCCTGGT TTGACTGTCC TTACCCCGGG GAGGCAGTGC AGCCAGCTGC AAGCCCCACA GTGAAGAACA TCTGAGCTCA 30 AATCCAGATA AGTGACATAA GTGACCTGCT TTGTAAAGCC ATAGAGATGG CCTGTCCTTG GAAATTTCTG TTCAAGACCA AATTCCACCA GTATGCAATG AATGGGGAAA AAGACATCAA CAACAATGTG GAGAAAGCCC CCTGTGCCAC CTCCAGTCCA GTGACACAGG ATGACCTTCA GTATCACAAC CTCAGCAAGC AGCAGAATGA GTCCCCGCAG CCCCTCGTGG AGACGGGAAA GAAGTCTCCA GAATCTCTGG TCAAGCTGGA TGCAACCCCA TTGTCCTCCC CACGGCATGT GAGGATCAAA AACTGGGGCA GCGGGATGAC TITCCAAGAC ACACTICACC ATAAGGCCAA AGGGATTITA ACTIGCAGGT CCAAATCITG CCTGGGGTCC ATTATGACTC CCAAAAGTTT GACCAGAGGA CCCAGGGACA AGCCTACCCC TCCAGATGAG CTTCTACCTC AAGCTATCGA ATTTGTCAAC CAATATTACG GCTCCTTCAA AGAGGCAAAA ATAGAGGAAC ATCTGGCCAG GGTGGAAGCG GTAACAAAGG ACCAGGCTGT CGTTGAGAT CACATTGCTG TGATCCATAG TTTTCAGAAG CAGAATGTGA CCATCATGGA CCACCACTCG GCTGCAGAAT CCTTCATGAA GTACATGCAG AATGAATACC GGTCCCGTGG GGGCTGCCCG GCAGACTGGA TTTGGCTGGT CCCTCCCATG TCTGGGAGACA TCACCCCCGT GTTTCACCAG GAGATGCTGA ACTACGTCCT GTCCCCTTTC TACTACTATC AGGTAGAGGC CTGGAAAACC CATGTCTGGC AGGACGAGAA GCGGAGACCC AAGAGAAAGA AGATTCCATT GAAAGTCTTG GTCAAAGCTG TGCTCTTTGC CTGTATGCTG ATGCGCAAGA CAATGGCGTC CCGAGTCAGA GTCACCATCC TCTTTGCGAC AGAGACAGGA AAATCAGAGG CGCTGGCCTG GGACCTGGGG GCCTTATTCA GCTGTGCCTT CAACCCCAAG GTTGTCTGCA TGGATAAGTA CAGGCTGAGC TGCCTGGAGG AGGAACGGCT GCTGTTGGTG GTGACCAGTA CGTTTGGCAA TGGAGACTGC CCTGGCAATG GAGAGAACT GAAGAAATCG CTCTTCATGC TGAAAGAGCT CAACAACAAA TTCAGGTACG CTGTGTTTGG CCTCGGCTCC AGCATGTACC CTCGGTTCTG CGCCTTTGCT CATGACATTG ATCAGAAGCT GTCCCACCTG GGGGCCTCTC AGCTCACCCC GATGGGAGAA GGGGATGAGC TCAGTGGGCA GGAGGACGCC TTCCGCAGCT GGGCCGTGCA AACCTTCAAG GCAGCCTGTG AGACGTTTGA TGTCCGAGGC AAACAGCACA TTCAGATCCC CAAGCTCTAC ACCTCCAATG TGACCTGGGA CCCGCACCAC TACAGGCTCG TGCAGGACTC ACAGCCTTTG GACCTCAGCA AAGCCCTCAG CAGCATGCAT GCCAAGAACG TOTTCACCAT GAGGCTCAAA TCTCGGCAGA ATCTACAAAG TCCGACATCC AGCCGTGCCA CCATCCTGGT GGAACTCTCC
TGTGAGGATG GCCAAGGCCT GAACTACCTG CCGGGGGAGC ACCTTGGGGT TTGCCCAGGC AACCAGCCGG CCCTGGTCCA
AGGCATCCTG GAGCGAGTGG TGGATGGCCC CACACCCCAC CAGACAGTGC GCCTGGAGGA CCTGGATGAG AGTGGCAGCT ACTGGGTCAG TGACAAGAGG CTGCCCCCCT GCTCACTCAG CCAGGCCCTC ACCTACTCCC CGGACATCAC CACACCCCCA
ACCCAGCTGC TGCTCCAAAA GCTGGCCCAG GTGGCCACAG AAGAGCCTGA GAGACAGAGG CTGGAGGCCC TGTGCCAGCC CTCAGAGTAC AGCAAGTGGA AGTTCACCAA CAGCCCCACA TTCCTGGAGG TGCTAGAGGA GTTCCCGTCC CTGCGGGTGT CTGCTGGCTT CCTGCTTTCC CAGCTCCCCA TTCTGAAGCC CAGGTTCTAC TCCATCAGCT CCTCCCGGGA TCACACGCCC ACGGAGATCC ACCTGACTGT GGCCGTGGTC ACCTACCACA CCGGAGATGG CCAGGGTCCC CTGCACCACG GTGTCTGCAG CACATGGCTC AACAGCCTGA AGCCCCAAGA CCCAGTGCCC TGCTTTGTGC GGAATGCCAG CGCCTTCCAC CTCCCGAGG ATCCCTCCA TCCTTGCATC CTCATCGGGC CTGGCACAGG CATCGTGCCC TTCCGCAGTT TCTGGCAGCA ACGGCTCCAT GACTCCCAGC ACAAGGGAGT GCGGGGAGGC CGCATGACCT TGGTGTTTGG GTGCCGCCGC CCAGATGAGG ACCACATCTA CCAGGAGGAG ATGCTGGAGA TGGCCCAGAA GGGGTTGCTG CATGCGGTGC ACACAGCCTA TTCCCGCCTG CCTGGCAAGC CCAAGGTCTA TGTTCAGGAC ATCCTGCGGC AGCAGCTGGC CAGCGAGGTG CTCCGTGTGC TCCACAAGGA GCCAGGCCAC CTCTATGTTT GCGGGGATGT GCGCATGGCC CGGGACGTGG CCCACACCCT GAAGCAGCTG GTGGCTGCCA AGCTGAAATT GAATGAGGAG CAGGTCGAGG ACTATTTCTT TCAGCTCAAG AGCCAGAAGC GCTATCACGA AGATATCTTC GGTGCTGTAT TTCCTTACGA GGCGAAGAAG GACAGGGTGG CGGTGCAGCC CAGCAGCCTG GAGATGTCAG CGCTCTGAGG GCCTACAGGA GGGGTTAAAG CTGCCGGCAC AGAACTTAAG GATGGAGCCA GCTCTGCATT ATCTGAGGTC ACAGGGCCTG GGGAGATGGA GGAAAGTGAT ATCCCCCAGC CTCAAGTCTT ATTTCCTCAA CGTTGCTCCC CATCAAGCCC TTTACTTGAC CTCCTAACAA 75

```
GTAGCACCCT GGATTGATCG GAGCCTCCTC TCTCAAACTG GGGCCTCCCT GGTCCCTTGG AGACAAAATC TTAAATGCCA GGCCTGGCGA GTGGGTGAAA GATGGAACTT GCTGCTGAGT GCACCACTTC AAGTGACCAC CAGGAGGTGC TATCGCACCA CTGTGTATTT AACTGCCTTG TGTACAGTTA TTTATGCCTC TGTATTTAAA AAACTAACAC CCAGTCTGTT CCCCATGGCC
        ACTTGGGTCT TCCCTGTATG ATTCCTTGAT GGAGATATTT ACATGAATTG CATTTTACTT TAATC-3' (FRAG. NO:_)(SEQ ID
        5'-GAATTCCCAC TCTGCTGCCT GCTCCAGCAG ACGGACGCAC AGTAACATGG GCAACTTGAA GAGCGTGGCC CAGGAGCCTG
        GGCCACCTG CGGCTGGGG CTGGGGCTGG GCCTTGGGCT GTGCGGCAAG CAGGGCCCAG CCACCCCGGC CCCTGAGCCC
       AGCCGGGCCC CAGCATCCCT ACTCCCACCA GCGCCAGAAC ACAGCCCCCC GAGCTCCCCG CTAACCCAGC CCCCAGAGGG
GCCCAAGTTC CCTCGTGTGA AGAACTGGGA GGTGGGGAGC ATCACCTATG ACACCTCAG CGCCCAGGCG CAGCAGGATG
10
       GGCCCTGCAC CCCAAGACGC TGCCTGGGCT CCCTGGTATT TCCACGGAAA CTACAGGGCC GGCCCTCCCC CGGCCCCCCG
       GCCCCTGAGC AGCTGCTGAG TCAGGCCCGG GACTTCATCA ACCAGTACTA CAGCTCCATT AAGAGGAGCG GCTCCCAGGC CCACGAACAG CGGCTTCAAG AGGTGGAAGC CGAGGTGGCA GCCACAGGCA CCTACCAGCT TAGGGAGAGC GAGCTGGTGT
       TCGGGGCTAA GCAGGCCTGG CGCAACGCTC CCCGCTGCGT GGGCCGGATC CAGTGGGGGA AGCTGCAGGT GTTCGATGCC CGGGACTGCA GGTCTGCACA GGAAATGTTC ACCTACATCT GCAACCACAT CAAGTATGCC ACCAACCGGG GCAACCTTCG
       CTCGGCCATC ACAGTGTTCC CGCAGCGCTG CCCTGGCCGA GGAGACTTCC GAATCTGGAA CAGCCAGCTG GTGCGCTACG
15
       CGGGCTACCG GCAGCAGGAC GGCCCTGGCCGA GGAGACTTCC GAATCTGGAA CAGCCAGCTG GTGCGCTACCG
CGGGCTACCG GCAGCAGGAC GGCCCTGTGC GGGGGGACCC AGCCAACGTG GAGATCACCG AGCTCTGCAT TCAGCACGGC
TGGACCCCAG GAAACGGTCG CTTCGACGTG CTGCCCCTGC TGCTGCAGGC CCCAGAAC TCTTCCTTCT
GCCCCCCGAG CTGGTCCTTG AGGTGCCCCT GGAGCACCCC ACGCTGGAGT GGTTTGCAGC CCTGGGCCTG CGCTGGTACTG
CCCTCCCGGC AGTGTCCAAC ATGCTGCTGG AAATTGGGGG CCTGAGGTTC CCCGCAGCCC CCTTCAGTGG CTGGTACATG
AGCACTGAGA TCGGCACGAG GAACCTGTGT GACCCTCACC GCTACAACAT CCTGGAGGAT GTGGCTGCTG CGCATGGACCT
       GGATACCCGG ACCACCTCGT CCCTGTGGAA AGACAAGGCA GCAGTGGAAA TCAACGTGGC CGTGCTGCAC AGTTACCAGC
TAGCCAAAGT CACCATCGTG GACCACCACG CCGCCACGGC CTCTTTCATG AAGCACCTGG AGAATGAGCA GAAGGCCAGG
        GGGGGCTGCC CTGCAGACTG GGCCTGGATC GTGCCCCCCA TCTCGGGCAG CCTCACTCCT GTTTTCCATC AGGAGATGGT
        CAACTATTTC CTGTCCCCGG CCTTCCGCTA CCAGCCAGAC CCCTGGAAGG GGAGTGCCGC CAAGGGCACC GGCATCACCA
       GGAAGAAGAC CTTTAAAGAA GTGGCCAACG CCGTGAAGAT CTCCGCCTCG CTCATGGGCA CGGTGATGGC GAAGCGAGTG
        AAGGCGACAA TCCTGTATGG CTCCGAGACC GGCCGGGCCC AGAGCTACGC ACAGCAGCTG GGGAGACTCT TCCGGAAGGC
        TITTGATCCC CGGGTCCTGT GTATGGATGA GTATGACGTG GTGTCCCTCG AACACGAGAC GCTGGTGCTG GTGGTAACCA
       GCACATTIGG GAATGGGGAT CCCCCGGAGA ATGGAGAGAG CTTTGCAGCT GCCCTGATGG AGATGTCCGG CCCCTACAAC
AGCTCCCCTC GGCCGGAACA GCACAAGAGT TATAAGATCC GCTTCAACAG CATCTCCTGC TCAGACCCAC TGGTGTCCTC
TTGGCGGCGG AAGAGGAAGG AGTCCAGTAA CACAGACAGT GCAGGGGCCC TGGGCACCCT CAGGTTCTGT GTGTTCCGGC
30
        TCGGCTCCCG GGCATACCCC CACTTCTGCG CCTTTGCTCG TGCCGTGGAC ACACGGCTGG AGGAACTGGG CGGGGAGCGG
        CTGCTGCAGC TGGGCCAGGG CGACGAGCTG TGCGGCCAGG AGGAGGCCTT CCGAGGCTGG GCCCAGGCTG CCTTCCAGGC CGCCTGTGAG ACCTTCTGTG TGGGAGAGGA TGCCAAGGCC GCCGCCCGAG ACATCTTCAG CCCCAAACGG AGCTGGAAGC
        GCCAGAGGTA CCGGCTGAGC GCCCAGGCCG AGGGCCTGCA GTTGCTGCCA GGTCTGATCC ACGTGCACAG GCGGAAGATG
        TTCCAGGCTA CAATCCGCTC AGTGGAAAAC CTGCAAAGCA GCAAGTCCAC GAGGGCCACC ATCCTGGTGC GCCTGGACAC
        COCTOCTORO CCGCGTGGAG GACCCGCCGG CGCCCACTGA GCCCGTGGCA GTAGAGCAGC TGGAGAAGGG CAGCCCTGGT GCCCCTCCCC CCGGCTGGGT GCGGGACCCC CGGCTGCCCC CGTGCACGCT GCGCCAGGCT CTCACCTTCT TCCTGGACAT
       CACCTCCCCA CCCAGCCCTC AGCTCTTGCG GCTGCTCAGC ACCTTGGCAG AAGAGCCCAG GGAACAGCAG GAGCTGGAGG
       CCCTCAGCCA GGATCCCGA CGCTACGAGG AGTGGAAGTG GTTCCGCTGC CCCACGCTGC TGGAGGTGCT GGAGCAGTTC CCGTCGGTGG CGCTGCCTGC CCCACTGCTC CTCACCCAGC TGCCTCTGCT CCAGCCCGG TACTACTCAG TCAGCTCGGC ACCCAGCACC CACCCAGGAG AGATCCACCT CACTGTAGCT GTGCTGGCAT ACAGGACTCA GGATGGGCTG GGCCCCCTGC ACTATGGAGT CTGCTCCACG TGGCTAAGCC AGCTCAAGCC CGGAGACCCT GTGCCCTGCT TCATCCGGGG GGCTCCCTCC TTCCGGCTGC CACCCGATCC CAGCTTGCCC TGCATCCTGG TGGGTCCAGG CACTGGCATT GCCCCCTTCC GGGGATTCTG
       GCAGGAGCGG CTGCATGACA TTGAGAGCAA AGGGCTGCAG CCCACTCCCA TGACTTTGGT GTTCGGCTGC CGATGCTCCC AACTTGACCA TCTCTACCGC GACGAGGTGC AGAACGCCCA GCAGGCGCGG GTGTTTGGCC GAGTCCTCAC CGCCTTCTCC CGGGAACCTG ACAACCCCAA GACCTACGTG CAGGACATCC TGAGGACGGA GCTGGCTGCG GAGGTGCACC GCGTGCTGTG
       CCTCGAGCGG GGCCACATGT TTGTCTGCGG CGATGTTACC ATGGCAACCA ACGTCCTGCA GACCGTGCAG CGCATCCTGG
CGACGGAGGG CGACATGGAG CTGGACGAG CCGCGCGACGT CATCGGCGTG CTGCGGGATC AGCAACGCTA CCACGAAGAC
ATTTTCGGGC TCACGCTGCG CACCCAGGAG GTGACAAGCC GCATACGCAC CCAGAGCTTT TCCTTGCAGG AGCGTCAGTT
GCGGGGCGCA GTGCCCTGGG CGTTCGACCC TCCCGGCTCA GACACCAACA GCCCCTGAGA GCCGCTGGC TTTCCCTTCC
AGTTCCGGGA GAGCGGCTGC CCGACTCAGG TCCGCCCGAC CAGGATCAGC CCCGCTCCTC CCCTCTTGAG GTGGTGCCTT
       CTCACATCTG TCCAGAGGCT GCAAGGATTC AGCATTATTC CTCCAGGAAG GAGCAAAACG CCTCTTTTCC CTCTCTAGGC CTGTTGCCTC GGGCCTGGGT CCGCCTTAAT CTGGAAGGCC CCTCCCAGCA GCGGTACCCC AGGGCCTACT GCCACCCGCT
55
       TCCTGTTTCT TAGTCCGAAT GTTAGATTCC TCTTGCCTCT CTCAGGAGTA TCTTACCTGT AAAGTCTAAT CTCTAAATCA
       AGTATTTATT ATTGAAGATT TACCATAAGG GACTGTGCCA GATGTTAGGA GAACTACTAA AGTGCCTACC CCAGCTC-3' (FRAG.
       NO: )(SEQ ID NO:11877)
        5'-CCCCGGGG-3' (FRAG. NO:1898) (SEQ ID NO:11280)
        5'-GGGGCCGCTGGG-3' (FRAG. NO:1899) (SEQ ID NO:11281)
       5'-GGGGGTGTGG-3' (FRAG. NO:1900) (SEQ ID NO:11282)
        5'-CTGCCTCCCGGGGT-3' (FRAG. NO:1442)(SEQ ID NO:10820)
        5'-TTCTGCTGCTTGCTG-3' (FRAG. NO:1443)(SEQ ID NO:10821)
        5'-CTTCTTTCCCGTCTCC-3' (FRAG. NO:1444)(SEQ ID NO:10822)
       5'-CTTCTTTCCCGTCTCC-3' (FRAG. NO:1445)(SEQ ID NO:10823)
       5'-TTTTTGCCTCTTTG-3' (FRAG. NO:1446)(SEQ ID NO:10824)
       5'-GGTTCCTGTTGTTTCT-3' (FRAG. NO:1447)(SEQ ID NO:10825)
       5'-GGCCTGCTTGGTGGCG-3' (FRAG. NO:1448)(SEQ ID NO:10826)
       5'-GCTTGTGCGTTTCC-3' (FRAG. NO:1449)(SEQ ID NO:10827)
       5'-TCTCTCTTCTCTTGGGTCTCCGCTTCTCGTCCTGCC-3' (FRAG. NO:1450)(SEQ ID NO:10828)
       5'-TTTTCCTGTCTCTCTCGC-3' (FRAG. NO:1451)(SEQ ID NO:10829)
70
       5'-GCCGTTCCTCC-3' (FRAG. NO:1452)(SEQ ID NO:10830)
        5'-GGCGTCCTCCTGCCC-3' (FRAG. NO:1453)(SEO ID NO:10831)
       5'-TGTGCTGTTTGCCTCGG-3' (FRAG. NO:1454)(SEQ ID NO:10832)
        5'-GTGGTGCGGGTCCC-3' (FRAG. NO:1455)(SEQ ID NO:10833)
       5'-GGTGCTCCCCGGC-3' (FRAG. NO:1456)(SEQ ID NO:10834)
```

```
5'-GGGCCGGCTGGTTGCCTGGGC-3' (FRAG. NO:1457)(SEQ ID NO:10835)
       5'-CTGTCTGGTGGGGTGTGGGGCC-3' (FRAG. NO:1458)(SEQ ID NO:10836)
       5'-GCTGGGTTGGGGGTGTGGTG-3' (FRAG. NO:1459)(SEQ ID NO:10837)
       5'-GGCTCTTCTGTGGCC-3' (FRAG. NO:1460)(SEQ ID NO:10838)
5'-TGTGGGGCTGTTGGTG-3' (FRAG. NO:1461)(SEQ ID NO:10839)
        5'-TCTCTGTGGGCGTGTG-3' (FRAG. NO:1462)(SEQ ID NO:10840)
        5'-CTGGGTCTTGGGGCTTC-3' (FRAG. NO:1463)(SEQ ID NO:10841)
        5'-CTCCCTTGTGCTGGG-3' (FRAG. NO:1464)(SEQ ID NO:10842)
       5'-TGCGGCCTCCCCGC-3' (FRAG. NO:1465)(SEQ ID NO:10843)
10
       5'-CCCCTTCTGGGCC-3' (FRAG. NO:1466)(SEQ ID NO:10844)
       5'-GGTGGCCTGGCTCCTTGTGG-3' (FRAG. NO:1467)(SEQ ID NO:10845)
5'-GCGCTTCTGGCTCTTG-3' (FRAG. NO:1468)(SEQ ID NO:10846)
        5'-CCCTGTCCTTCTCGCCTCGT-3' (FRAG. NO:1469)(SEQ ID NO:10847)
       5'-GGCTGCTGGGCTGC-3' (FRAG. NO:1470)(SEQ ID NO:10848)
5'-CTGCCCCBGTTTTTGBTCCTCBCBTGCCGTGGGGBGGBCBBTGG-3'(FRAG. NO:1901) (SEQ ID NO:11283)
       NF-κB Nucleic Acids and Antisense Oligonucleotide Fragments
        5'-CGGCCCTTCT CACTGGAGGC ACCGGGCAGT CCTCCATGGG AGGGTTGGGC TTGGCCGGGG CTGCCCGGTO CCTCCTCTTG
       20
       CTGGTGCCC CGTGGGGTCC TGGGCGTGGT GGGGGGCGTC TGGTGCCCCGT TCTGCCCCGT GGGGCTTCGG GCTCGGGGCTCG GTTTCGTCCC CCTGCCGCCTC TGTGGCCCCC GTTTTCGCCC CTTCGGGTGT CCTTCTCGGC GTTTGTCCCC GGGTCCCCGG CCTGCTGGGC CCTGCTGGGC CCTGCTGGGC CCTGCTGGGC CCTGCTGGGC CCTGTGTCTC TGCCCCCTC TGGTGGCTCG GCTTGTCTCG GCTTGTCTCG
25
        GGTGGGTGTG GGGTGTTTTC GGGGTCCTCC CCTTCCC-3' (FRAG. NO:1902) (SEQ ID NO:11284)
       5'-GGGCGGGGTCGC-3' (FRAG. NO:1903) (SEQ ID NO:11285)
5'-GCGCCGTCC-3' (FRAG. NO:1904) (SEQ ID NO:11286)
       5'-GGGCGTGGTGG-3' (FRAG. NO:1905) (SEQ ID NO:11287)
5'-GTTGGGCTTGGCCGGGG-3' (FRAG. NO:1471)(SEQ ID NO:10849)
       5'-CTGCCCGGTGCCCCC-3' (FRAG. NO:1472)(SEQ ID NO:10850)
5'-TCTTGGCTGGTCCCTCGT-3' (FRAG. NO:1472)(SEQ ID NO:10851)
5'-TGTCCTTGGGCCCC-3' (FRAG. NO:1474)(SEQ ID NO:10852)
        5'-GCTCCCGCTGCTCGGCCTCCGT-3' (FRAG. NO:1475)(SEQ ID NO:10853)
       5'-GTTCTTTGGCCTCTC-3' (FRAG. NO:1476)(SEQ ID NO:10854)
5'-GCTGCTGCTTGCCT3' (FRAG. NO:1477)(SEQ ID NO:10855)
5'-CGTCCCCTCCTCGCTTGCGTTTC-3' (FRAG. NO:1478)(SEQ ID NO:10856)
        5'-CCTCTTCCTTGTCTTCCA-3' (FRAG. NO:1479)(SEQ ID NO:10857)
       5'-GGCCTTCCGCTGC-3' (FRAG. NO:1480)(SEQ ID NO:10858)
5'-TGGGGCCCGCGCCGG-3' (FRAG. NO:1481)(SEQ ID NO:10859)
5'-GGGGGCCTCGGCTCCGCGGCTTCCTCCCCGG-3' (FRAG. NO:1482)(SEQ ID NO:10860)
        5'-CTGGGGGGTCCTGG-3' (FRAG. NO:1483)(SEQ ID NO:10861)
       5'-TCTCCGGGGCCTGCGCTCGC-3' (FRAG. NO:1484)(SEQ ID NO:10862)
5'-GGGCTCGGGGCTGCGCC-3' (FRAG. NO:1485)(SEQ ID NO:10863)
5'-GCGCGGGGCTCCGCGGTG-3' (FRAG. NO:1486)(SEQ ID NO:10864)
        5'-GGTGGCGCTGTCCCGCC-3' (FRAG. NO:1487)(SEQ ID NO:10865)
        5'-GTGGTGTGTCTCCGTTCTCGTCCTGCGCCGTC-3' (FRAG, NO:1488)(SEO ID NO:10866)
        5'-CTGGTCTGCCCGTGG-3' (FRAG. NO:1489)(SEQ ID NO:10867)
5'-GGTCCTGGGCGTGGTGG-3' (FRAG. NO:1490)(SEQ ID NO:10868)
50
       5'-GGGGCGTCTGGTGC-3' (FRAG. NO:1491)(SEQ ID NO:10869)
        5'-CTCGTCTGCCCCGTG-3' (FRAG. NO:1492)(SEQ ID NO:10870)
        5'-GGGCTTCGGGCTCGC-3' (FRAG. NO:1493)(SEQ ID NO:10871)
5'-GGCTGTTCGTCCCCCCTGCCGCTCTGTGGCCTCC-3' (FRAG. NO:1494)(SEQ ID NO:10872)
        5'-GGGGCTCCTCGTTTTC-3' (FRAG. NO:1495)(SEQ ID NO:10873)
        5'-GCTGCTTCGGGTGTCCTTCTC-3' (FRAG. NO:1496)(SEQ ID NO:10874)
        5'-GGCGTGTGGCCCGG-3' (FRAG. NO:1497)(SEQ ID NO:10875)
5'-GTCCCGGCCTGCTGGGCTGGGCGGGGTC-3' (FRAG. NO:1498)(SEQ ID NO:10876)
        5'-GCTGCCCTGGGCTTCTGGCCCGTCT-3' (FRAG. NO:1499)(SEQ ID NO:10877)
        5'-GGTTGTCTGTCGGT-3' (FRAG. NO:1500)(SEQ ID NO:10878)
       5'-GCTTGTCTCGGGTTTCTGG-3' (FRAG. NO:1501)(SEQ ID NO:10879)
5'-CCTCTGTGCTGGGC-3' (FRAG. NO:1502)(SEQ ID NO:10880)
        5'-GCTTCTCTGCCTCCTGCTCC-3' (FRAG. NO:1503)(SEQ ID NO:10881)
       5-GCTCTGCCTCCTGCTCC-3' (FRAG. NO:1303)(SEQ ID NO:10881)
5-GCCTCCTGGTGGCTC-3' (FRAG. NO:1504)(SEQ ID NO:10882)
5-GGGTGGGGTGCCCGTGCG-3' (FRAG. NO:1505)(SEQ ID NO:10883)
5-GGGGTGGGTGTGGGTGTT-3' (FRAG. NO:1506)(SEQ ID NO:10884)
5-TTCGGGGTCCTCCCCTTCCC-3' (FRAG. NO:1507)(SEQ ID NO:10885)
5-CGGCCCTTCTCACTGGAGGCACCGGGCAGTCCTCCATGGGAGG-3' (FRAG.NO:1906)(SEQ ID NO:11288)
       TCT TGG CTT TBT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT CCC TCC CCT GCC GTG TTG
        (SEO ID NO:11289)
        5'-GGG GGA GTT-3' (FRAG. ID:1908) (SEQ ID NO:11290)
```

```
5'-G CCC TGG GCC C-3' (FRAG, ID:1909) (SEQ ID NO:11291)
      5'-GTT TCA TCT TGG CTT TAT CC-3' (FRAG. NO:1508) (SEQ ID NO:10886)
      5'-TCT CCC CTT GTT CCT CCC C-3' (FRAG. NO:1509)(SEQ ID NO:10887)
      5'-TCT CCT GCT CTG GRG TCT CCT C-3' (FRAG. NO:1510)(SEQ ID NO:10888)
      5'-TTC CCT CCC TCC CCT GCC-3' (FRAG. NO:1511)(SEQ ID NO:10889)
      5'-GTG TTG TCT GTG GGT GTC C-3' (FRAG. NO:1512)(SEQ ID NO:10890)
      5'-GTT TCG CTC TTG TTG CCC-3' (FRAG. NO:1513)(SEQ ID NO:10891)
      5'-TGG GCC CTT CCC TGC TGG-3' (FRAG, NO:1514)(SEQ ID NO:10892)
      5'-GGG GGA GTT TCA TCT TGG-3' (FRAG. NO:1515)(SEQ ID NO:10893)
      5'-GTT TCA TCT TGG CTT TAT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT CCC TCC CCT GCC
10
      ID:1910) (SEQ ID NO:11292)
      S'GTT TEB TET TGG CTT TBT CETET CCC CTT GTT CCT CCC CTCT CCT GET CTG GRG TET CCT C TTC CCT CCC TCC CCT GCC
      ID:1911) (SEQ ID NO:11293)
      Human Eosinophil Major Basic Protein Nucleic Acids and Antisense Oligonucleotide Fragments
      5'-GGG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1516)(SEQ ID NO:10894)
      5'-GGG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1517)(SEQ ID NO:10895)
5'-GGG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1518)(SEQ ID NO:10896)
20
      5'-GGG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1519)(SEQ ID NO:10897)
       5'-GGG GGB GTT TCB TCT TGG-3' (FRAG. NO:1520)(SEQ ID NO:10898)
      5'-GGG GGB GTT TCB TCT TG-3' (FRAG. NO:1521)(SEQ ID NO:10899)
5'-GGG GGB GTT TCB TCT T-3' (FRAG. NO:1522)(SEQ ID NO:10900)
       5'-GGG GGB GTT TCB TCT-3' (FRAG. NO:1523)(SEQ ID NO:10901)
      5'-GGG GGB GTT TCB TC-3' (FRAG. NO:1524)(SEQ ID NO:10902)
      5'-GGG GGB GTT TCB T-3' (FRAG. NO:1525)(SEQ ID NO:10903)
5'-GGG GGB GTT TCB-3' (FRAG. NO:1526)(SEQ ID NO:10904)
       5'-GG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1527)(SEQ ID NO:10905)
      5'-GG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1528)(SEQ ID NO:10906)
       5'-GG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1529)(SEQ ID NO:10907)
       5'-GG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1530)(SEQ ID NO:10908)
       5'-GG GGB GTT TCB TCT TGG-3' (FRAG. NO:1531)(SEQ ID NO:10909)
       5'-GG GGB GTT TCB TCT TG-3' (FRAG. NO:1532)(SEQ ID NO:10910)
      5'-GG GGB GTT TCB TCT T-3' (FRAG. NO:1533)(SEQ ID NO:10911)
5'-GG GGB GTT TCB TCT-3' (FRAG. NO:1534)(SEQ ID NO:10912)
       5'-GG GGB GTT TCB TC-3' (FRAG. NO:1535)(SEQ ID NO:10913)
       5'-GG GGB GTT TCB T-3' (FRAG. NO:1536)(SEQ ID NO:10914)
       5'-G GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1537)(SEQ ID NO:10915)
       5'-G GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1538)(SEQ ID NO:10916)
40
       5'-G GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1539)(SEQ ID NO:10917)
       5'-G GGB GTT TCB TCT TGG C-3' (FRAG. NO:1540)(SEQ ID NO:10918)
      5'-G GGB GTT TCB TCT TGG-3' (FRAG. NO:1541)(SEQ ID NO:10919)
5'-G GGB GTT TCB TCT TG-3' (FRAG. NO:1542)(SEQ ID NO:10920)
5'-G GGB GTT TCB TCT T-3' (FRAG. NO:1543)(SEQ ID NO:10921)
       5'-G GGB GTT TCB TCT-3' (FRAG. NO:1544)(SEQ ID NO:10922)
       5'-G GGB GTT TCB TC-3' (FRAG. NO:1545)(SEQ ID NO:10923)
       5'-GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1546)(SEQ ID NO:10924)
       5'-GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1547)(SEQ ID NO:10925)
5'-GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1548)(SEQ ID NO:10926)
       5'-GGB GTT TCB TCT TGG C-3' (FRAG. NO:1549)(SEQ ID NO:10927)
       5'-GGB GTT TCB TCT TGG-3' (FRAG. NO:1550)(SEQ ID NO:10928)
5'-GGB GTT TCB TCT TG-3' (FRAG. NO:1551)(SEQ ID NO:10929)
       5'-GGB GTT TCB TCT T-3' (FRAG. NO:1552)(SEQ ID NO:10930)
      5'-GGB GTT TCB TCT-3' (FRAG. NO:1553)(SEQ ID NO:10931)
5'-GB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1554)(SEQ ID NO:10932)
       5'-GB GTT TCB TCT TGG CTT-3' (FRAG. NO:1555)(SEQ ID NO:10933)
       5'-GB GTT TCB TCT TGG CT-3' (FRAG. NO:1556)(SEQ ID NO:10934)
       5'-GB GTT TCB TCT TGG C-3' (FRAG. NO:1557)(SEQ ID NO:10935)
       5'-GB GTT TCB TCT TGG-3' (FRAG. NO:1558)(SEQ ID NO:10936)
       5'-GB GTT TCB TCT TG-3' (FRAG. NO:1559)(SEQ ID NO:10937)
       5'-GB GTT TCB TCT T-3' (FRAG. NO:1560)(SEQ ID NO:10938)
       5'-B GTT TCB TCT TGG CTT T-3' (FRAG. NO:1561)(SEQ ID NO:10939)
       5'-B GTT TCB TCT TGG CTT-3' (FRAG. NO:1562)(SEQ ID NO:10940)
5'-B GTT TCB TCT TGG CTT-3' (FRAG. NO:1563)(SEQ ID NO:10941)
       5'-B GTT TCB TCT TGG CT-3' (FRAG. NO:1564)(SEQ ID NO:10942)
       5'-B GTT TCB TCT TGG C-3' (FRAG. NO:1565)(SEQ ID NO:10943)
       5'-B GTT TCB TCT TGG-3' (FRAG. NO:1565)(SEQ ID NO:10944)
       5'-B GTT TCB TCT TG-3' (FRAG. NO:1567)(SEQ ID NO:10945)
       5'-GTT TCB TCT TGG CTT T-3' (FRAG. NO:1568)(SEQ ID NO:10946)
5'-GTT TCB TCT TGG CTT-3' (FRAG. NO:1569)(SEQ ID NO:10947)
5'-GTT TCB TCT TGG CT-3' (FRAG. NO:1570)(SEQ ID NO:10948)
       5'-GTT TCB TCT TGG C-3' (FRAG. NO:1571)(SEQ ID NO:10949)
       5'-GTT TCB TCT TGG-3' (FRAG. NO:1572)(SEQ ID NO:10950)
       5'-TT TCB TCT TGG CTT T-3' (FRAG. NO:1573)(SEQ ID NO:10951)
```

5'-TT TCB TCT TGG CTT-3' (FRAG. NO:1574)(SEQ ID NO:10952)

5'-TT TCB TCT TGG CT-3' (FRAG. NO:1575)(SEQ ID NO:10953) 5'-TT TCB TCT TGG C-3' (FRAG. NO:1576)(SEQ ID NO:10954) 5'-T TCB TCT TGG CTT T-3' (FRAG. NO:1577)(SEQ ID NO:10955) 5'-T TCB TCT TGG CTT-3' (FRAG. NO:1578)(SEQ ID NO:10956) 5'-T TCB TCT TGG CT-3' (FRAG. NO:1579)(SEQ ID NO:10957) 5'-TCB TCT TGG CTT T-3' (FRAG. NO:1580)(SEQ ID NO:10958) 5'-TCB TCT TGG CTT-3' (FRAG. NO:1581)(SEQ ID NO:10959) 5'-GGG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1582)(SEQ ID NO:10960) 5'-GG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1583)(SEQ ID NO:10961) 10 5'-G GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1584)(SEQ ID NO:10962) 5'-GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1585)(SEQ ID NO:10963) 5'-GB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1586)(SEQ ID NO:10964) 5'-B GTT TCB TCT TGG CTT T-3' (FRAG. NO:1587)(SEQ ID NO:10965) 5'-GTT TCB TCT TGG CTT T-3' (FRAG. NO:1588)(SEQ ID NO:10966) 5'-TT TCB TCT TGG CTT T-3' (FRAG. NO:1589)(SEQ ID NO:10967)
5'-T TCB TCT TGG CTT T-3' (FRAG. NO:1590)(SEQ ID NO:10968)
5'-TCB TCT TGG CTT T-3' (FRAG. NO:1591)(SEQ ID NO:10969) 15 5'-CB TCT TGG CTT T-3' (FRAG. NO:1592)(SEQ ID NO:10970) 5'-GGG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1593)(SEQ ID NO:10971) 20 5'-GG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1594)(SEQ ID NO:10972) 5'-G GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1595)(SEQ ID NO:10973) 5'-GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1596)(SEQ ID NO:10974) 5'-GB GTT TCB TCT TGG CTT-3' (FRAG. NO:1597)(SEQ ID NO:10975) 5'-B GTT TCB TCT TGG CTT-3' (FRAG. NO:1598)(SEQ ID NO:10976) 5'-GTT TCB TCT TGG CTT-3' (FRAG. NO:1599)(SEQ ID NO:10977) 25 5'-TT TCB TCT TGG CTT-3' (FRAG. NO:1600)(SEQ ID NO:10978) 5'-T TCB TCT TGG CTT-3' (FRAG. NO:1601)(SEQ ID NO:10979)
5'-TCB TCT TGG CTT-3' (FRAG. NO:1602)(SEQ ID NO:10980) 5'-GGG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1603)(SEQ ID NO:10981) 30 5'-GG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1604)(SEQ ID NO:10982) 5'-G GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1605)(SEQ ID NO:10983) 5'-GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1606)(SEQ ID NO:10984) 5'-GB GTT TCB TCT TGG CT-3' (FRAG. NO:1607)(SEQ ID NO:10985) 5'-B GTT TCB TCT TGG CT-3' (FRAG. NO:1608)(SEQ ID NO:10986) 5'-GTT TCB TCT TGG CT-3' (FRAG. NO:1609)(SEQ ID NO:10987) 5'-TT TCB TCT TGG CT-3' (FRAG. NO:1610)(SEQ ID NO:10988)
5'-T TCB TCT TGG CT-3' (FRAG. NO:1611)(SEQ ID NO:10989) 5'-GGG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1612)(SEQ ID NO:10990) 5'-GG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1613)(SEQ ID NO:10991) 5'-G GGB GTT TCB TCT TGG C-3' (FRAG. NO:1614)(SEQ ID NO:10992) 5'-GGB GTT TCB TCT TGG C-3' (FRAG. NO:1615)(SEQ ID NO:10993) 5'-GB GTT TCB TCT TGG C-3' (FRAG. NO:1616)(SEQ ID NO:10994) 5'-B GTT TCB TCT TGG C-3' (FRAG. NO:1617)(SEQ ID NO:10995) 5'-GTT TCB TCT TGG C-3' (FRAG. NO:1618)(SEQ ID NO:10996) 5'-TT TCB TCT TGG C-3' (FRAG. NO:1619)(SEQ ID NO:10997) 45 5'-GGG GGB GTT TCB TCT TGG-3' (FRAG. NO:1620)(SEQ ID NO:10998) 5'-GG GGB GTT TCB TCT TGG-3' (FRAG. NO:1621)(SEQ ID NO:10999) 5'-G GGB GTT TCB TCT TGG-3' (FRAG. NO:1622)(SEQ ID NO:11000) 5'-GGB GTT TCB TCT TGG-3' (FRAG. NO:1623)(SEQ ID NO:11001) 50 5'-GB GTT TCB TCT TGG-3' (FRAG. NO:1624)(SEQ ID NO:11002) 5'-B GTT TCB TCT TGG-3' (FRAG. NO:1625)(SEQ ID NO:11003) 5'-GTT TCB TCT TGG-3' (FRAG. NO:1626)(SEQ ID NO:11004)
5'-GGG GGB GTT TCB TCT TG-3' (FRAG. NO:1627)(SEQ ID NO:11005)
5'-GG GGB GTT TCB TCT TG-3' (FRAG. NO:1628)(SEQ ID NO:11006) 5'-G GGB GTT TCB TCT TG-3' (FRAG. NO:1629)(SEQ ID NO:11007) 5'-GGB GTT TCB TCT TG-3' (FRAG. NO:1630)(SEQ ID NO:11008) 5'-GB GTT TCB TCT TG-3' (FRAG. NO:1631)(SEQ ID NO:11009) 5'-B GTT TCB TCT TG-3' (FRAG. NO:1632)(SEQ ID NO:11010) 5'-GGG GGB GTT TCB TCT T-3' (FRAG. NO:1633)(SEQ ID NO:11011) 5'-GG GGB GTT TCB TCT T-3' (FRAG. NO:1634)(SEQ ID NO:11012) 5'-G GGB GTT TCB TCT T-3' (FRAG. NO:1635)(SEQ ID NO:11013) 5'-G GGB GTT TCB TCT T-3' (FRAG. NO:1636)(SEQ ID NO:11014) 5'-GGB GTT TCB TCT T-3' (FRAG. NO:1637)(SEO ID NO:11015) 5'-GB GTT TCB TCT T-3' (FRAG. NO:1638)(SEQ ID NO:11016) 5'-GGG GGB GTT TCB TCT-3' (FRAG. NO:1639)(SEQ ID NO:11017) 5'-GG GGB GTT TCB TCT-3' (FRAG. NO:1640)(SEQ ID NO:11018) 5'-G GGB GTT TCB TCT-3' (FRAG. NO:1641)(SEQ ID NO:11019) 5-GGB GTT TCB TCT-3' (FRAG. NO:1642)(SEQ ID NO:11020) 5-GGG GGB GTT TCB TC-3' (FRAG. NO:1643)(SEQ ID NO:11021) 5-GG GGB GTT TCB TC-3' (FRAG. NO:1644)(SEQ ID NO:11022) 70 5'-G GGB GTT TCB TC-3' (FRAG. NO:1645)(SEQ ID NO:11023) 5'-GGG GGB GTT TCB T-3' (FRAG. NO:1646)(SEQ ID NO:11024) 5'-GG GGB GTT TCB T-3' (FRAG. NO:1647)(SEQ ID NO:11025) 5'-GGG GGB GTT TCB-3' (FRAG. NO:1648)(SEQ ID NO:11026) 5'-TCT CCC CTT GTT CCT CCC C-3' (FRAG. NO:1649)(SEQ ID NO:11027)

75

```
5'-TCT CCT GCT CTG GTG TCT CCT C-3' (FRAG. NO:1650)(SEQ ID NO:11028)
             5'-TTC CCT CCC TCC CCT GCC-3' (FRAG. NO:1651)(SEQ ID NO:11029)
5'-GTG TTG TCT GTG GGT GTC C-3' (FRAG. NO:1652)(SEQ ID NO:11030)
5'-GTT TCG CTC TTG TTG CCC-3' -3' (FRAG. NO:1653)(SEQ ID NO:10891)
             5'-TGG GCC CTT CCC TGC TGG-3' (FRAG. NO:1654)(SEQ ID NO:11032)
             5'-GGG GGB G-3' (FRAG. NO:1912)(SEQ ID NO:11294)
             5'-GTG GGT GTC C-3' (FRAG. NO:1913) (SEQ ID NO:11295)
             BP-1 Nucleic Acids and Antisense Oligonucleotide Fragments
5'-CCGTGTTGTC BGTGGTGCTG CCCGTTTGBG GTBTGGCGCT CCBCCBBTTC CCTTTCTCC TTGTTTCCG TTTCTCTTGC
CGTCTGTGGT T-3' (FRAG. NO:1914) (SEQ ID NO:11296)
5'-CCCGTTTGBGGTBTGGC-3'(FRAG. NO:1915) (SEQ ID NO:11297)
             5'-GCTCCBCCBBTTCCCTTTTCTCC-3'(FRAG. NO:1915) (SEQ ID NO:11298)
5'-TTGTTTTCCCGTTCTCTG-3'(FRAG. NO:1917) (SEQ ID NO:11299)
5'-CCGTCTGTGGTT-3'(FRAG. NO:1918) (SEQ ID NO:11300)
5'-CCCGTTTGAGGTATGGC-3'(FRAG. NO:1919) (SEQ ID NO:11301)
5'-GCTCCBCCAATTCCCTTTTCTCC-3'(FRAG. NO:1920) (SEQ ID NO:11302)
15
             C/EBPNucleic Acids and Antisense Oligonucleotide Antisense Oligonucleotide Fragments
             5'-GGGCCCBGCCCGCCGCTTTTCTBGCCCC GGC-3' (FRAG. NO:1921) (SEQ ID NO:11303)
5'-GGGCCBGCCCGCCGCTTTTCTBGCCCC GGC-3' (FRAG. NO:1922) (SEQ ID NO:11304)
5'-GGGCCCB GCCCGCCGCCTTTTCTBGCCCCGG-3' (FRAG. NO:1923) (SEQ ID NO:11305)
20
             5'-GGGCCCBGCCCGCCCTTTTCTBGCCCCG-3' (FRAG. NO:1924) (SEQ ID NO:11306)
             5'-GGGCCCBGCCCGCCGCCTTTTCTBGCCC-3' (FRAG. NO:1925) (SEQ ID NO:11307)
5'-GGGCCCBGCCCGCCGCTTTTCTBGCC-3' (FRAG. NO:1926) (SEQ ID NO:11307)
5'-GGGCCCBGCCCGCCGCCTTTTCTBGCC-3' (FRAG. NO:1927) (SEQ ID NO:11308)
5'-GGGCCCBGCCCGCCGCCTTTTCTBGCC-3' (FRAG. NO:1927) (SEQ ID NO:11310)
25
             5'-GGGCCCBGCCCGCCGCTTTTCTBG-3' (FRAG. NO:1929) (SEQ ID NO:11311)
5'-GGGCCCBGCCCGCCGCCTTTTCTB-3' (FRAG. NO:1930) (SEQ ID NO:11312)
5'-GGGCCCBGCCCGCCGCCTTTTCT-3' (FRAG. NO:1931) (SEQ ID NO:11311) 1944)
             5'-GGGCCCBGCCCGCCCTTTTC-3' (FRAG. NO:1932) (SEQ ID NO:11314)
5'-GGGCCCBGCCCGCCGCCTTTT-3' (FRAG. NO:1933) (SEQ ID NO:11315)
5'-GGGCCCBGCCCGCCGCCTTT-3' (FRAG. NO:1934) (SEQ ID NO:11316) [1945)]
5'-GGGCCCBGCCCGCCGCCTT-3' (FRAG. NO:1935) (SEQ ID NO:11317)
30
             5'-GGGCCCBGCCCGCCGCCT-3' (FRAG. NO:1936) (SEQ ID NO:11318)
             5'-GGGCCCBGCCCGCCGC-3' (FRAG. NO:1937) (SEQ ID NO:11319)
5'-GGGCCBGCCCGCCGC-3' (FRAG. NO:1938) (SEQ ID NO:11320)
5'-GGGCCCBGCCCGCCG-3' (FRAG. NO:1939) (SEQ ID NO:11321)
35
             5'-GGGCCCBGCCCGCC-3' (FRAG. NO:1940) (SEQ ID NO:11322)
             5'-GGGCCCBGCCCGG-3' (FRAG. NO:1941) (SEQ ID NO:11323)
5'-GGGCCCBGCCCG-3' (FRAG. NO:1942) (SEQ ID NO:11324)
5'-GGGCCCBGCCCG-3' (FRAG. NO:1943) (SEQ ID NO:11325)
             5'-GGGCCCBGCCC-3' (FRAG. NO:1944) (SEQ ID NO:11326)
             5'-GGCCCBGCCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1945) (SEQ ID NO:11327)
             5'-GCCCBGCCCGCCGCTTTTCTBGCCCCGGC-3' (FRAG. NO:1945) (SEQ ID NO:11328) 5'-CCBGCCCGCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1947) (SEQ ID NO:11328) 5'-CCBGCCCGCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1948) (SEQ ID NO:11330) 5'-CBGCCCCGCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1948) (SEQ ID NO:11331)
             5'-BGCCCGGCGCTTTTCTBGCCCCGGC-3' (FRAG. NO:1950) (SEQ ID NO:11332)
5'-GCCCGCCGCCGCTTTTCTBGCCCCGGC-3' (FRAG. NO:1951) (SEQ ID NO:11333)
5'-CCCCGCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1952) (SEQ ID NO:11334)
             5'-CCCGCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1953) (SEQ ID NO:11335)
5'-CGCCGCCGCTTTTCTBGCCCCGGC-3' (FRAG. NO:1954) (SEQ ID NO:11336)
5'-CGCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1955) (SEQ ID NO:11337)
5'-GCCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1956) (SEQ ID NO:11338)
50
             5'-CCGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1957) (SEQ ID NO:11339)
             5'-CGCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1958) (SEQ ID NO:11340)
5'-GCCTTTTCTBGCCCCGGC-3' (FRAG. NO:1959) (SEQ ID NO:11341)
5'-CCTTTTCTBGCCCCGGC-3' (FRAG. NO:1960) (SEQ ID NO:11342)
55
             5'-CTTTTCTBGCCCCGGC-3' (FRAG. NO:1961) (SEQ ID NO:11343)
5'-TTTTCTBGCCCCGGC-3' (FRAG. NO:1962) (SEQ ID NO:11344)
5'-TTTCTBGCCCCGGC-3' (FRAG. NO:1963) (SEQ ID NO:11345)
5'-TTCTBGCCCCGGC-3' (FRAG. NO:1964) (SEQ ID NO:11346)
60
             5'-TCTBGCCCCGGC-3' (FRAG. NO:1965) (SEQ ID NO:11347)
             5'-CTBGCCCCGGC-3' (FRAG. NO:1966) (SEQ ID NO:11348)
5'-GCGBGGCTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1967) (SEQ ID NO:11349)
5'-GCGBGGCTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1968) (SEQ ID NO:11350)
65
             5'-GCGBGGCTGTCBCCTCGCTGGG-3' (FRAG. NO:1969) (SEQ ID NO:11350)
5'-GCGBGGCTGTCBCCTCGCTGGG-3' (FRAG. NO:1970) (SEQ ID NO:11352)
5'-GCGBGGCTGTCBCCTCGCTGG-3' (FRAG. NO:1971) (SEQ ID NO:11352)
5'-GCGBGGCTGTCBCCTCGCTG-3' (FRAG. NO:1972) (SEQ ID NO:11354)
5'-GCGBGGCTGTCBCCTCGCT-3' (FRAG. NO:1973) (SEQ ID NO:11355)
             5'-GCGBGGCTGTCBCCTCGC-3' (FRAG. NO:1974) (SEQ ID NO:11356)
5'-GCGBGGCTGTCBCCTCG-3' (FRAG. NO:1975) (SEQ ID NO:11357)
             5'-GCGBGGCTGTCBCCTC-3' (FRAG. NO:1976) (SEQ ID NO:11358)
```

5'-GCGBGGCTGTCBCCT-3' (FRAG. NO:1977) (SEQ ID NO:11359)

```
5'-GCGBGGCTGTCBCC-3' (FRAG. NO:1978) (SEQ ID NO:11360)
        5'-GCGBGGCTGTCBC-3' (FRAG. NO:1979) (SEQ ID NO:11361)
        5'-GCGBGGCTGTCB-3' (FRAG. NO:1980) (SEQ ID NO:11362)
       5'-GCGBGGCTGTC-3' (FRAG. NO:1981) (SEQ ID NO:11363)
5'-GCGBGGCTGT-3' (FRAG. NO:1982) (SEQ ID NO:11364)
5'-CGBGGCTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1983) (SEQ ID NO:11365)
        5'-GBGGCTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1984) (SEQ ID NO:11366)
        5'-BGGCTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1985) (SEQ ID NO:11367)
5'-GGCTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1986) (SEQ ID NO:11368)
       5'-GCTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1987) (SEQ ID NO:11369)
        5'-CTGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1988) (SEQ ID NO:11370)
        5'-TGTCBCCTCGCTGGGCCC-3' (FRAG. NO:1989) (SEQ ID NO:11371)
5'-GTCBCCTCGCTGGGCCC-3' (FRAG. NO:1990) (SEQ ID NO:11372)
        5'-TCBCCTCGCTGGGCCC-3' (FRAG. NO:1991) (SEQ ID NO:11373)
       5'-CBCCTCGCTGGGCCC-3' (FRAG. NO:1992) (SEQ ID NO:11374)
5'-BCCTCGCTGGGCCC-3' (FRAG. NO:1993) (SEQ ID NO:11375)
        5'-CCTCGCTGGGCCC-3' (FRAG. NO:1994) (SEQ ID NO:11376)
        5'-CTCGCTGGGCCC-3' (FRAG. NO:1995) (SEQ ID NO:11377)
       5'-TCGCTGGGCCC-3' (FRAG. NO:1996) (SEQ ID NO:11378)
5'-CGCTGGGCCC-3' (FRAG. NO:1997) (SEQ ID NO:11379)
5'-CGCCGGGCCGTCBTGGCGGCCGTCGGGCCGGC-3' (FRAG. NO:1998) (SEQ ID NO:11380)
        5'-GCGCGGCCGTCBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:1999) (SEQ ID NO:11381)
        5'-GCGCGGCCGTCBTGGCGGCGTCGGGCCGG-3' (FRAG. NO:2000) (SEQ ID NO:11382)
       5'-GCGCGGCCGTCBTGCCGCCGTCGGGCCG-3' (FRAG. NO:2001) (SEQ ID NO:11383)
5'-GCGCGGCCGTCBTGGCGCGTCGGGCC-3' (FRAG. NO:2002) (SEQ ID NO:11384)
        5'-GCGCGGCCGTCBTGGCGGCGTCGGGC-3' (FRAG. NO:2003) (SEQ ID NO:11385)
        5'-GCGCGGCCGTCBTGGCGGCGTCGGG-3' (FRAG. NO:2004) (SEQ ID NO:11386)
        5'-GCGCGGCCGTCBTGGCGGCGTCGG-3' (FRAG. NO:2005) (SEQ ID NO:11387)
5'-GCGCGGCCGTCBTGGCGGCGTCG-3' (FRAG. NO:2006) (SEQ ID NO:11388)
30
       5'-GCGCGGCCGTCBTGGCGGCGTC-3' (FRAG. NO:2007) (SEQ ID NO:11389)
        5'-GCGCGGCCGTCBTGGCGGCGT-3' (FRAG. NO:2008) (SEQ ID NO:11390)
       5'-GCGCGGCCGTCBTGGCGGCG-3' (FRAG. NO:2009) (SEQ ID NO:11391)
5'-GCGCGGCCGTCBTGGCGGC-3' (FRAG. NO:2010) (SEQ ID NO:11392)
5'-GCGCGGCCGTCBTGGCGG-3' (FRAG. NO:2011) (SEQ ID NO:11393)
        5'-GCGCGGCCGTCBTGGCG-3' (FRAG. NO:2012) (SEQ ID NO:11394)
        5'-GCGCGGCCGTCBTGGC-3' (FRAG. NO:2013) (SEQ ID NO:11395)
        5'-GCGCGGCCGTCBTGG-3' (FRAG. NO:2014) (SEQ ID NO:11396)
        5'-GCGCGGCCGTCBTG-3' (FRAG. NO:2015) (SEQ ID NO:11397)
        5'-GCGCGGCCGTCBT-3' (FRAG. NO:2016) (SEQ ID NO:11398)
       5'-GCGCGGCCGTCB-3' (FRAG. NO:2017) (SEQ ID NO:11399)
5'-GCGCGGCCGTC-3' (FRAG. NO:2018) (SEQ ID NO:11400)
        5'-GCGCGGCCGT-3' (FRAG. NO:2019) (SEQ ID NO:11401)
        5'-CGCGGCCGTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2020) (SEQ ID NO:11402)
       5'-GGGCCGTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2021) (SEQ ID NO:11403)
5'-CGGCCGTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2022) (SEQ ID NO:11404)
5'-GGCCGTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2023) (SEQ ID NO:11405)
        5'-GCCGTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2024) (SEQ ID NO:11406)
       5'-CCGTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2025) (SEQ ID NO:11407)
5'-CGTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2026) (SEQ ID NO:11408)
5'-GTCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2027) (SEQ ID NO:11409)
        5'-TCBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2028) (SEQ ID NO:11410)
        5'-CBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2029) (SEQ ID NO:11411)
       5'-BTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2030) (SEQ ID NO:11412)
5'-TGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2031) (SEQ ID NO:11413)
        5'-GGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2032) (SEQ ID NO:11414)
        5'-GCGGCGTCGGGCCGGGC-3' (FRAG. NO:2033) (SEQ ID NO:11415)
        5'-CGGCGTCGGGCCGGGC-3' (FRAG. NO:2034) (SEQ ID NO:11416)
        5'-GGCGTCGGGCCGGGC-3' (FRAG. NO:2035) (SEQ ID NO:11417)
        5'-GCGTCGGGCCGGGC-3' (FRAG. NO:2036) (SEQ ID NO:11418)
       5'-CGTCGGGCCGGGC-3' (FRAG. NO:2037) (SEQ ID NO:11419)
5'-GTCGGGCCGGGC-3' (FRAG. NO:2038) (SEQ ID NO:11420)
5'-TCGGGCCGGGC-3' (FRAG. NO:2039) (SEQ ID NO:11421)
        5'-CGGGCCGGGC-3' (FRAG. NO:2040) (SEQ ID NO:11422)
        5'-CCGCBGGCCBGGCCGCCGCCGGCCGGCCGGCCG-3' (FRAG. NO:2041) (SEQ ID NO:11423)
       5'-CCGCBGGCCBGGCCGCCGCCGGCCGGCC-3' (FRAG. NO:2042) (SEQ ID NO:11424) 5'-CCGCBGGCCBGGCCGCCGCCGGCCGGCCGGCGC-3' (FRAG. NO:2043) (SEQ ID NO:11425)
        5'-CCGCBGGCCBGGCGCCGCCGGCCGGCGG-3' (FRAG. NO:2044) (SEQ ID NO:11426)
        5'-CCGCBGGCCBGGCGCCGCCGCCGGCCGG-3' (FRAG. NO:2045) (SEQ ID NO:11427)
       5-CCGCBGGCCBGGCGCGCCGCCGGC-3' (FRAG. NO:2048) (SEQ ID NO:11430)
       5'-CCGCBGGCCBGGGCGCCGCCGG-3' (FRAG. NO:2049) (SEQ ID NO:11431)
5'-CCGCBGGCCBGGCCGCCGCCG-3' (FRAG. NO:2050) (SEQ ID NO:11432)
5'-CCGCBGGCCBGGCCGCCGCCG-3' (FRAG. NO:2051) (SEQ ID NO:11433)
       5'-CCGCBGGCCBGGCGCGCCGC-3' (FRAG. NO:2052) (SEQ ID NO:11434)
```

```
5'-CCGCBGGCCBGGCGCGCCG-3' (FRAG. NO:2053) (SEQ ID NO:11435)
      5'-CCGCBGGCCBGGCGCCC-3' (FRAG. NO:2054) (SEQ ID NO:11436)
      5'-CCGCBGGCCBGGCGCGC-3' (FRAG. NO:2055) (SEQ ID NO:11437)
      5'-CCGCBGGCCBGGCGCG-3' (FRAG. NO:2056) (SEQ ID NO:11438)
      5'-CCGCBGGCCBGGCGC-3' (FRAG. NO:2057) (SEQ ID NO:11439)
5'-CCGCBGGCCBGGCG-3' (FRAG. NO:2058) (SEQ ID NO:11440)
      5'-CCGCBGGCCBGGGC-3' (FRAG. NO:2059) (SEQ ID NO:11441)
      5'-CCGCBGGCCBGG-3' (FRAG. NO:2060) (SEQ ID NO:11442)
5'-CCGCBGGCCBGG-3' (FRAG. NO:2061) (SEQ ID NO:11443)
      5'-CCGCBGGCCBG-3' (FRAG. NO:2062) (SEQ ID NO:11444)
      5'-CCGCBGGCCB-3' (FRAG. NO:2063) (SEQ ID NO:11445)
      5'-GCBGGCCBGGCGCCGCCGCCGGCCGGCCG-3' (FRAG. NO:2066) (SEQ ID NO:11448)
      5'-CBGGCCBGGCGCGCCGCCGGCCGGCCGGCCG3' (FRAG. NO:2067) (SEQ ID NO:11449)
      5'-CCBGGGCGCGCCGCCGGCCGGCCG-3' (FRAG. NO:2071) (SEQ ID NO:11453)
      5'-CBGGGCGCGCCGGCCGGCCG-3' (FRAG. NO:2072) (SEQ ID NO:11454)
5'-BGGGCGCGCCGCCGGCCGGCCGGCCG-3' (FRAG. NO:2073) (SEQ ID NO:11455)
      5'-GGGCGCCGCCGGCCGGCCGGCCG-3' (FRAG. NO:2074) (SEQ ID NO:11456)
      5'-GGCGCGCCGGCCGGCCG-3' (FRAG. NO:2075) (SEQ ID NO:11457)
      5'-GCGCGCCGCCGGCCGGCCG-3' (FRAG. NO:2076) (SEQ ID NO:11458)
      5'-CGCGCCGCCGGCCGGCCG-3' (FRAG. NO:2077) (SEQ ID NO:11459)
      5'-GCGCCGCCGGCCGGCCG-3' (FRAG. NO:2078) (SEQ ID NO:11460)
      5'-CGCCGCCGGCCGGCCG-3' (FRAG. NO:2079) (SEQ ID NO:11461)
      5'-GCCGCCGGCCGGCCG-3' (FRAG. NO:2080) (SEQ ID NO:11462)
5'-CCGCCGGCCGGCCG-3' (FRAG. NO:2081) (SEQ ID NO:11463)
30
      5'-CGCCGGCCGGCCG-3' (FRAG. NO:2082) (SEQ ID NO:11464)
      5'-GCCGGCCGGGCCG-3' (FRAG. NO:2083) (SEQ ID NO:11465)
      5'-CCGGCCGGGCCG-3' (FRAG. NO:2084) (SEQ ID NO:11466)
5'-CGGCCGGGCCG-3' (FRAG. NO:2085) (SEQ ID NO:11467)
5'-GGCCGGGCCG-3' (FRAG. NO:2086) (SEQ ID NO:11468)
      5'-GGGCGCBGGCTCCGCB-3' (FRAG. NO:2087) (SEQ ID NO:11469)
      5'-GGGCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3'(FRAG.NO:2088)(SEQ ID NO:11470)
      5'-GGGCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCCCG-3' (FRAG.NO:2089)(SEQ ID NO:11471)
5'-GGGCCCTGGCTCGGCCCGCGGCCCGGCCCGGCCC-3' (FRAG.NO:2090)(SEQ ID NO:11472)
      5'-GGGCCCTGGCTCGGCCCCGCGCCCGGCTTGCCCGCCCGGCC-3' (FRAG. NO:2091) (SEQ ID NO:11473)
      5'-GGGCCCTGGCTCGGCCCGCGGCCCGGCCCGG-3' (FRAG. NO:2093) (SEQ ID NO:11475)
5'-GGGCCCCTGGCTCGGCCCGCGGCCCGGCCCGG-3' (FRAG. NO:2094) (SEQ ID NO:11476)
      5'-GGCCCCTGGCTCGGCCCGCGCCCGGCTTGCCCGCCC-3' (FRAG. NO:2095) (SEQ ID NO:11477)
      5'-GGGCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCC-3' (FRAG. NO:2096) (SEQ ID NO:11478)
      5'-GGGCCCCTGGCTCGGCCCCGCGGCCCGGCTTGCCCG-3' (FRAG. NO:2097) (SEQ ID NO:11470)
5'-GGGCCCCTGGCTCGGCCCCGCGGCCCGGCTTGCCCG-3' (FRAG. NO:2098) (SEQ ID NO:11480)
5'-GGGCCCCTGGCTCGGCCCCGCGGCCCGGCCCGGCTTGCCC-3' (FRAG. NO:2099) (SEQ ID NO:11481)
      5'-GGGCCCCTGGCTCGGCCCCGCGCCCGGCTTGCC-3' (FRAG. NO:2100) (SEQ ID NO:11482)
      5'-GGGCCCCTGGCTCGGCCCCGCGGCCCGGCTTGC-3' (FRAG. NO:2101) (SEQ ID NO:11483)
5'-GGGCCCCTGGCTCGGCCCCGCGCCCGGCTTG-3' (FRAG. NO:2102) (SEQ ID NO:11484)
      5'-GGGCCCCTGGCTCGGCCCCGCGCCCGGCTT-3' (FRAG. NO:2103) (SEQ ID NO:11485)
      5'-GGGCCCCTGGCTCGGCCCCGCGCCCGGCT-3' (FRAG. NO:2104) (SEQ ID NO:11486)
      5'-GGGCCCCTGGCTCGGCCCGCGGCCCGGG-3' (FRAG. NO:2105) (SEQ ID NO:11487)
5'-GGGCCCCTGGCTCGGCCCCGCGGCCCGG-3' (FRAG. NO:2106) (SEQ ID NO:11488)
5'-GGGCCCCTGGCTCGGCCCCGCGGCCCG-3' (FRAG. NO:2107) (SEQ ID NO:11489)
      5'-GGGCCCCTGGCTCGGCCCCGCGGCCC-3' (FRAG. NO:2108) (SEQ ID NO:11490)
      5'-GGGCCCCTGGCTCGGCCCCGCGGCC-3' (FRAG. NO:2109) (SEQ ID NO:11491)
      5'-GGGCCCCTGGCTCGGCCCCGCGGC-3' (FRAG. NO:2110) (SEQ ID NO:11492)
      5'-GGGCCCCTGGCTCGGCCCCGCGG-3' (FRAG. NO:2111) (SEQ ID NO:11493)
      5'-GGGCCCCTGGCTCGGCCCCGCG-3' (FRAG. NO:2112) (SEQ ID NO:11494)
      5'-GGGCCCCTGGCTCGGCCCCGC-3' (FRAG. NO:2113) (SEQ ID NO:11495)
5'-GGGCCCCTGGCTCGGCCCCG-3' (FRAG. NO:2114) (SEQ ID NO:11496)
      5'-GGGCCCCTGGCTCGGCCCC-3' (FRAG. NO:2115) (SEQ ID NO:11497)
      5'-GGGCCCCTGGCTCGGCCC-3' (FRAG. NO:2116) (SEQ ID NO:11498)
      5'-GGGCCCCTGGCTCGGCC-3' (FRAG. NO:2117) (SEQ ID NO:11499)
5'-GGGCCCCTGGCTCGGC-3' (FRAG. NO:2118) (SEQ ID NO:11500)
      5'-GGGCCCCTGGCTCGG-3' (FRAG. NO:2119) (SEQ ID NO:11501)
      5'-GGGCCCCTGGCTCG-3' (FRAG. NO:2120) (SEQ ID NO:11502)
      5'-GCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2124) (SEQ ID NO:11506)
      5'-CCTGGCTCGGCCCGGGCCCGGCCCGGCCCGGCCCGG-3' (FRAG. NO:2127) (SEQ ID NO:11509)
```

```
5'-CTGGCTCGGCCCGGGCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2128) (SEQ ID NO:11510)
      5'-GGCTCGGCCCGCGGCCCGGCCCGGCCCGGCCCGG-3' (FRAG. NO:2130) (SEQ ID NO:11512)
      5'-GCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2131) (SEQ ID NO:11513)
      5'-CTCGGCCCGCGGCCCGGCCCGGCCCGG-3' (FRAG. NO:2132) (SEQ ID NO:11514)
5'-TCGGCCCCGCGGCCCGGCCCGGCCCGG-3' (FRAG. NO:2133) (SEQ ID NO:11515)
      5'-CGGCCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2134) (SEQ ID NO:11516)
      5'-GGCCCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2135) (SEQ ID NO:11517)
      5'-GCCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2136) (SEQ ID NO:11518)
10
      5'-CCCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2137) (SEQ ID NO:11519)
      5'-CCCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2138) (SEQ ID NO:11520)
      5'-CCGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2139) (SEQ ID NO:11521) 5'-CGCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2140) (SEQ ID NO:11522)
      5'-GCGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2141) (SEQ ID NO:11523)
      5'-CGGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2142) (SEQ ID NO:11524)
      5'-GGCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2143) (SEQ ID NO:11525)
5'-GCCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2144) (SEQ ID NO:11526)
      5'-CCCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2145) (SEQ ID NO:11527)
      5'-CCGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2146) (SEQ ID NO:11528)
      5'-CGGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2147) (SEQ ID NO:11529)
      5'-GGCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2148) (SEQ ID NO:11530)
      5'-GCTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2149) (SEQ ID NO:11531)
      5'-CTTGCCCGCCCGGCCCGG-3' (FRAG. NO:2150) (SEQ ID NO:11532)
      5'-TTGCCCGCCCGGCCCGG-3' (FRAG. NO:2151) (SEQ ID NO:11533)
      5'-TGCCCGCCCGGCCCGG-3' (FRAG. NO:2152) (SEQ ID NO:11534)
      5'-GCCCGCCCGGCCCGG-3' (FRAG. NO:2153) (SEQ ID NO:11535)
      5'-CCCGCCCGGCCCGG-3' (FRAG. NO:2154) (SEQ ID NO:11536)
      5'-CCGCCCGGCCCGG-3' (FRAG. NO:2155) (SEQ ID NO:11537)
      5'-CGCCCGGCCCGG-3' (FRAG. NO:2156) (SEQ ID NO:11538)
      5'-GCCCGGCCCGG-3' (FRAG. NO:2157) (SEQ ID NO:11539)
      5'-GGCGGGGGCGCGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2158) (SEQ ID NO:11540)
      5'-GGCGGGGGCGCCCTGGCTCGCCTBGGGCCC-3' (FRAG. NO:2159) (SEQ ID NO:11541)
5'-GGCGGGGGCGCCGCCTGGCTCGCCTBGGGCC-3' (FRAG. NO:2160) (SEQ ID NO:11542)
      5'-GGCGGGGGCGCGCCTGGCTCGCCTBGGGC-3' (FRAG. NO:2161) (SEQ ID NO:11543)
      5'-GGCGGGGGGGGGCGCCTGGCTCGCCTBGGG-3' (FRAG. NO:2162) (SEQ ID NO:11544)
      5'-GGCGGGGGCGGCGGCCTGGCCTBGG-3' (FRAG. NO:2163) (SEQ ID NO:11545)
5'-GGCGGGGGCGGCGCCTGGCTCGCCTBG-3' (FRAG. NO:2164) (SEQ ID NO:11546)
      5'-GGCGGGGGGGGGCGCCTGGCTCGCCTB-3' (FRAG. NO:2165) (SEQ ID NO:11547)
      5'-GGCGGGGGGGGGGCGCCTGGCTCGCCT-3' (FRAG. NO:2166) (SEQ ID NO:11548)
      5'-GGCGGGGGCGCCCTGGCTCGCC-3' (FRAG. NO:2167) (SEQ ID NO:11549)
      5'-GGCGGGGGCGCCCTGGCTCGC-3' (FRAG. NO:2168) (SEQ ID NO:11550)
5'-GGCGGGGGCGCCCTGGCTCG-3' (FRAG. NO:2169) (SEQ ID NO:11551)
      5'-GGCGGGGGCGCCGCCTGGCTC-3' (FRAG. NO:2170) (SEQ ID NO:11552)
      5'-GGCGGGGGCGCGCCTGGCT-3' (FRAG. NO:2171) (SEQ ID NO:11553)
5'-GGCGGGGGCGCGCCCTGGC-3' (FRAG. NO:2172) (SEQ ID NO:11554)
      5'-GGCGGGGGCGCGCCTGG-3' (FRAG. NO:2173) (SEQ ID NO:11555)
      5'-GGCGGGGGCGCGCCCTG-3' (FRAG. NO:2174) (SEQ ID NO:11556)
      5'-GGCGGGGGCGCCGCCT-3' (FRAG. NO:2175) (SEQ ID NO:11557)
      5'-GGCGGGGGCGCCGCC-3' (FRAG. NO:2176) (SEQ ID NO:11558)
5'-GGCGGGGGCGCGCGC-3' (FRAG. NO:2177) (SEQ ID NO:11559)
      5'-GGCGGGGGGGGGGGG-3' (FRAG. NO:2178) (SEQ ID NO:11560)
      5'-GGCGGGGGCGCGC-3' (FRAG. NO:2179) (SEQ ID NO:11561)
5'-GGCGGGGCGGCGG-3' (FRAG. NO:2180) (SEQ ID NO:11562)
5'-GGCGGGGGCGCG-3' (FRAG. NO:2181) (SEQ ID NO:11563)
      5'-GGCGGGGGCGC-3' (FRAG. NO:2182) (SEQ ID NO:11564)
      5'-GGCGGGGGCGG-3' (FRAG. NO:2183) (SEQ ID NO:11565)
      5'-GCGGGGGCGCCCCGCCTBGGGCCCC-3' (FRAG. NO:2184) (SEQ ID NO:11566)
      5'-CGGGGGCGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2185) (SEQ ID NO:11567)
      5'-GGGGGCGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2186) (SEQ ID NO:11568)
      5'-GGGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG, NO:2187) (SEQ ID NO:11569)
      5'-GGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2188) (SEQ ID NO:11570)
5'-GGCGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2189) (SEQ ID NO:11571)
      5'-GCGGCGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2190) (SEQ ID NO:11572)
      5'-CGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2191) (SEQ ID NO:11573)
      5'-GGCGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2192) (SEQ ID NO:11574)
5'-GCGCGCCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2193) (SEQ ID NO:11575)
5'-CGGCGCCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2194) (SEQ ID NO:11576)
      5'-GGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2195) (SEQ ID NO:11577)
      5'-GCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2196) (SEQ ID NO:11578) 5'-CGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2197) (SEQ ID NO:11579)
      5'-GCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2198) (SEQ ID NO:11580)
      5'-CCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2199) (SEQ ID NO:11581)
      5'-CTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2200) (SEQ ID NO:11582)
      5'-TGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2201) (SEQ ID NO:11583)
      5'-GGCTCGCCTBGGGCCCC-3' (FRAG. NO:2202) (SEQ ID NO:11584)
```

5'-GCTCGCCTBGGGCCCC-3' (FRAG. NO:2203) (SEQ ID NO:11585) 5'-CTCGCCTBGGGCCCC-3' (FRAG. NO:2204) (SEQ ID NO:11586) 5'-TCGCCTBGGGCCCC-3' (FRAG. NO:2205) (SEQ ID NO:11587) 5'-CGCCTBGGGCCCC-3' (FRAG. NO:2206) (SEQ ID NO:11588) 5'-GCCTBGGGCCCC-3' (FRAG. NO:2207) (SEQ ID NO:11589) 5'-CCTBGGGCCCC-3' (FRAG. NO:2208) (SEQ ID NO:11590) 5'-CTBGGGCCCC-3' (FRAG. NO:2209) (SEQ ID NO:11591) 5'-GGGTGGGCBCGGCGCC-3' (FRAG. NO:2210) (SEQ ID NO:11592) 5'-GGTCGGCGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2211) (SEQ ID NO:11593) 5'-GGTCGGCGBBGBGCTCGTCGTGG-3' (FRAG. NO:2212) (SEQ ID NO:11594) 5'-GGTCGGCGBBGBGCTCGTCGTG-3' (FRAG. NO:2213) (SEQ ID NO:11595) 5'-GGTCGGCGBBGBGCTCGTCGT-3' (FRAG. NO:2214) (SEQ ID NO:11596) 5'-GGTCGGCGBBGBGCTCGTCG-3' (FRAG. NO:2215) (SEQ ID NO:11597) 5'-GGTCGGCGBBGBGCTCGTC-3' (FRAG. NO:2216) (SEQ ID NO:11598) 15 5'-GGTCGGCGBBGBGCTCGT-3' (FRAG. NO:2217) (SEQ ID NO:11599) 5'-GGTCGGCGBBGBGCTCG-3' (FRAG. NO:2218) (SEQ ID NO:11600) 5'-GGTCGGCGBBGBGCTC-3' (FRAG. NO:2219) (SEQ ID NO:11601) 5'-GGTCGGCGBBGBGCT-3' (FRAG. NO:2220) (SEQ ID NO:11602) 5'-GGTCGGCGBBGBGC-3' (FRAG. NO:2221) (SEQ ID NO:11603) 20 5'-GGTCGGCGBBGBG-3' (FRAG. NO:2222) (SEQ ID NO:11604) 5'-GGTCGGCGBBG-3' (FRAG. NO:2223) (SEQ ID NO:11605) 5'-GGTCGGCGBBG-3' (FRAG. NO:2224) (SEQ ID NO:11606) 5'-GTCGGCGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2225) (SEQ ID NO:11607) 5'-TCGGCGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2226) (SEQ ID NO:11608) 5'-CGGCGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2227) (SEQ ID NO:11609) 5'-GGCGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2228) (SEQ ID NO:11610) 5'-GCGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2229) (SEQ ID NO:11611) 5'-CGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2230) (SEQ ID NO:11612) 5'-GBBGBGCTCGTCGTGGC-3' (FRAG. NO:2231) (SEQ ID NO:11613) 5'-BBGBGCTCGTCGTGGC-3' (FRAG. NO:2232) (SEQ ID NO:11614) 30 5'-BGBGCTCGTCGTGGC-3' (FRAG. NO:2233) (SEQ ID NO:11615) 5'-GBGCTCGTCGTGGC-3' (FRAG. NO.2234) (SEQ ID NO:11616)
5'-BGCTCGTCGTGGC-3' (FRAG. NO:2235) (SEQ ID NO:11617)
5'-GCTCGTCGTGGC-3' (FRAG. NO:2236) (SEQ ID NO:11618)
5'-CTCGTCGTGGC-3' (FRAG. NO:2237) (SEQ ID NO:11619) 35 5'-TCGTCGTGGC-3' (FRAG. NO:2238) (SEQ ID NO:11620)
5'-GGGGCCCCGCCGCCCGCC-3' (FRAG. NO:2239) (SEQ ID NO:11621)
5'-GGGGCCCCGCCGCCCGCC3' (FRAG. NO:2240) (SEQ ID NO:11622) 5'-GGGGCCCCGCGCCCCG-3' (FRAG. NO:2241) (SEQ ID NO:11623) 5'-GGGGCCCGCGCCCC-3' (FRAG. NO:2242) (SEO ID NO:11624) 5'-GGGGCCCGCGCCGC-3' (FRAG. NO:2243) (SEQ ID NO:11625) 5'-GGGGCCCCGCCGC-3' (FRAG. NO:2244) (SEQ ID NO:11626) 5'-GGGGCCCCGCGCCG-3' (FRAG. NO:2245) (SEQ ID NO:11627) 5'-GGGGCCCCGCGCC-3' (FRAG. NO:2246) (SEQ ID NO:11628) 5'-CCCGCGCCGCCGCC-3' (FRAG. NO:2251) (SEQ ID NO:11633) 5'-CCGCGCCGCCGCC-3' (FRAG. NO:2252) (SEQ ID NO:11634) 5'-CCGCGCCCCCCC-3' (FRAG. NO:2253) (SEQ ID NO:11635) 50 5'-CGCGCCGCCGCC-3' (FRAG. NO:2254) (SEQ ID NO:11636) 5'-GCGCCGCC-3' (FRAG. NO:2255) (SEQ ID NO:11637) 5'-GCCGCCGCC-3' (FRAG. NO:2256) (SEQ ID NO:11638) 5'-GCCGCCCGCC-3' (FRAG. NO:2257) (SEQ ID NO:11639) 55 5'-GGGGCGCGCGGGCCCCGGG-3' (FRAG. NO:2258) (SEQ ID NO:11640) 5'-GGCGGGGGGCCCGGGCCC-3' (FRAG. NO:2259) (SEQ ID NO:11641)
5'-GCGCGCGTCGCCCCBGTCGGCCCG-3' (FRAG. NO:2260) (SEQ ID NO:11642)
5'-GCGCGGGCBBCBGCGGGCGCG-3' (FRAG. NO:2261) (SEQ ID NO:11643) 5'-GCGCBCGGCCCBCCTGCGCGGGC-3' (FRAG. NO:2262) (SEQ ID NO:11644)
5'-GGCGGGGTGGCCTGCCCTGCGGCCGC-3' (FRAG. NO:2263) (SEQ ID NO:11645) 5-GGGCTGCCGCGGCGCCC-3' (FRAG. NO:2264) (SEQ ID NO:11646)
5-CTCCCGGGCGGGCCGGGGGG-3' (FRAG. NO:2265) (SEQ ID NO:11647)
5-GGGCTGCCGCGGGCCCTCTTGCCGGCG-3' (FRAG. NO:2266) (SEQ ID NO:11648) 5'-GCGCTCGCGCCGCTGCCGG-3' (FRAG. NO:2267) (SEQ ID NO:11649)
5'-GCGCCGCTTGCCCGGG-3' (FRAG. NO:2268) (SEQ ID NO:11650)
5'-GCTGCTCCBCGCGCTGG-3' (FRAG. NO:2269) (SEQ ID NO:11651) Bradykinin Receptor Nucleic Acids and Antisense Oligonucleotide Fragments
5-G6TGBCBTTG BGCBTGTCGG CGCGGTCCCG TTBBGBGTGG GCCCGCCAGC CCAGCCACTC CACTTGGGGG CGGGTGGCCA
GCACGAACAG CACCCAGAGG AAGGGGGGCG GCCCAGAAGG GCAGCCCGCA GGCCAGGATC AGGTCTGCTG CGGCCGGAGA

```
TAATGGCATT CACCACGCGG CGGCCCAGCG CACGCCGCGC ATCCGGCCCG GGTTCTGACC TGCAGCCCCC GTCTCCTTGG CATTCCTGGG CCCCAGTCAC TCCTCTCCCT GCCCCCCTTG CTGGGGCAGG GACGGGGTG BCBTTGBGCB TGTCGGCGCG
 GTCCCGTTBB GBGTGGGCCC GCCAGCCCAG CCACTCCACT TGGGGGCGGG TGGCCAGCAC GAACAGCACC CAGAGGAAGG
 GGGGCGGCCC AGAAGGGCAG CCCGCAGGCC AGGATCAGGT CTGCTGCGGC CGGAGATAAT GGCATTCACC ACGCGGCGGC
CCAGGGCACG CCGCGCATCC GGCCCGGGTT CTGACCTGCA GCCCCGTCT CCTTGGCATT CCTGGGCCCC AGTCACTCCT CTCCCTGCCC CCCTTGCTGG GGCAGGGACG GCCGTGTTGT CBGTGGTGCT GCCCGTTTGB GGTBTGGCGC TCCBCCBBTT
 CCCTTTTCTC CTTGTTTTCC GTTTCTCTTG CCGTCTGTGG TT CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT
 GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC
 AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA
 ATTITIGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT
 TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA GGAGTGACTG
 AGCITCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACITAGA TCTCCAGGAG AACTGCCATC CAGCITTGGT
GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTA TGGCTCCCCT CACTGATGGA
CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAAAGA AAGAAAGA AACGACTCCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC
 ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA
GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG
GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC
GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT
 TICTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCAC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG
GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT
 AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA
CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG
 GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG
CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTAG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC
 CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG
 CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA CCTGGAGGGC TAGAACCTGG AGAATGAGAA AAATTTACAT
 GGCAAAGAGC CCATAAATCC TGACCAATCC AACTCTGAAT TTTAAAGCAA AAGCGTGAAA AAAAAGATTC CCTCCTTACC
 CCCAACCCAC TCTTTTTTCC CACCACCCAC TCTCCTCTGC CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAAGAAGA
AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAA AAAAAGAGGC
 TOTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG
CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA CGGATGGTC GGGAGAAGAG CGGCCTATG CATGGTGTAG
ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGAGATTT CACATCCAAA
CGAGAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA
TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC
ACTOTTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA
GACTCCGTCT CAAAAAAAA AAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT
GACTCCGTCT CAAAAAAAAA AAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT
TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT
TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCCT GATCCCAGCT GTCTTAGGG GTTCCTGCAA
ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCCTG TTTACCAACT CAGCTTTTTG TTTTAGTGTG TTTGAATTCC
CTGAACTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT
GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACA ACCCACATAC CCACACATGC
ACACACACAC ACACACCCGC ACTCACACAC TTGGACTGC ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA
CTAGGTAACCA CCAACCCATC TGCGCCTTGT TACCTCCTC TGTGACGCAA CCACACACAC CATGCCTCCC CCCCTGGATG
 CAAGTCACCA CCAACCCATC TGCGCCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC CCCCTGGATG
GGAGTGATGT GAAACTTGAA GGGCGGTCAG AGCAAGGGTC GGGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA
GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC
GGGGCACAGA GGAGGCCCIG GGCIGAGAC TIGACAGCAC CITITATIG GIAAGCCAAG CCCGAAGGGA CIGGAATIAC
TCAGATGTGT CTGTCTCCCT TATTAGGTTC AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT
CCTCTGAGCT CCAGACCCTG CTGGACCCAA CCAGCCCTAT GGGGTCGCAT CCCCACTGC CTGGAATTCT CCAAAGAACC
TCCCCITTAA CAGTTCCAGC CTTTAACAGT TCCAGTCTAA ACACTGACC TTTCTCCTCT AAATCAGCCC CCCATCTCTG
CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG
TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CCAGTCTCT AGTCTCCATC ATCCCAGGTC GAAGCTAATG GGCTAACTGG
TCCTTGCTTC CACTCTACCC CCACTGCAGT CCTGACTTCC TGAGGCACTG CCAGGGCCTA ATCGATATTC ACACCAAGCG
CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTC TATGCTCTCA CAGGACCTTT TGCTTGATTT TTCACTGTAC
TTAGGTCAGT TTGCAGTTAT TAAGTGACTG AGCAATGTCT GGCTTCTCA GTAGAACTGTC AGCTCCTAGC CATTGTATAC CTAGCACCGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGCTCAGCAGTC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC
ACTCACATCC CACTCTGAGT CCAAATGTTC TCTCCCTGGA AGATATCAAT GTTTCTGTCT GTTCGTGAGG ACTCCGTGCC CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT
CCCTGGAAAG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC
AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA
AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA
GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG
TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG
GAGATCTGTT CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC
TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTITICCAA TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC
```

```
TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCCAAG
 CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG
 TCTTACCTTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT
CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTTCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC
 TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC
 TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG
AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCAG TCTGGCTCCA
GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAAGTGA TGATCAGTAA TCTCTCCCGT
GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC
ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC
ACTOTICAAC TIGAATGITG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA
AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA
AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT
 AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC
TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC
CCTCGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AAACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT
 TTTCTCTTT AATAAATTAA CTCACCCACC ACACGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG
GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG
ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT
CGGCTTCTCC TTGTCCTGGC TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG
TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT
CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGGC CATCACCACT TCGACTGGCT CTTTGGGGA AACCTGGCCG CAGCAGCACTTCGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGC TGCGCTGGGC CAAGCTCTACA AGCTTGGTGA TCTGGGGGT TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT
ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA
CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA
TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG
CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT
CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA
TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA
GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG ACAGTTGCTT TTCAGCATGG
GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAAACACCG GAGACTAATT
CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAAATCACA
ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC
ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA
AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT
GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACGACT
GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA
GCCAGGTTCC AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC GCCCTTCAAA GATGAGCTGT TCCCGCCGCC
ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGGC TGCTCCAGCC GCCTCACCTC
TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG
GAGTT GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC AGATTAAGGA
GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC
TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT
GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGCTGGG
GGGACGTCCT CTGGCCCTCC TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTTT
TAAGGCTTCA AAAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT
GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC
TCCGAAGAAA CGGCCGCGTG TCTCAGGGGA GCGCAAACAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTCGCCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA CACCTTCCGC
GTAAACGCCC ACTGTTTACA TCCAAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG
TTACGCGAGG CAAATTTATT CACATGGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCAC
GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC
AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA
GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCGCCA
CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCCC CGCAGTACCA
```

GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA GTTTCCCTGT GGTCGTGGGG AGTTGGGAAA AGTTCCCTTC CTTCCGGAGG GAGG CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA ATTITIGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAAGA AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCAC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAAA AAAAAGAGGC
TGTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG
CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAAA AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA
TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC
ACTCTCTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG ACTOCIONAL AAAATACAA AAATACAA AAATACAA GACTIGIGG CAGGCACCTI TGATCCCAGC TACTCAGGAG GCTGAGACAC
GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA
GACTCCGTCT CAAAAAAAAA AAAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT
TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT
TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGCT TCCAAACCCT GATCCCAGCT GTGCTTAGGG GTTCCTGCAA
ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCCTG TTTACCAACT CAGCTTTTTG TTTTAGTGTG TTTGAATTCC CTGAACTGAC COTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACA ACCCACATAC CCACACATGC ACACACACAC ACACACCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA CTTGGTATCC TGGAGAGAGT GTGAAGTCCT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA CAAGTCACCA CCAACCCATC TGCGCCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC CCCCTGGATG GGAGTGATGT GAAACTTGAA GGGCGGTCAG AGCAAGGGTC GGGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC TCAGATGTGT CTGTCTCCCT TATTAGGTTC AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT CCTCTGAGCT CCAGACCCTG CTGGACCCAA CCAGCCCTAT GGGGTCGCAT CCCACCTGC CTGGAATTCT CCAAAGAACC TCCCCTTTAA CAGTTCCAGC CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCCTCT AAATCAGCC CCCATCTCTG CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CCAGTCTCC AGTCTCCATC ATCCCAGGTC GAAGCTAATG GGCTAACTGG
TCCTTGCTTC CACTCTACCC CCACTGCAGT CCTGACTTCC TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT

AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTC TATGCTCTCA CAGGACCTTT TGCTTGATTT TTCACTGTAC

TTAGGTCAGT TTGCAGTTAT TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC TRAGGICAGI TRIGGAGITAT TAAGIGACIG AGCAATGICT GGCTITCICCA GRAGACTGIC AGCICCIAGC CATTGIATAC
CTAGCACCGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGCAGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG
AGAATGCTG TATTTGGCAA TCCCCAGCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC
ACTCACATCC CACTCTGAGT CCAAATGTTC TCTCCCTGGA AGATATCAAT GTTTCTGTCT GTTCGTGAGG ACTCCGTGCC
CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT
CCCTGGAAAG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCCTCTC AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC
TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG
TCTTACCTTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG

```
CCAGAGGATC CACTITICAAG GTGGCAAGTT GGTTCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC
 TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC
TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCTCCTT TTGAAATGAA GAATATCAAG
TAATTCGGG GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTTAG AGCATACTTC TTATACCATC ACTGTAGTTC
CTTAAGACTC AGGGGCAAAG CCTCACTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC CTCACTCAAC CTCTTGCTAC
TTCCCACCTC TCCTGTCCAA CATCTAGTGT CACTTTCCAG AACATACCAA CAGCTTCCCC AGTTCTGTGC CTCTGCTCAG
GCTGTTCCCC CTGCCTGGTC CACTTGTCCT CCTTCTTGTC CGGTCAAAAT GCTTCTTATC CTTCAAGACC CAGCTCTAGA
 AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA
 GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAAGGTGA TGATCAGTAA TCTCTCCCGT
GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC
 ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC
 ACTOTICAAC TIGAATGITG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA
 AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA
 AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT
AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGGCATTT TGCACATTGT CTCTGATCCC
TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT
CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC
CCTGGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC
 AGGAAGACAG AAACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT
TTICTCTTTT AATAAATTAA CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG
GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG
CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG
 ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT
CGGCTICTCC TTGTCCTGGC TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA
 CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCTTCCT CTGGGTGCTG
TTOGTGCTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGT TGGCAGAGAT CTACCTGGGG AACCTGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGGC CATCACCATC TCCAACAACT TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGGG TGCGCTGGGC
CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA
CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGGT CTATTCATCA
TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC TCGCGCATCC TCTCCAGCTG CCAGGACGAG
CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT
CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA
 TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA
 GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGG ACAGTTGCTT TTCAGCATGG
 GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAAACACCG GAGACTAATT
 CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAAATCACA
ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG
AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC
ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA
AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC
CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT
GAGCACTGTA GGCAAGAGGG AAGAAGAGA AGGAGCCATC TCCATCTTGA AGGACTCAAA AGACTCAAGT GGGAACGACT
GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA
GCCAGGTTCC AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC CTGCAGAAAA CAGCCTGAGC TCCACCTCGG CTTCTCCTTG CCCTGGCTGG TTGTCCTTAA CCCCTGTCTC CTTCTGGACC AGTTTTTGTC CTTCCCTTGT GACCCTGAGG GGTAACAGCC TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT
GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGATG CGCGGCGTGC GCTGGGCCAA
GCTCTACAGC TTGGTGATCT GGGGGTGTAC GCTGCTCCTG AGCTCACCCA TGCTGGTGTT CCGGACCATG AAGGAGTACA
GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG
AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA
GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT
GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT
GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC
AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG
AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC
CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT
GNCCTGCCCA ATTITIGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA
GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGCAGGGAGA
GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT
CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAATCCA ATAAGCACAT ATTGAGCACT TGCTGTATAT GCAGTATTGA
```

GCACTGTAGG CAAGAGGGAA GAAAGAGAAG GAGCCATCTC CATCTTGAAG GAACTCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGA TGATCCTATC ACAACCTGAG AGTAGTTTTT ACTCCATITA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTTAAT AAATTAACTC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTTGGGAG GGCCCCGGTT GATAAGGAAG GAATGTGAAT CCTCCCATCA CGGAAGCTTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG
CCTCAGATGA AGAACATGAG GCCCCGTTTA GATCCAAGGA TCAAGAGGG CTCTGTAAGA CCCAGGGGAG TCAGGTGCAC
TGGAGCGCGG GCTGCAGAAA ACAGCCTGAG CTCCACCTCG GCTTCTCCTT GCCCTGGCTG GTTGTCCTTA ACCCCTGTC
CCTTCTGGAC CAGTTTTTGT CCTTCCCTTG TGACCTGAGG GGTAACAGC TCTTTTCCAC TTTCTTTCAG CGCCGACATG
CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGCTG
GCTCAACACC ATCCAGCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT
TCTGGCCTGCA CAAGAGCAGC TGCCAGCAGCAT CCTGTCTCGCC
GGCTGCCCCT TCTGGGCCAT CACCACTCTC AACAACTTCC ACTGGCTCTT TGGGGAACC CTCTGCCGCC TGGTGAAAAA

ATGCAACCTGT ACAGCCAGCAT CTGTTTCCTG ACTGGCTGTA GCATCGACCG CTACCTGGCCC
TCTGGTGAAAAA CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGTAC GCTGCTCCTG
AGCTCACCCA TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATO CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC GGGGTGAACT CACGCACAGC CAAGGACTCC AAAATCACAA CAGCATTACT GTTCTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCCTTC CCAGGAGTGG AGGAGGCCTG GGGGAGGGAG AGGAGTGACT GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCCCCAGCAA GACAACTTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG TGCAATGGCT GAGTGCACAA GTGAGTTGTT GCCCTGGGTT TCTTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA GAAGAATCAA CETIGATIAAC AACCIGGAGA CCAGGATITI AIGGCICCCC ICACIGATGG ACAAGGAGGT CIGIGCCAAA GAAGAAICAA
TAAGCACCATA TGAGCACTTC TGTATATCAG TATTGAGCAC TGTAGGCA ATGTTCTCC CCTGGAAGAT ATCAATGTIT
CTGTCTGTTT GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC
TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTCC
TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG
GTGGCAGGAA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT
CTCCAACAAC TTCGACTGGC TCTTTTGGGGA GACGCTCTGC CGCGTGGTA ATGCCATTAT CTCCATGAAC CTGTACAGCA
GCATCTGTTT CCTGATGCTG GTGAGCACCG ACCGCTGGCG GAAAACCATGT CCATGGGCCG GATGGCGGC
GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACCGTGT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT
GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT
GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T ATGITICTIC CCTGGAAGAT ATCAATGITT CTGTCTGTC GTGAGGACTC CGTGCCCACC ACGGCCTCIT TCAGCGCCGA
CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG
GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC
GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG
AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA
TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGCAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGGAGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCCTCACCT CTGCTGGGAG GACAAACTGT CCCAGCACAG AGGGAGGGAG GGAGGGCAGG CAGCGGGGAG AAGTTTCCCT GTGGTCGTGG GGAGTT GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGGC TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTIT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC

```
AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA
CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC
CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG
ATGGGCTGGG GGGACGTCCT CTGGCCCTCC TGTCTCTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTTT TAAGGCTTCA AAAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC
GCCATACATC TCCGAAGAAA CGGCCGCGTG TCTCAGGGGA GCGCAAACAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTCGCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA
CACCTTCCGC GTAAACGCCC ACTGTTTACA TCCAAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA
GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCCAC GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC
AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT
GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT
CCCGCCGCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCCC
CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG
CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA GTTTCCCTGT
AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT
GCCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA
GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGAGAGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC
CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT
CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG
CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC
CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA TGAAGTCGTT
GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA
GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG
AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACCACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCCACCAC
CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG
AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCACC AGCCGGTACC TGGGAAGGGG
GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA
TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG
AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG
CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA
ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT
GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA
GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC
TGAAAGAAGA AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAA
AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG
AGATACAGO COTTOTAL TOCAGACAT TOGAGACAT CACACAGAGCA COTGATUGIC TRAGACTCIC TRAGACTAT CACACAGAGCA COTGATUGIC TRAGACTAT CACACTCAGA AGACTCAAA CAATGACAT AAAGAACATC TOTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGACATTT CACATCCAAA CGAGAAAAAAAA AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCGTAA TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG
GCAAAACCTC ACTCTCTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG
GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT
GACAGAGAGA GACTCCGTCT CAAAAAAAA AAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT
GAATTITCTT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCCT GATCCCAGCT GTGCTTAGGG
GTTCCTGCAA ACCTTTTCCA GGTGTTAATT ACCTCCACT TCATTTCCTG TTTACCAACT CAGCTTTTTG TTTTAGTGTG
TTTGAATTCC CTGAACTGAC CGTTGTCTGA TCTCCACCT CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT
GCCGGGTGTT GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACA ACCCACATAC
CCACACATGC ACACACACA ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCCACA CCCTTCCTAG
ACAGGGGTCA CTTGGTATCC TGGAGAGAGT GTGAAGTCCT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT
GGGACTGAGA CAAGTCACCA CCAACCCATC TGCGCCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC
CCCCTGGATG GGAGTGATGT GAAACTTGAA GGCCGGTCAG AGCAAGGGTC GGGAATGGAA GGCCCTTGGG AAAAAAGGCC
CTTTCAACTA GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA
CTGGAAATAC TCAGATGTGT CTGTCTCCCT TATTAGGTTC AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT
CCAGACCCT CCTCTGAGCT CCAGACCCTG CTGGACCCAA CCAGCCCTAT GGGGTCGCAT CCCCACTGC CTGGAATTCT CCAAAGAACC TCCCCTTTAA CAGTTCCAGC CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCCTCT AAATCAGCCC CCCATCTCTG CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCC TGTCCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CCAGTCTCTC AGTCTCCATC ATCCCAGGTC GAAGCTAATG GGCTAACTG TCCTTGCTTC CACTCTACCC CCACTGCAGT CCTGACTTCC TGAGCAGCAG CCAGGGCCTA ATCGATATTC
ACACCAAGCG CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCCATGTTC TATGCTCTCA CAGGACCTTT TGCTTGATTT
TICACTOTAC TTAGGTCAGT TTGCAGTTAT TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCCTAGC
CATTGTATAC CTAGCACCGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCAG
```

GTGTGGCCTC ACTCACATCC CACTCTGAGT CCAAATGTTC TCTCCCTGGA AGATATCAAT GTTTCTGTCT GTTCGTGAGG ACTCCGTGCC CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT CCCTGGAAAG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAG AGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGGC AGGGATGGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTTCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTAG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CCTCACCTCC TTAGGACCCA GTGAAGACCA CACCTTCCC CTCACTCAAC CTCTTGCTAC TTCCCACCTC TCCTGTCCAA CATCTAGTGT CACTTTCCAG AACATACCAA CAGCTTCCCC AGTTCTGTGC CTCTGCTCAG GCTGTTCCCC CTGCCTGGTC CACTTGTCCT CCTTCTTGTC CGGTCAAAAT GCTTCTTATC CTTCAAGACC CAGCTCTAGA GTCACCTCCA ACCCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCCA CAACCCCCCT GCTCCCTCCA CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAAA CGGACTTTTC CTGGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCGT GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCTATGGT CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC CCTCGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AAACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT TITTCTCTTTT AATAAATTAA CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG
GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG
ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT CGGCTTCTCC TTGTCCTGGC TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTC CACTTTCTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG TTCGTGGTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAGT CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGGC CATCACCATC TCCAACAACT TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGGCG
TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC
TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGAGTGT GCCAGAAAGG GGGCTGCAGG
TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG ACAGTTGCTT TTCAGCATGG GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAAACACCG GAGACTAATT CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAAATCACA ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTICC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA GCCAGGTTCC AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC TGATCCTATC ACAACCTGAG
AGTAGTTTTT ACTCCATTTA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTTAAT AAATTAACTC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTTGGGAG GGCCCCGGTT GATAAGGAAG GAATGTGAAT CCTCCCATCA CGGAAGCTTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGAACATGAG GCCCCGTTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA CCCAGGGGAG TCAGGTGCAC, TGGAGCGCGG GCTGCAGAAA ACAGCCTGAG CTCCACCTCG GCTTCTCCTT GCCCTGGCTG GTTGTCCTTA ACCCCTGTCT CCTTCTGGAC CAGTTTTTGT CCTTCCCTTG TGACCTGAGG GGTAACAGCC TCTTTTCCAC TTTCTTTCAG

```
CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCCAGAG CAAATGCCCC CAAGTGGAGT
GGCTGGGCTG GCTCAACACC ATCCAGCCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT
CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGTAC
GCTGCTCCTG AGCTCACCCA TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG
TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT
GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC
TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA
GGTGTACCAG GGAGTGTGCC AGAAAGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA
CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT
CTCCGTCCCT GCCCCAGCAA GACAACTTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG TGCAATGGCT GAGTGCACAA
GTGAGTTGTT GCCCTGGGTT TCTTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC
CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA
GAAGAATCAA TAAGCACATA TGAGCACTTC TGTATATCAG TATTGAGCAC TGTAGGCA ATGTTCTCTC CCTGGAAGAT
ATCAATGTTT CTGTCTGTTT GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC
AAGGGCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTCTCTTCGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCCG
GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTGG
TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG
GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT
CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG
TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT
CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG
GGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT
CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG
GACAGTTGCT T ATGTTCTCTC CCTGGAAGAT ATCAATGTTT CTGTCTGTTC GTGAGGACTC CGTGCCCACC ACGGCCTCTT
TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC
TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT
GGCCCTGGTG AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT
GTACGCTGCT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT
GAGTGTCATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC
TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC
CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT
GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG
CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG
GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC
TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGCAGTAC CAGGGAGCGA CTGAAGTGCC
CATGCCGCTT GCTCCGGAGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCCTCACCT CTGCTGGGAG GACAAACTGT
CCCAGCACAG AGGGAGGGAG GGAGGGCAGG CAGCGGGGAG AAGTTTCCCT GTGGTCGTGG GGAGTT GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA
TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGGC
TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACÁAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA
AGTITCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA ATATTITAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT
AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC
AGGAAACTCC AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG
AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA
CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA
AGAGGAGCTG ATGGGCTGGO GGGACGTCCT CTGGCCCTCC TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT
CTCTTCTGAA GGAAGGGTTT TAAGGCTTCA AAAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG
CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG
AGAAACCTCC GCCATACATC TCCGAAGAAA CGGCCGCGTG TCTCAGGGGA GCGCAAACAC CCGTACCCAG GAAACAGGAC
AGCTTCTGCC ACTGTCGCCC TTGGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA CACCTTCCGC GTAAACGCC ACTGTTTACA TCCAAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCCAC GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC
CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT
GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG
ATGAGCTGTT CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT
```

CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA 5'- GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGCTGGG GGGACGTCCT CTGCCCTCC TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTTT TAAGGCTTCA AAAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC TCCGAAGAAA CCGCCGCGCGTG TCTCAGGGGA GCGCAAACAC CCGTACCAG GAAACAGGAC AGCTTCTGCC ACTGTCGCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA CACCTTCCGC GTAAACGCCC ACTGTTTACA TCCAAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTATT CACATGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCCAC GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGCCAGGCA GCGGGGAGAA GTTTCCCTGT GGTCGTGGGG AGTTGGGAAA AGTTCCCTTC CTTCCGGAGG GAGG-3' (FRAG.NO:2275) (SEQ ID NO:11830) 5'- GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGC TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT-3' (FRAG. NO:2275) (SEQ ID NO:11829) 5'- GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGCAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGGAGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCCTCACCT CTGCTGGGAG GACAAACTGT CCCAGCACAG AGGGAGGGAG GGAGGGCAGG CAGCGGGGAG AAGTTTCCCT GTGGTCGTGG GGAGTT-3' (FRAG.NO:2275)(SEQ ID NO:11828) 5'- ATOTTCTCTC CCTGGAAGAT ATCAATGTTT CTGTCTGTTC GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC
CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTTGGGGA GACGCTCTGC CGCGTGGTGA
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCITCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO:2275) (SEQ ID NO:11827) 5'- ATGITCICTC CCTGGAAGAT ATCAATGITT CTGTCTGTTT GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCGA S-AIGHTCTC CCIGGAGAT ATCAATGITT CIGICIGITT GRAGACTE CGIGCCCAC ACGCCTCT ICAGCGCCGAC
CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG
GCTGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCACCCTAG AGAACATCTT TGTCCTCAGC
GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC
CTGCGGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGAAGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG
AAAACCATGT CCATGGGCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCICA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO:2275) (SEQ ID NO:11826) 5'- TGATCCTATC ACAACCTGAG AGTAGTTTTT ACTCCATTTA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTTAAT AAATTAACTC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTTGGGAG GGCCCCGGTT GATAAGGAAG GAATGTGAAT CCTCCCATCA CGGAAGCTTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGAACATGAG GCCCCGTTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA CCCAGGGGAG TCAGGTGCAC TGGAGCGCGG GCTGCAGAAA ACAGCCTGAG CTCCACCTCG GCTTCTCCTT GCCTGGCTG GTTGTCCTTA ACCCCTGTCT CCTTCTGGAC CAGTTTTTGT CCTTCCCTTG TGACCTGAGG GGTAACAGCC
TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCACTCTT AACGGGACCT TTGCCCAGAG
CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT

TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA

```
GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC
       TTGGTGATCT GGGGGTGTAC GCTGCTCCTG AGCTCACCCA TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG
       CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG
       GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG
       TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC
       CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC
       TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA
       CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGCC CAGGAATGCC
       CAATTTTCGA GGGAGCATGG CTGTGAGGAT GGGGTGAACT CACGCACAGC CAAGGACTCC AAAATCACAA CAGCATTACT
       GTTCTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCCTTC CCAGGAGTGG AGGAGGCCTG GGGGAGGGAG AGGAGTGACT
       GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCCCCAGCAA GACAACTTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG
TGCAATGGCT GAGTGCACAA GTGAGTTGTT GCCCTGGGTT TCTTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT
GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG
       ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA TGAGCACTTC TGTATATCAG TATTGAGCAC TGTAGGCA -3'
       (FRAG. NO:2275) (SEQ ID NO:11825)
20
       5'- CTGCAGAAAA CAGCCTGAGC TCCACCTCGG CTTCTCCTTG CCCTGGCTGG TTGTCCTTAA CCCCTGTCTC CTTCTGGACC
       ATCCAGCCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC
       ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGTAC GCTGCTCCTG AGCTCACCCA
       TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC
       ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT
       GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG
       GCAGATCATG CAGGTGCTGC GGACAACGA GATGCAGAAG TICAAGGAAG TECAAGGAGA GAGGAGGCC ACGTGCTGCT
TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC
GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG
CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC
       AGAAAGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA
       TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG
       TCTCCGGTAA AACACCGGAG ACTAATTCCT GNCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC
       AGGAGTGGAG GAGGCCTGGG GGCAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCITTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT
       CTITAATCTA TTCAGCTAGA ACTITGAAGG ACAATITCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA
       ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAATCCA ATAAGCACAT ATTGAGCACT TGCTGTATAT GCAGTATTGA GCACTGTAGG CAAGAGGGAA GAAAGAGAAG GAGCCATCTC CATCTTGAAG
       GAACTCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG
       TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT
       CAGTTCCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG
       TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGA -3'
       (FRAG. NO:2275) (SEQ ID NO:11824)
       5'- AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA
       TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC
       ACTCTCTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG
       GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA
       GACTCCGTCT CAAAAAAAA AAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT
       TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT
      TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT
TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCCT GATCCCAGCT GTGCTTAGGG GTTCCTGCAA
ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCCTG TTTACCAACT CAGCTTTTTG TTTTAGTGTG TTTGAATTCC
CTGAACTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT
GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACA ACCCACATAC CCACACATGC
ACACACACA ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA
CTTGGTATCC TGGAGAGAGT GTGAAGTCCT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA
CAAGTCACCA CCAACCCATC TGCGCCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC CCCTTGGATG
GGAGTGATGT GAAACTTGAA GGCCGGTCAG AGCAAGGGTC GGGAATGGAAA GGCCCTTGGG AAAAAAAGGCC CTTTCAACTA
GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA
CTTGGAAATAC
      CTAGCACCGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC ACTCACATCC CACTCTGAGT CCAAATGTTC TCTCCCTGGA AGATATCAAT GTTTCTGTCT GTTCGTGAGG ACTCCGTGCC
```

CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT CCCTGGAAAG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG
TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTTCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTTAG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CCTCACTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC CTCACTCAAC CTCTTGCTAC TTCCCACCTC TCCTGTCCAA CATCTAGTGT CACTTCCAG AACATACCAA CAGCTTCCCC AGTTCTGTGC CTCTGCTCAG
GCTGTTCCCC CTGCCTGGTC CACTTGTCCT CCTTCTTGTC CGGTCAAAAT GCTTCTTATC CTTCAAGACC CAGCTCTAGA
GTCACCTCCA ACCCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCCA CAACCCCCCT GCTCCCTCCA GGGCACCCTC
CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGCCAG GGGCCGGGTG GTGTCTTCTT TGTGTTCTTG CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCGT
GACTGGTAGT TCAGCTCTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC
ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC
ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT AAGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC
TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT
CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC CCTCGCCATC TOTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AAACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT TTTCTCTTTT AATAAATTAA CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT CGGCTTCTCC TTGTCCTGGC TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG
TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGGC CATCACCATC TCCAACAACT
TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC
CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGCG TGCGCTGGGC
CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG ACAGTTGCTT TTCAGCATGG GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAAACACCG GAGACTAATT CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAAATCACA ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA GCCAGGTTCC AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC -3' (FRAG. NO:2275) (SEQ ID NO:11823) 5'- CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGACTGGAG GAGGCCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTITAATCTA TICAGCTAGA ACTITGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TIGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG

TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCAC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC 15 TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAAGAAGA AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAA AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA 20 CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAA -3' (FRAG. NO:2275) (SEQ ID NO:11822) 5'- GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCCT CTGGCCCTCC TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTT TAAGGCTTCA
AAAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC TCCGAAGAAA CGGCCGCGTG TCTCAGGGGA GCGCAAACAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTCGCCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA CACCTTCCGC GTAAACGCCC ACTGTTTACA TCCAAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCCAC GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA GTTTCCCTGT GGTCGTGGGG AGTTGGGAAA AGTTCCCTTC CTTCCGGAGG GAGG-3' (FRAG..NO:2275) (SEQ ID NO:11821) 5'- GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGGC TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT -3' (FRAG.NO:2275) (SEQ ID NO:11820) 5'- GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGCAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGGAGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCCTCACCT CTGCTGGGAG GACAAACTGT CCCAGCACAG AGGGAGGGAG GGAGGGCAGG CAGCGGGGAG AAGTTTCCCT GTGGTCGTGG GGAGTT-3' (FRAG.NO:2275) (SEQ ID NO:11819) 5'- ATGITICICIC CCTGGAAGAT ATCAATGITT CTGTCTGTTC GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG
GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC
GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC
CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC ACCITCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO.2275) (SEQ ID NO.11818)
5- ATGTTCTCTC CCTGGAAGAT ATCAATGTTT CTGTCTGTTT GTGAGGACTC CGTGCCCACC ACGGCCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG
GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC
GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC
CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG
AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACCGTGCT CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCCT GAGTGTCATC

ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO:2275) (SEQ ID NO:11817)
5'- TGATCCTATC ACAACCTGAG AGTAGTTTTT ACTCCATTTA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC ACGCCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTTAAT AAATTAACTC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTTGGGAG GGCCCCGGTT GATAAGGAAG GAATGTGAAT CCTCCCATCA CGGAAGCTTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TIGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGAACATGAG GCCCCGTTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA CCCAGGGAG TCAGGTGCAC TGGAGCGCG GCTGCAGAAA ACAGCCTGAG CTCCACCTCG GCTTCTCCTT GCCCTGGCTG GTTGTCCTTA ACCCCTGTCT CCTTCTGGAC CAGTTTTTGT CCTTCCCTTG TGACCTGAGG GGTAACAGCC TCTTTCCAC TTTCTTCAG CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCCC CCTTCCTCTG GGTGCTGTTC GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGCAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC 20 TTGGTGATCT GGGGGTGTAC GCTGCTCCTG AGCTCACCCA TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT CAATTTTCGA GGGAGCATGG CTGTGAGGAT GGGGTGAACT CACGCACAGC CAAGGACTCC AAAATCACAA CAGCATTACT GTICTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCCTTC CCAGGAGTGG AGGAGGCCTG GGGGAGGGAG AGGAGTGACT GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCCCCAGCAA GACAACTTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG TGCAATGGCT GAGTGCACAA GTGAGTTGTT GCCCTGGGTT TCTTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA TGAGCACTTC TGTATATCAG TATTGAGCAC TGTAGGCA -3' (FRAG. NO:2275) (SEQ ID NO:11816) 5'- CTGCAGAAAA CAGCCTGAGC TCCACCTCGG CTTCTCCTTG CCCTGGCTGG TTGTCCTTAA CCCCTGTCTC CTTCTGGACC ATGAACCTGT ACAGCAGCAT CTGTTTCCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGGTGTAC GCTGCTCCTG AGCTCACCCA
TGCTGGTGTT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTCACCAA CATGCTCCTG AATGTCGTGG GCTTCCTGCT GCCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAGA TCCAGAGAGA GAGGAGGGCC ACGGTGCTAG
TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC
GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG
CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGACA GTTGCTTTC AGCATGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG
TCTCCGGTAA AACACCGGAG ACTAATTCCT GNCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA
CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC
AGGAGTGGAG GAGGCCTGGG GGCAGGAAG GGAGTGACTG ACTTTCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTITAATCTA TICAGCTAGA ACTITGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAATCCA ATAAGCACAT ATTIGAGCACT TGCTGTATAT GCAGTATTGA GCACTGTAGG CAAGAGGGAA GAAAGAGAAG GAGCCATCTC CATCTTGAAG GAACTCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGA -3' (FRAG. NO:2275) (SEQ ID NO:11815) 5- AAATGATAGA CCGTCAATAA TITGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC ACTOTOTACO AAAAATACAA AAATTAGOCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA GACTCCGTCT CAAAAAAAAA AAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCCT GATCCCAGCT GTGCTTAGGG GTTCCTGCAA

```
ACCITITCCA GGTGTTAATT ACCITCCACT TCATTTCCTG TTTACCAACT CAGCITTTTG TTTTAGTGTG TTTGAATTCC
          CTGAACTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACA ACCCACATAC CCACACATGC
         ACACACACAC ACACACCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA CTTGGTATCC TGGAGAGAGT GTGAAGTCCT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA CAAGTCACCA CCAACCCATC TGCGCCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCCTGC CCCCTGGATG
          GGAGTGATGT GAAACTTGAA GGGCGGTCAG AGCAAGGGTC GGGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA
        GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC
TCAGATGTGT CTGTCTCCCT TATTAGGTTC AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT
CCTCTGAGCT CCAGACCCTG CTGGACCCAA CCAGCCCTAT GGGGTCGCAT CCCCACCTGC CTGGAATTCT CCAAAGAACC
TCCCCTTTAA CAGTTCCAGC CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCCTCT AAATCAGCC CCCATCTCTG
CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCCTCACC CCATCCAAGC ACTAGGCATG
        TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CCAGTCTCC AGCTCCATC ATCCAGGTC GAAGCTAATG GGCTAACTGG
TCCTTGCTTC CACTCTAACC CCACTGCAGT CTGACTTC AGCTCCATC ATCCCAGGTC GAAGCTAATG GGCTAACTGG
TCCTTGCTTC CACTCTACCC CCACTGCAGT CCTGACTTC TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG
CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT
AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTC TATGCTCTCA CAGGACCTTT TGCTTGATTT TTCACTGTAC
TTAGGTCAGT TTGCAGTTAT TAAGTGACTG AGCACTGTCT GGCTCTCCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC
        TIAGGICAGI TIGGAGITAT TAAGIGACIG AGCAATGICI GGCTTCICCA GIAGACTGIC AGCICCIAGC CATTGIATAC
CTAGCACCGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGGG
AGAATGCGTG TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC
ACTCACATCC CACTCTGAGT CCAAATGTTC TCTCCCTGGA AGATATCAAT GTTTCTGTCT GTTCGTGAGG ACTCCCTGGCC
CACCACGGCC TCTTCAGGT GAGTCAAAGG GATTCCTCAG TTCAGTTA AGGGAAGGTG GGCAGACACC CTGGAGAACCT
CCCTGGGAAA CTCCCCCGGA CACCAGTTGA AGGCAACCATG GTGATGTTAA GCCCCAAAGAC AAAACCTCTC
ACGCTGGCAAA CTCCCCTGTTC CACCACACCACAA
         AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA
         AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG
         TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG
         GAGATCTGTT CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCCGCACTC
        AGCAGGCATC TTTCTGATGA TCCGATGGC ACGGATGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC
TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGGGT TAGCTCATGA AAGATGATAG ACTCTCCAAG
CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG
         TCTTACCTTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCIGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG
         CCAGAGGATC CACTITICAAG GTGGCAAGIT GGITCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC
        TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG
         TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTTAG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CCTCACTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC CTCACTCAAC CTCTTGCTAC
        GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAAGGTGA TGATCAGTAA TCTCTCCCGT
GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC
ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC
         ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA
        50
        CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTACTT GGCTGCAAAG TCCCCACCCC CCTCGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AAACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT
        TTTCTCTTTT AATAAATTAA CTCACCCACC ACACGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG
GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG
        CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG
        ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT
        CGGCTTCTCC TTGTCCTGGC TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG
        CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA
        TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA
        TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA
        GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG ACAGTTGCTT TTCAGCATGG
```

ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA 10 GCCAGGTTCC AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC-3' (FRAG.NO:2275) (SEQ. D NO:2445) 5'-CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT CTITAATCTA TICAGCTAGA ACTITGAAGG ACAATTTCTI GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG
TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT 20 CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT 25 TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCCACCAC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG 30 AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAAGAAGA AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAAA AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGCATT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAA AAAAAAAA-3' (FRAG. NO:2275) (SEQ ID NO:11813) 5'- GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAAACTCC AGATTAAGGA GCCCCAATGT GGTTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAÁTCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCCT CTGGCCCTCC TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTTT TAAGGCTTCA AAAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC TCCGAAGAAACCCGGCCGCGTG TCTCAGGGGA GCGCAACACC CCGTACCCAG GAACAGGAC AGCTTCTGCC ACCTGGCCAC CCTCTGTTTA CACCTTCGCC GTAAACGCCC GTAAACGCCC ACTOTITACA TCCAAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCCGTCCCAC GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAAATC TTCCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA GTTTCCCTGT GGTCGTGGGG AGTTGGGAAA AGTTCCCTTC CTTCCGGAGG GAGG-3' (FRAG.NO:2275) (SEQ ID NO:11812) 5'- GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC GGGCAGGGG TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAACTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC ACCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT -3' (FRAG. NO:2275) (SEQ ID NO:11811)
5'- AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA TCCCAGCACT TTGGACCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC ACTCTCTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA GACTCCGTCT CAAAAAAAA AAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACIGTT GAATTTTCTT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACTCCCTG CCTTGAAGGT TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCCT GATCCCAGCT GTGCTTAGGG GTTCCTGCAAACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCCTG TTTACCAACT CAGCTTTTTG TTTTAGTGTG TTTGAATTCC CTGAACTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT

```
GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACA ACCCACATAC CCACACATGC
 ACACACAC ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA
 CTIGGTATCC TGGAGAGAGT GTGAAGTCCT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA
 CAAGTCACCA CCAACCCATC TGCGCCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC CCCCTGGATG
 GGAGTGATGT GAAACTTGAA GGGCGGTCAG AGCAAGGGTC GGGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA
GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC
 TCAGATGTGT CTGTCTCCCT TATTAGGTTC AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT
CCTCTGAGCT CCAGACCCTG CTGGACCCAA CCAGCCCTAT GGGGTCGCAT CCCCACCTGC CTGGAATTCT CCAAAGAACC TCCCCTTTAA CAGTTCCAGC CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCCTCT AAATCAGCCC CCCATCTCTG CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG
 TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CCAGTCTCC AGTCTCCATC ATCCCAGGTC GAAGCTAATG GGCTAACTGG TCCTTGCTTC CACTCTACCC CCACTGCAGT CCTGACTTCC TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG
CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTC TATGCTCTCA CAGGACCTTT TGCTTGATTT TTCACTGTAC TTAGGTCAGT TTGCAGTTAT TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC
CTAGGACGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCTGGCTGGAGAATGCGTG TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC ACTCACATCC CACTCTGAGT CCAAATGTTC TCTCCCTGGA AGATATCAAT GTTTCTGTCT GTTCGTGAGG ACTCCGTGCC CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT
 CCCTGGAAAG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC
 AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA
 GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG
TGGGAGATCA GAACACCCTA AAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG
GAGATCTGTT CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC
TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT CCCCTTGGCT ACTGTCTTGC TGAGAAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCCATGA AAGATGATAG ACTCTCCCAAG
CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT
 CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACTGGGG
 CCAGAGGATC CACTITCAAG GTGGCAAGIT GGTTCCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC
 TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG
TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTTAG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CCTCACTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC CTCACTCAAC CTCTTGCTAC
TTCCCACCTC TCCTGTCCAA CATCTAGTGT CACTTTCCAG AACATACCAA CAGCTTCCCC AGTTCTGTGC CTCTGCTCAG
GCTGTTCCCC CTGCCTGGTC CACTTGTCCT CCTTCTTGTC CGGTCAAAAAT GCTTCTTATC CTTCAAGACC CAGCTCTAGA
 GTCACCTCCA ACCCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCCA CAACCCCCCT GCTCCCTCCA GGGCACCCTC
 AGAGCTCAGC ACAGAGCAGA COCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCAG TCTGGCTCCA
GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCGT GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT TCTCTCACCC
 ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC
ACTOTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC CCTACTCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA
 AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT
 TOCCTAAGAA TGAAAGAGA OCCAGTGGGT TAAAGATGAO GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT
AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC
 CCTCGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC
 AGGAAGACAG AAACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGGAATCTCC AGGTCTGGAA TGATATCATT
 TITCTCTTTT AATAAATTAA CTCACCCACC ACACGCCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG
 GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG
 CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG
 ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT
CGGCTTCTCC TTGTCCTGGC TGGTTGTCCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT
GAGGGGTAAC AGCCTCTTTC CACTTCTTT CAGCGCCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA
CCTTTGCCCA GAGCAAATGC CCCCAAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCCT CTGGGTGCTG
TCGTGGTGG CCACCTAGA GAACATCTT GTCCTCAGCG TCTCTCTGCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGGG AACCTGGCC CAGCAGACCT GATCACCACT TCCAACAACT TCGACTGGCT CTTTGGGG AACCTGGCC CAGCAGACCT GATCACCATC TCCAACAACT TCGACTGGCT CTTTTGGGGAG ACCTTGCTGC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG TGAGCATCA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGCG TGCGCTGGGC CAAGGTCTAC AGCTTGGTAA TCTGGGGGTG TACGCTGGTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGAGAGT
ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA
CTGAATGTCG TGGGCTTCCT GCTGCCCCTG AGTGTCATCA CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACTCCATG GGACCTGCCAT CTCCGTGGAA CGCCAGATTC ACAAACTGCA GGACTGGGCA
GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGG ACAGTTGCTT TTCAGCATGG
GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAAACACCG GAGACTAATT
CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAAATCACA
```

```
ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC
        ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA
       AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACGACT
        GGGCACTGCC ACCACCAGAA AGCTGTTCGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA
       GCCAGGTTCC AGCTCACCAA TACTATTGCA CACCACCTGT CCTGCCTC -3' (FRAQ. NO: _) (SEQ ID NO 2441)
5'-CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA
       TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA
       CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTTGC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGAG GAGGCCTGGG GGGAGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTC TCCGTCCCTG CCCCAGCAAG
        ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG CCCTGGGTTT
       CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA
        TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG
        TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT
       CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG
TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA
20
        ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT
       TGGCTCCCTT CCACCTGTCA TTCCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC
25
        CCCCACCACC, AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA ACCAAGGGAT
        TOTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT
        TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG
       AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG
GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA
30
        ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT
       GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG
GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC
TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA
       CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAAGAAGA AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAAA AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGTCATTCAG CACCAGAGCA
        CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT GTGGGGGATCC ACACCTGGTC TGAGGGGCAA
       CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAA -3' (FRAQ. NO: _) (SEQ ID NO 2431)
        5'-GGTGBCBTTGBGCBTGTCGGCGC-3' (FRAG. NO:2276) (SEQ ID NO:11658)
        5'-GGTCCCGTTBBGBGTGGGCCC-3' (FRAG. NO:2277) (SEQ ID NO:11659)
       5'-GCCAGCCAGCCACTCCACTTGGGGGC-3' (FRAG. NO:2278) (SEQ ID NO:11660)
5'-GGGTGGCCAGCACGAACAGCACCCAGAGGAAGGGGGGC-3' (FRAG. NO:2279) (SEQ ID NO:11661)
5'-GGCCCAGAAGGGCAGCCCGCAGGCCAGGATCAGGTCTGCTGCGGCC-3' (FRAG.NO:2280)(SEQ ID NO:11662)
        5'-GGAGATAATGGCATTCACCACGCGGC-3' (FRAG. NO:2281) (SEQ ID NO:11663)
5'-GGCCCAGCGCACGCCGCCATCCGGCCC-3' (FRAG. NO:2282) (SEQ ID NO:11664)
       50
       5'-CTTGCTGGGGCAGGACGG-3' (FRAG. NO:2286) (SEQ ID NO:11668)
5'-GGTGBCBTTGBGCBTGTCGGCGC-3' (FRAG. NO:2287) (SEQ ID NO:11669)
5'-GGTCCCGTTBBGBGTGGGCCC-3' (FRAG. NO:2288) (SEQ ID NO:11670)
        5'-GCCAGCCCAGCCACTTCGGGGGC-3' (FRAG. NO:2289) (SEQ ID NO:11671)
5'-GGGTGGCCAGCACGAACAGCACCCAGAGGAAGGGGGGGC-3' (FRAG. NO:2290) (SEQ ID NO:11672)
        5'-GGCCCAGAAGGGCAGCCCGCAGGCCAGGATCAGGTCTGCTGCGGCC-3'(FRAG.NO:2291)(SEQ ID NO:11673)
       5'-GGAGATAATGGCATTCACCACGCGGC-3' (FRAG. NO:2292) (SEQ ID NO:11674)
5'-GGCCCAGCGCACGCCGCGCATCCGGCCC-3' (FRAG. NO:2293) (SEQ ID NO:11675)
       5'-GGGTTCTGACCTGCAGCCCCC-3' (FRAG. NO:2294) (SEQ ID NO:11676)
5'-GTCTCCTTGGCATTCCTGGGCCC-3' (FRAG. NO:2295) (SEQ ID NO:11677)
5'-CAGTCACTCCTCTCCCTGCCCCC-3' (FRAG. NO:2296) (SEQ ID NO:11678)
       5'-CTTGCTGGGGCAGGGACGG-3' (FRAG. NO:2297) (SEQ ID NO:11679)
5'-CCGTGTTGTCBGTGGTGCTG-3' (FRAG. NO:2298) (SEQ ID NO:11680)
       5'-CCCGTTTGBGGTBTGGC-3' (FRAG. NO:2299) (SEQ ID NO:11681)
5'-GCTCCBCCBBTTCCCTTTTCTCC-3' (FRAG. NO:2300) (SEQ ID NO:11682)
5'-TTGTTTTCCGTTTCTCTG-3' (FRAG. NO:2301) (SEQ ID NO:11683)
65
        5'-CCGTCTGTGGTT-3' (FRAG. NO:2302) (SEQ ID NO:11684)
        B2 Adrenergic Receptor Kinase Nucleic Acids and Antisense Oligonucleotide Fragments
5'- GCCGCCGCCG CCAAGATGGC GGACCTGGAG GCGGTGCTGG CCGACGTGAG CTACCTGATG GCCATGGAGA AGAGCAAGGC
        CACGCCGGCC GCGCGCCCA GCAAGAAGAT ACTGCTGCCC GAGCCCAGCA TCCGCAGTGT CATGCAGAAG TACCTGGAGG
        ACCGGGGCGA GGTGACCTTT GAGAAGATCT TTTCCCAGAA GCTGGGGTAC CTGCTCTTCC GAGACTTCTG CCTGAACCAC CTGGAGGAGG CCAGGCCCTT GGTGGAATTC TATGAGGAGA TCAAGAAGTA CGAGAAGCTG GAGACGGAGG AGGAGCGTGT
       GGCCGCAGC CGGGAGATCT TCGACTCATA CATCATGAAG GAGCTGCTGG CCTGCTCGCA TCCCTTCTCG AAGAGTGCCA CTGAGCATGT CCAAGGCCAC CTGAGGAAGA AGCAGGTGCC TCCGGATCTC TTCCAGCCAT ACATCGAAGA GATTTGTCAA
```

```
AACCTCCGAG GGGACGTGTT CCAGAAATTC ATTGAGAGCG ATAAGTTCAC ACGGTTTTGC CAGTGGAAGA ATGTGGAGCT
      CAACATCCAC CTGACCATGA ATGACTTCAG CGTGCATCGC ATCATTGGGC GCGGGGGCTT TGGCGAGGTC TATGGGTGCC
     GGAAGGCTGA CACAGGCAAG ATGTACGCCA TGAAGTGCCT GGACAAAAAG CGCATCAAGA TGAAGCAGGG GGAGACCCTG
GCCCTGAACG AGCGCATCAT GCTCTCGCTC GTCAGCACTG GGGACTGCCC ATTCATTGTC TGCATGTCAT ACGCGTTCCA
CACGCCAGAC AAGCTCAGCT TCATCCTGGA CCTCATGAAC GGTGGGGACC TGCACTACCA CCTCTCCCAG CACGGGGTCT
     TCTCAGAGGC TGACATGCGC TTCTATGCGG CCGAGATCAT CCTGGGCCTG GAGCACATGC ACAACCGCTT CGTGGTCTAC CGGGACCTGA AGCCAGCCAA CATCCTTCTG GACGAGCATG GCCACGTGCG GATCTCGGAC CTGGGCCTGG CCTGTGACTT
     CTCCAAGAAG AAGCCCCATG CCAGCGTGGG CACCCACGGG TACATGGCTC CGGAGGTCCT GCAGAAGGGC GTGGCCTACG
     ACAGCAGTGC CGACTGGTTC TCTCTGGGGT GCATGCTCTT CAAGTTGCTG CGGGGGCACA GCCCCTTCCG GCAGCACAAG
     ACCAAAGACA AGCATGAGAT CGACCGCATG ACGCTGACGA TGGCCGTGGA GCTGCCCGAC TCCTTCTCCC CTGAACTACG
     CTCCCTGCTG GAGGGGTTGC TGCAGAGGGA TGTCAACCGG AGATTGGGCT GCCTGGGCCG AGGGGCTCAG GAGGTGAAAG AGAGCCCCTT TTTCCGCTCC CTGGACTGC AGATGGTCTT CTTGCAGAAG TACCCTCCCC CGCTGATCCC CCCACGAGGG
      GAGGTGAACG CGGCCGACGC CTTCGACATT GGCTCCTTCG ATGAGGAGGA CACAAAAGGA ATCAAGTTAC TGGACAGTGA
     TCAGGAGCTC TACCGCAACT TCCCCCTCAC CATCTCGGAG CGGTGGCAGC AGGAGGTGGC AGAGACTGTC TTCGACACCA TCAACGCTGA GACAGACCGG CTGGAGGCTC GCAAGAAAGC CAAGAACAAG CAGCTGGGCC ATGAGGAAGA CTACGCCCTG
     GGCAAGGACT GCATCATGCA TGGCTACATG TCCAAGATGG GCAACCCCTT CCTGACCCAG TGGCAGCGGC GGTACTTCTA
     CCTGTTCCCC AACCGCCTCG AGTGGCGGGG CGAGGGCGAG GCCCCGCAGA GCCTGCTGAC CATGGAGGAG ATCCAGTCGG
     TGGAGGAGAC GCAGATCAAG GAGCGCAAGT GCCTGCTCCT CAAGATCCGC GGTGGGAAAC AGTTCATTTT GCAGTGCGAT
      AGCGACCCTO AGCTGGTGCA GTGGAAGAAG GAGCTGCGCG ACGCCTACCG CGAGGCCCAG CAGCTGGTGC AGCGGGTGCC
     CAAGATGAAG AACAAGCCGC GCTCGCCCGT GGTGGAGCTG AGCAAGGTGC CGCTGGTCCA GCGCGGCAGT GCCAACGGCC
      TCTGACCCGC CCACCCGCCT CCAGGAAGCT ACCTGGAGGA GGTGAGTCTT AGCGGATGAG TAGGAGTTGT CCACGGAGGA
     AGGTACACAG AAGGGCTTCC AGGCCCAGGA AACAGCAGAG GCACAGAAGT GAGAATGGGT GGGTGAGTTG GTGGGGAAAC TCCAGGTGCA GAGGATGGTA GCGAAACAAA CTGGAGCATT AAGGTCCAAG TCCTCCAAGA TCTTGACTTG CAGATTAAGG
     GAAGGCCTGG AGAGCTGCTT CTGGGTGCCA AGCAGGCAGT GACTCCATCA GATCTAGATT TGGGAAAAGC ATCCCTGGTC AGGGCCTGCA TCAGGGCAGT GGCTGGCCAT GAGGACCCTG AGAAGTAGAC AGATTCACGG AGATTCTCAG GAGGCCAGAC
     AGGAGACTAT GGTGACAAAT TAGATTAGAG AAGGGGAGAG AATGAAGGAG CAGTTGGGGT AAAAGAAAAC TGAGGCTGAC
     ATGGGTATAT GGGTGGCGAG TGACTCACCA CCCACTGAGA GGAGAACCTC ACAAGCTCTG ACATGCTCTG GTTCCAGGTT
     CTGTTGGGGC TGATCCAAGA TGGTAGCCTA GAGGTGCACA GAGATGGGGG CCTTGCTTTG CAAAAGGATG CTGGCTGCTG
     GCCCACAGCA TGGTAATGAG ATTTGAGCTT TATGTGCCCA GGGCTGGGAG GAGGGTCCTG TCACTTTGAA AGCAAAGAGA GGCTCTAGAG AGGGGCATGT TGAGATAGGA ATGCTGCCTT GAGACACCTG GCTTTCCCCA CTCTGGGTGG CTCTCAGCAG
     GGTGGGTTTC CCCTGCCAGG CAGCACTGAA CCTCTGTGCG CTTCCGGCTG GGAGAGTTTT TACCGTAACT ACATGTGGAA
     CCATCCTGAA GGAACATCTG GATGGGATGG GGTACAGGGA AGGGAGCTGC CAAGAGTGCT GGCCAGGGAC CTGGGTCTAT
     GAGCTGGTTG GGGGGTGGGG TTGGGTGCAG GGTACTTGAT CCTGAGTGGG CCTTCTGCGG CCAGGATTGG TTCTAGAGTA GGAGGGGTGG GATCGGGGAT GGGGGAAGCC TGTAACTGCG CTGCAGTTGT CAGGTCCCAG GTTCTGGGTG ACCTACTAAG
     GATTCTGGGT CCAGTGTGG TCCCAGGTTA GACGTCCTAG TCCTGAGTCC GTGTCCACAG TTCTGGGTGT TGAGTCTAGG
ACAGTGATCT GGAGTTGACA GTCCAATCTA GGTCTGAGTC CTGACCCCAA GTCTAGAGTT CAGGGTCATG GTAGTAGCCT
     AGGGTCAGAA TCAAGGTTGG GGTCAGTAAC CAGGATGGGA TCGAGGTCAT GGTCCAAAAT CTGGATCTGG GGACCTGTTG
     GGGGTCTGAG GTGAGTGTCG CAGTCTGGGT ATGGCGTTGG AGACCCAGGG CTGTGATCTG AGGTCATGGT TAGAGTCTCA
GGTGGTGGGC CAAGGTTTGA GTCTGGGGTC CTGTTTTGGAG TCTGGTGTCA GGTCGTGGAC TGCGTCCAAG GTCAGGGAGT
     CCGGGGTTAT AGCCAGGGTC TGAGATGAAA GTCCCAGATG GTGTTCAGAG GTCTGAATCT GTGTCTTGGT GAGCGTCCAG
     GTTCCCTGTG ATCACGTTTG GTGTCAGGGC TGCGGCCCGA CTGGGGAGCC TGGGATCCAG AGATGTGACC CGAGGTTGTG GTCAGAGAAT GGGTCTCGGG TCGTCTTCGT GCCGGGTCCC TGTCGTGTTC CAGGCCCGGG TCTCCGTCCA GCATCGAGGG CCGAGGTCAC GGCCAGGGTC TGAGCCCGCG GTCGCAGGTC TGGTTCGGGG TCAGATTCCG CGCGGCCTCC AGGGGGCGCC
     GTCGCCGCCC GGCTCGGCCC CTCGCGGGCT CGCTGGCGTT GTGCGCGGCA GGCGGGGCCG GAGGCGGCGG CGGCTCCGGG
     CGGAGCCGC GCCATGGGGC GGCGCCGCT GTGAGCGGCG GCGAGCGGAG CCGCGGGCGC CGAGCAGGGC CAGGCGGGAG
     CGTCGGCGCC CGAGGCCGAG CGAGCCGCGG CCGGGCCGGG CCGAGCGCCG AGCGAGCAGG AGCGGCGGCG GCGGCGGCG
     CGGCGGGAGG AGGCAGCGCC GCCGCCAAGA TGGCGGACCT GGAGGCGGTG CTGGCCGACG TGAGCTACCT GATGGCCATG
50
     GAGAAGAGCA AGGCCACGCC GGCCGCGCC GCCAGCAAGA AGATACTGCT GCCCGAGCCC AGGTGAGGAG AAGCT-3' (FRAG.
     NO: ) (SEQ ID NO:11799)
     5'-CCAGGAAGCT ACCTGGAGGA GGTGAGTCTT AGCGGATGAG TAGGAGTTGT CCACGGAGGA AGGTACACAG AAGGGCTTCC
     AGGCCCAGGA AACAGCAGAG GCACAGAAGT GAGAATGGGT GGGTGAGTTG GTGGGGAAAC TCCAGGTGCA GAGGATGGTA
     CTGGGTGCCA AGCAGGCAGT GACTCCATCA GATCTAGATT TGGGAAAAGC ATCCCTGGTC AGGGCCTGCA TCAGGGCAGT GGCTGGCCAT GAGGACCCTG AGAAGTAGAC AGATTCACGG AGATTCTCAG GAGGCCAGAC AGGAGACTAT GGTGACAAAT
     TAGATTAGAG AAGGGGAGAG AATGAAGGAG CAGTTGGGGT AAAAGAAAAC TGAGGCTGAC ATGGGTATAT GGGTGGCGAG
     TGACTCACCA CCCACTGAGA GGAGAACCTC ACAAGCTCTG ACATGCTCTG GTTCCAGGTT CTGTTGGGGC TGATCCAAGA TGGTAGCCTA GAGGTGCACA GAGATGGGGG CCTTGCTTTG CAAAAGGATG CTGGCTGCTG GCCCACAGCA TGGTAATGAG
     ATTTGAGCTT TATGTGCCCA GGGCTGGGAG GAGGGTCCTG TCACTTTGAA AGCAAAGAGA GGCTCTAGAG AGGGGCATGT
     TIGGGTGCAG GGTACTTGAT CCTGAGTGGG CCTTCTGCGG CCAGGATTGG TTCTAGAGTA GGAGGGGTGG GATCGGGGAT
     GGGGGAAGCC TGTAACTGCG CTGCAGTTGT CAGGTCCCAG GTTCTGGGTG ACCTACTAAG GATTCTGGGT CCAGTGTGGG
     TCCCAGGTTA GACGTCCTAG TCCTGAGTCC GTGTCCACAG TTCTGGGTGT TGAGTCTAGG ACAGTGATCT GGAGTTGACA
GTCCAATCTA GGTCTGAGTC CTGACCCCAA GTCTAGAGTT CAGGGTCATG GTAGTAGCCT AGGGTCAGAA TCAAGGTTGG
     GGTCAGTAAC CAGGATGGGA TCGAGGTCAT GGTCCAAAAT CTGGATCTGG GGACCTGTTG GGGGTCTGAG GTGAGTGTCG
     CAGTCTGGGT ATGGCGTTGG AGACCCAGGG CTGTGATCTG AGGTCATGGT TAGAGTCTCA GGTGGTGGGC CAAGGTTTGA
GTCTGGGGTC CTGTTTGGAG TCTGGTGTCA GGTCGTGGAC TGCGTCCAAG GTCAGGGAGT CCGGGGTTAT AGCCAGGGTC
     TGAGATGAAA GTCCCAGATG GTGTTCAGAG GTCTGAATCT GTGTCTTGGT GAGCGTCCAG GTTCCCTGTG ATCACGTTTG
GTGTCAGGGC TGCGGCCCGA CTGGGGAGCC TGGGATCCAG AGATGTGACC CGAGGTTGTG GTCAGAGAAT GGGTCTCGGG
     TCGTCTTCGT GCCGGGTCCC TGTCGTGTTC CAGGCCCGGG TCTCCGTCCA GCATCGAGGG CCGAGGTCAC GGCCAGGGTC
     TGAGCCCGCG GTCGCAGGTC TGGTTCGGGG TCAGATTCCG CGCGGCCTCC AGGGGGCGCC GTCGCCGCCC GGCTCGGCCC
```

```
CTCGCGGGCT CGCTGGCGTT GTGCGCGGCA GGCGGGGCCG GAGGCGGCGG CGGCTCCGGG GGCGCGGGCC GGGCGGCGGC
           GGCGCCGCCT GTGAGCGGCG GCGAGCGGAG CCGCGGGCGC CGAGCAGGGC CAGGCGGGAG CGTCGGCGCC CGAGGCCGAG
           CGAGCCGCGG CCGGGCCGGG CCGAGCGCCG AGCGAGCAGG AGCGGCGGCGG GCGGCGGCGG CGGCGGGAGG AGGCAGCGCC
           GCCGCCAAGA TGGCGGACCT GGAGGCGGTG CTGGCCGACG TGAGCTACCT GATGGCCATG GAGAAGAGCA AGGCCACGCC
           GGCCGCGCC GCCAGCAAGA AGATACTGCT GCCCGAGCCC AGGTGAGGAG AAGCT-3' (FRAG. NO:_) (SEQ ID NO:11798)
            5'-GCCGCCGCCG CCAAGATGGC GGACCTGGAG GCGGTGCTGG CCGACGTGAG CTACCTGATG GCCATGGAGA AGAGCAAGGC
           CACGCCGGCC GCGCGCCCA GCAAGAAGAT ACTGCTGCCC GAGCCCAGCA TCCGCAGTGT CATGCAGAAG TACCTGGAGG
           ACCGGGGCGA GGTGACCTTT GAGAAGATCT TTTCCCAGAA GCTGGGGTAC CTGCTCTTCC GAGACTTCTG CCTGAACCAC
          CTGGAGGAGG CCAGGCCCTT GGTGGAATTC TATGAGGAGA TCAAGAAGTA CGAGAAGCTG GAGACGGAGG AGGAGCGTGT GGCCCGCAGC CGGGAGATCT TCGACTCATA CATCATGAAG GAGCTGCTGG CCTGCTCGCA TCCCTTCTCG AAGAGTGCCA
            CTGAGCATGT CCAAGGCCAC CTGGGGAAGA AGCAGGTGCC TCCGGATCTC TTCCAGCCAT ACATCGAAGA GATTTGTCAA
          CTGAGCATGT CCAAGGCCAC CTGGGGAAGA AGCAGGTGCC TCCGGATCTC TTCCAGCCAT ACATCGAAGA GATTTGTCAA
AACCTCCGAG GGGACGTGTT CCAGAAATTC ATTGAGAGCG ATAAGTTCAC ACGGTTTTGC CAGTGGAAGA ATGTGGAGCT
CAACATCCAC CTGACCATGA ATGACTTCAG CGTGCATCGC ATCATTGGGC GCGGGGGCTT TGGCGAGGTC TATGGGTGCC
GGAAGGCTGA CACAGGCAAG ATGTACGCCA TGAAGTGCCT GGACAAAAAG CGCATCAAGA TGAAGCAGGG GGAGACCCTG
GCCTGAACG AGCGCATCAT GCTCTCGCTC GTCAGCACTG GGGACTGCCC ATTCATTGTC TGCATGTCAT ACGCGTTCCA
CACGCCAGAC AAGCTCAGCT TCATCCTGGA CCTCATGAAC GGTGGGGACC TGCACTACCA CCTCTCCCAG CACGGGGTCT
TCTCAGAGGC TGACATGCGC TTCTATGCGG CCGAGATCAT CCTGGGCCTG GACCACTGC ACAACCGCTT CGTGGTCTAC
CGGGACCTGA AGCCAGCCAA CATCCTTCTG GACGACCAGG GCCACCACGGG GATCTCGGAC CTGGGCCTGG CCTGTGACTT
CTCCAAGAAGA AAGCCCCATG CCACGCTGGG CACCACCGGG TACATTGCTG CCGGGGCACA GCCCCTTCCG GAAGCACAAG
20
           ACAGCAGTGC CGACTGGTTC TCTCTGGGGT GCATGCTCTT CAAGTTGCTG CGGGGGCACA GCCCCTTCCG GCAGCACAAG
ACCAAAGACA AGCATGAGAT CGACCGCATG ACGCTGACGA TGGCCCGTGGA GCTGCCCGAC TCCTTCTCCC CTGAACTACG
           ACCAAAGACA ACCATGACAT COACCOCATG ACCTIONACIA TO TO THE CONTROLL TO THE CONTROL
           TCAGGAGCTC TACCGCAACT TCCCCCTCAC CATCTCGGAG CGGTGGCAGC AGGAGGTGGC AGAGACTGTC TTCGACACCA TCAACGCTGA GACAGACCGG CTGGAGGCTC GCAAGAAAGC CAAGAACAAG CAGCTGGGCC ATGAGGAAGA CTACGCCCTG
            GGCAAGGACT GCATCATGCA TGGCTACATG TCCAAGATGG GCAACCCCTT CCTGACCCAG TGGCAGCGGC GGTACTTCTA
           CCTGTTCCCC AACCGCCTCG AGTGGCGGGG CGAGGGCGAG GCCCCGCAGA GCCTGCTGAC CATGGAGGAG ATCCAGTCGG
TGGAGGAGAC GCAGATCAAG GAGCGCAAGT GCCTGCTCCT CAAGATCCGC GGTGGGAAAC AGTTCATTTT GCAGTGCGAT
            AGCGACCCTG AGCTGGTGCA GTGGAAGAAG GAGCTGCGCG ACGCCTACCG CGAGGCCCAG CAGCTGGTGC AGCGGGTGCC
            CAAGATGAAG AACAAGCCGC GCTCGCCCGT GGTGGAGCTG AGCAAGGTGC CGCTGGTCCA GCGCGGCAGT GCCAACGGCC
            TCTGACCCGC CCACCCGCCT-3' (FRAG. NO:_) (SEQ ID NO:11797)
            CCR-2 CC Chemokine Receptor Nucleic Acids and Antisense Oligonucleotide Fragments
```

5'-CTTTGTGAAG AAGGAATTGG CAACACTGAA ACCTCCAGAA CAAAGGCTGT CACTAAGGTC CCGCTGCCTT GATGGATTAT

S'-CITTGIGAAG AAGGAATTGG CAACACTGAA ACCTCCAGAA CAAAGGCTGT CACTAAGGTC CCGCTGCTT GATGGATTAT
ACACTTGACC TCAGTGIGAC AACAGTGACC GACTACTACT ACCCTGATAT CTTCCAAGC CCCTGTGATG CGGAACTTAT
TCAGACAAAAT GGCAAGTTGC TCTTTGCTGT CTTTTATTGC CTCCTGTTTG TATTCAGTCT TCTGGGAACA AGCCTGGTCA
TCCTGGTCCT TGTGGTCTGC AAGAAGCTGA GGAGCATCAC AGATGTATAC CTCTTGAACC TGGCCCTGTC TGACCCTGCTT
TTTGTCTTCT CCTTCCCCTT TCAGACCTAC TATCTGCTGG ACCAGTGGGT GTTTGGGACT GTAATGTGCA AAGTGGTGTC
TGGCTTTTAT TACATTGGCT TCTACAGCAG CATGTTTTC ATCACCCTCA TGAGTGTGGA CAGGTACCTG GCTGTTGTCC
ATGCCGTGTA TGCCCTAAAG GTGAGGACGA TCAGGATGGG CACAACGCTG TGCCTGGCAG TATGGCTAAC CGCCATTATG
GCTACCATCC CATTGCTAGT GTTTTACCAA GTGGCCTCTG AAGATGGTGT TCTACAGTGT TATTCATTTT ACAATCAACA
GACTTTGAAG TGGAAGATCT TCACCAACT CAAAATGAAC ATTTAGGCT TGTTGATCC ATCACCACT TTTATGTTCT
GCTACATTAA AATCCTGCAC CAGCTGAAGA GGTGTCAAAA CCAACAAGA ACCAAGGCCA TCAGGTTGGT GCTCATTGGG
GTCATTGCAT CTTTACTTTT CTGGGTCCCA TCAACGTGG TTCTTTTCCT CACTTTCCTTG CACAGTTGGA
ACACTTTGGA GTCATTGCAT CTTTACTTTT CTGGGTCCCA TTCAACGTGG TTCTTTTCCT CACTTCCTTG CACAGTATGC ACATCTTGGA TGGATGTAGC ATAAGCCAAC AGCTGACTTA TGCCACCCAT GTCACAGAAA TCATTTCCTT TACTCACTGC TGTGTGAACC CTGTTATCTA TGCTTTTGTT GGGGAGAAGT TCAAGAAACA CCTCTCAGAA ATATTTCAGA AAAGTTGCAG CCAAATCTTC
AACTACCTAG GAAGACAAAT GCCTAGGGAG AGCTGTGAAA AGTCATCATC CTGCCAGCAG CACTCCTCCC GTTCCTCCAG
CGTAGACTAC ATTTTGTGAG GATCAATGAA GACTAAATAT AAAAAACATT TTCTTGAATG GCATGCTAGT AGCAGTGAGC AAAGGTGTGG GTGTGAAAGG TTTCCAAAAA AAGTTCAGCA TGAAGGATGC CGTGTGTGTT GTTGCCAACA CTTGGAACAC AATGACTGGA GACATAGTTG TGCATGCCTG GCACAACATC AAGCCTGTGA TTGTGTTTAT TGATGATGTT GAACAAGTGG
TGGCTTTGAG GGATTCTGTA TGCCAAGTGG AAAAAAAAGA TGTCTCCGGA ATTCGACAGG TTATCA-3' (FRAG. NO:_) (SEQ ID

CCR-4 CC Chemokine Receptor Nucleic Acids and Antisense Oligonucleotide Fragments

CCR-4 CC Chemokine Receptor Nucleic Acids and Antisense Oligonucleotide Fragments
5-tttcatctct CCGGGCTTAT TTGCTGGTTT CTCCGAATGC GGGCCTTGTC TGGTTCACGC TGGATCCCCA ACGCCTAGAA
CAGTGCGTGG CACGCAGTTC GTCCTTCTAT AAATACCGA CTAAAATGCAT CTCTGGATG GTAATACCCA CACGGTGTTG
TGAGAATGAA TGAGTGATTC TGTGCAAGTT CCTAGTGATC TGTTACAAAA AGTACTGGTC GCTAAATTAC TCTTATAATA
AAGCATACTT TTAGGATAAT AAAGCACTAT TCGCGAATTG GTTACCGCTA TTATGAAATT ACTGAGCAAT ACATATCTAC
ATCTGATCAG TCTCCAGAAT TATGCCAAAT CCTACCTTCT TCTGAAAGTA TCTCCTAATT ATCTGCACCT GACCCTAGTG
ATGCTGTGAA TGTGCAAGTA TAGCTACATC CTCCGAAGGA AGGATCTTTA CTCCTTATAC CTCCTGAATG GGCTGCGTCT
GCTGAAAGCG CGGGGGAATG GGCGGTTGGA AGCTTGGCCC TACTTCCAGC ATTGCCGCCT ACTGGTTGGG TTACTCCAGC
AAGTCACTCC CCTTCCCTGG GCCTCAGTGT CTCTACTGTA GCATTCCCAG GTCTGGAATT CCATCCACTT TAGCAAGGAT
GGACGCGCCA CAGAGAGACG CGTTCCTAGC CCGCGCTTCC CACCTGTCTT CAGGCGCATC CCGCTTCCCCA
GAAATGCCTCT GGGAGGTCCT GTCCGGCCC GGACTCACTA CCGACCACCC GCAAACAGCA GGGTCCCCTG GGCTTCCCAA
GCCGCGCACC TCTCCCGCCC GCCCCTGCGC CCTCCTTCCTC CACCCGCCTT CTCCCCCCC GCCGCGCACC TCTCCGCCCC GCCCCTGCGC CCTCCTTCCT CGCGTCTGCC CCTCTCCCCC ACCCCGCCTT CTCCCTCCCCC GCCCCAGCGG CGCATGCGCC GCGCTCGGAG CGTGTTTTTA TAAAAGTCCG GCCGCGGCCA GAAACTTCAG TTTGTTGGCT GCGGCAGCAG GTAGCAAAGT GACGCCGAGG GCCTGAGTGC TCCAGTAGCC ACCGCATCTG GAGAACCAGC GGTTACCATG GCGGCAGCAG GTAGCAAAGT GACGCCGAGG GCCTGAGTGC TCCAGTAGCC ACCGCATCTG GAGAACCAGC GGTTACCATG
GAGGGGATCA GTGTAAGTCC AGTTTCAACC TGCTTTGTCA TAAATGTACA AACGTTTGAA CTTAGAGCGC AGCCCCTCTC
CGAGCGGGCA GAAGCGGCCA GGACATTGGA GGTACCCGTA CTCCAAAAAA GGGTCACCGA AAGGAGTTTT CTTGACCATG
CCTATATAGG GCGGGGGGG GCGGGGGGG CAGGATTGGA ATCTTTTTTCT CTGTGAGTCG AGGAGAAACG ACTGGAAAGA
GCGTTCCAGT GGCTGCATGT GTCTCCCCCT TGAGTCCCGC CGCGCGCGC GGCTTGCACG CTGTTTGCAA ACGTAAGAAC
ATTCTGTGCA CAAGTGCAGA GAAGGCGTGC GCGCTGCCTC GGGACTCAGA CCACCGGTCT CTTCCTTGGG GAAGCGGGGA
TGTCTTGGAG CGAGTTACAT TGTCTGAATT TAGAGGCGGA GGGCGCGTG CCTGGGCTGA CTTCCCAGGA GGAGATTGCG
CCCGCTTTAA CTTCGGGGTT AAGCGCCTGG TGACTGTTCT TGACACTGGG TGCGTGTTTG TTAAACTCTG TGCGGCCGAC

GGAGCTGTGC CAGTCTCCCA GCACAGTAGG CAGAGGGCGG GAGAGGCGGG TGGACCCACC GCGCCGATCC TCTGAGGGGA TCGAGTGGTG GCAGCAGCTA GGAGTTGATC CGCCCGCGCG CTTTGGGTTT GAGGGGGAAA CCTTCCCGCC GTCCGAAGCG CGCCTCTTCC CCACGGCCGC GAGTGGGTCC TGCAGTTCGA GAGTTTGGGG TCGTGCAGAG GTCAGCGGAG TGGTTTGACC TCCCCTTTGA CACCGCGCAG CTGCCAGCCC TGAGATTTGC GCTCCGGGGA TAGGAGCGGG TACGGGGTGA GGGGCGGGGG CGGTTAAGAC CGCACTGGG CTGCCAGGTC GCCGCCGCA AGACTGGCAG GTGCAAGTGG GGAAACCGTT TGGCTCTCC CGAGTCCAGT TGTGTATGTT AACCGTCGGT GGTTTCCAGA AACCTTTTGA AACCCTCTTG CTAGGGAGTT TTTGGTTTCC TGCAGCGGCG CGCAATTCAA AGACGCTCGC GGCGGAGCCG CCCAGTCGCT CCCCAGCACC CTGTGGGACA GAGCCTGGCG TGTCGCCCAG CGGAGCCCT GCAGCGCTGC TTGCGGGCGG TTGGCGTGGG TGTAGTGGGC AGCCGCGGGG GCCCGGGGCT GGACGACCCG GCCCCCGCG TGCCCACCGC CTGGAGGCTT CCAGCTGCCC ACCTCCGGCC GGGTTAACTG GATCAGTGGC GGGGTAATGG GAAGCCACCC GGGAGAGTGA GGAAATGAAA CTTGGGGCGA GGACCACGGG TGCAGACCCC GTTACCTTCT 10 CCACCCAGGA AAATGCCCCG CTCCCTAACG TCCCAAACGC GCCAAGTGAT AAACACGAGG ATGGCAAGAG ACCCACACAC CGGAGGAGCG CCCGCTTGGG GGAGGAGGTG CCGTTTGTTC ATTTTCTGAC ACTCCCGCCC AATATACCCC AAGCACCGAA GGGCCTTCGT TTTAAGACCG CATTCTCTTT ACCCACTACA AGTTGCTTGA AGCCCAGAAT GGTTTGTATT TAGGCAGGCG TGGGAAAATT AAGTTTTTGC GCTTTAGGAG AATGAGTCTT TGCAACGCCC CCGCCCTCCC CCCGTGATCC TCCCTTCTCC CCTCTTCCCT CCCTGGGCGA AAAACTTCTT ACAAAAAGTT AATCACTGCC CCTCCTAGCA GCACCCACCC CACCCCCCAC GCCGCCTGGG AGTGGCCTCT TTGTGTGTAT TTTTTTTTC CTCCTAAGGA AGGTTTTTTT TCTTCCCTCT AGTGGGCGGG GCAGAGGAGT TAGCCAAGAT GTGACTTTGA AACCCTCAGC GTCTCAGTGC CCTTTTGTTC TAAACAAAGA ATTTTGTAAT TGGTTCTACC AAAGAAGGAT ATAATGAAGT CACTATGGGA AAAGATGGGG AGGAGAGTTG TAGGATTCTA CATTAATTCT CTTGTGCCCT TAGCCCACTA CTTCAGAATT TCCTGAAGAA AGCAAGCCTG AATTGGTTTT TTAAATTGCT TTAAAAAATTT TTTTTAACTG GGTTAATGCT TGCTGAATTG GAAGTGAATG TCCATTCCTT TGCCTCTTTT GCAGATATAC ACTTCAGATA 20 ACTACACCGA GGAAATGGGC TCAGGGGACT ATGACTCCAT GAAGGAACCC TGTTTCCGTG AAGAAAATGC TAATTTCAAT AAAATCTTCC TGCCCACCAT CTACTCCATC ATCTTCTTAA CTGGCATTGT GGGCAATGGA TTGGTCATCC TGGTCATGGG TTACCAGAAG AAACTGAGAA GCATGACGGA CAAGTACAGG CTGCACCTGT CAGTGGCCGA CCTCCTCTTT GTCATCACGC TTCCCTTCTG GGCAGTTGAT GCCGTGGCAA ACTGGTACTT TGGGAACTTC CTATGCAAGG CAGTCCATGT CATCTACACA
GTCAACCTCT ACAGCAGTGT CCTCATCCTG GCCTTCATCA GTCTGGACCG CTACCTGGCC ATCGTCCACG CCACCAACAG TCAGAGGCCA AGGAAGCTGT TGGCTGAAAA GGTGGTCTAT GTTGGCGTCT GGATCCTGC CCTCCTGCTG ACTATTCCCG
ACTTCATCTT TGCCAACGTC AGTGAGGCAG ATGACAGATA TATCTGTGAC CGCTTCTACC CCAATGACTT GTGGTGGTT
GTGTTCCAGT TTCAGCACAT CATGGTTGGC CTTATCCTGC CTGGTATTGT CATCCTGTCC TGCTATTGCA TTATCATCTC
CAAGCTGTCA CACTCCAAGG GCCACCAGAA GCGCAAGGCC CTCAAGACCA CAGTCATCCT CATCCTGGCT TTCTTCGCCT
GTTGGCTGCC TTACTACATT GGGATCAGCA TCGACTCCTT CATCCTCTG GAAATCATCA AGCAAGGGTG TGAGTTTGAG 30 AACACTGTGC ACAAGTGGAT TTCCATCACC GAGGCCCTAG CTTTCTTCCA CTGTTGTCTG AACCCCATCC TCTATGCTTT CCTTGGAGCC AAATTTAAAA CCTCTGCCCA GCACGCACTC ACCTCTGTGA GCAGAGGGTC CAGCCTCAAG ATCCTCTCCA AAGGAAAGCG AGGTGGACAT TCATCTGTTT CCACTGAGTC TGAGTCTTCA AGTTTTCACT CCAGCTAACA CAGATGTAAA AAGGAAAGCG AGGTGGACAT TCATCTGTTT CCACTGAGTC TGAGTCTTCA AGTTTTCACT CCAGCTAACA CAGAIGTAAA AGACTTTTT TTATACGATA AATAACTTTT TTTTAAGTTA CACATTTTTC AGATATAAAA GACTGACCAA TATTGTACAG TTTTTTATTGC TTGTTGGATT TTTGTCTTGT GTTTCTTTAG TTTTTGTGAA GTTTAATTGA CTTATTTATA TAAATTTTTT TTGTTTCATA TTGATGTGTG TCTAGGCAGG ACCTGTGGCC AAGTTCTTAG TTGCTGTATG TCTCGTGGTA GGACTGTAGA AAAGGGAACT GAACATTCCA GAGCGTGTAG TGAATCACGT AAAGCTAGAA ATGATCCCCA GCTGTTATAG CCAAAGCCCCA CCTCTCATCA CCAAGACCG TTTTTCCTGT TCTTAAAGACG TGATTTTGC AGGACCTACA CTCTAAAGTC TTGTAAAGCCCAA AAGTGGTATA GAAATGCTGG TTTTTCAGTT TTCAGGAGTG GGTTGATTTC AGCACCTACA GTGTACAGTC TTGTATTAAG
TTGTTAATAA AAGTACATGT TAAACTTACT TAGTGTTATG TTCTGATTTC TGTTGACATT CTTTTGGCTA GTAGAAGACA
AAAGTAATAC ATTTATGGTA TGCAAAGCAC TATCCTAGGT ATTTCATTGT AATATTTTAC TTACCCCTTA TCACAACTCT GATAGATTCT GCTTCTGTTA CTAATTACAT TITATAGAAG AGGAAACGGA GGCACAGAAA GCCTAAGTAA CTTGGTTAAA GGCATGTAGT AAGTATCAAA TCCTGTATTT TAAACCAGGT AACATGACTT AACGAATCTG AAGCCTTCAC CACTTTAAAT TCAAATGGAA GTTTAGAAAT GGCCAGCCAG CACCTATTTG TATGAAAGGT CATCTTTCAG AGGATAAGCA TGTATAAAGA 45 AGAAAAGGTA TGCAGTCGTG TTTGGATTTT ACTCCACCAT C-3' (FRAG. NO:_) (SEQ ID NO:11832) CD-34 Nucleic Acids and Antisense Oligonucleotide Fragments 5'-AGGATGATGG TGATGGGGAA CTAAATGGGG AAATATGGAA GGTCACAGGA AAAGTTAACA CAAGTTAGCA AAAGTTAAC AATGAATACT TATAGTCACG TATACCTGCT CACTCCTGAC GCTTCACTCA CACACAGCAC AGGATCTGGT GAGGCTATCA TAAATGTGC CACATTGTGG TTAAGTTTTA CCTGATTAAC GAAATGCTCA CACTTCTAAA CTGAGGTCCT TACAGTAGAT TCCTTTTGCA AGATTGTTAC TGGCTTACAA CTTAAAAATA AAGGAAAATC ACAAGGAAAG AAAAGTGGGG AAAAAATCGG AGGAAACTTG CCCTGCCCT GGCCACCGGC AAGGCTGCCA CAAAGGGGTT AAAAGTTAAG TGGAAGTGGA GCTTGAAGAA GTGGGATGGG GCCTCTCCAG GAAAGCTGAA CGAGGCATCT GGAGCCCGAA CAAACCTCCA CCTTTTTTGG CCTCGACGGC GGCAACCCAG CCTCCCTCCT AACGCCCTCC GCCTTTGGGA CCAACCAGGG GAGCTCAAGT TAGTAGCAGC CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGAG GAAAAAAGCA AGAATCCCCC ACCCCTCTCC CGGGCGGAGG GGGCGGGAAG AGCGCGTCCT GGCCAAGCCG AGTAGTGTCT TCCACTCGGT GCGTCTCTCT AGGAGCCGCG CGGGAAGGAT GCTGGTCCGC AGGGCCGCG GCGCAGGGCC CAGGATGCCG CGGGGCTGGA CCGCGCTTTG CTTGCTGAGT TTGCTGC CCTTTTTTGG CCTCGACGGC GGCAACCCAG CCTCCCTCCT AACGCCCTCC GCCTTTGGGA CCAACCAGGG GAGCTCAAGT TAGTAGCAGC CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGAG GAAAAAAGCA AGAATCCCCC ACCCCTCTCC CGGGCGGAGG GGGCGGGAAG AGCGCGTCCT GGCCAAGCCG AGTAGTGTCT TCCACTCGGT GCGTCTCTCT AGGAGCCGCG CGGGAAGGAT GCTGGTCCGC AGGGGCGCC GCGAGGGCCC AGGATGCCGC GGGGCTGGAC CGCGCTTTGC TTGCTGAGTT TGCTGCCTTC TGGGTTCATG AGTCTTGACA ACAACGGTAC TGCTACCCCA GAGTTACCTA CCCAGGGAAC ATTTTCAAAT GTTTCTACAA ATGTATCCTA CCAAGAAACT ACAACACCTA GTACCCTTGG AAGTACCAGC CTGCACCCTTG GGGCCTGGCC CGAGTGCTGT GTGGGGAGGA GCAGGCTGAT GCTGATGCTG GGGCCCAGGT ATGCTCCCTG CTCCTTGCCC AGTCTGAGGT GAGGCCTCAG TGTCTACTGC TGGTCTTGGC CAACAGAACA GAAATTTCCA GCAAACTCCA ACTTATGAAA AAGCACCAAT CTGACCTGAA AAAGCTGGGG ATCCTAGATT TCACTGAGCA AGATGTTGCA AGCCACCAGA GCTATTCCCA 70 AAAGACCCTG ATTGCACTGG TCACCTCGGG AGCCCTGCTG GCTGTCTTGG GCATCACTGG CTATTTCCTG ATGAATCGCC OCAGCTGGAG CCCCACAGGA GAAAGGCTGG GCGAAGACCC TTATTACACG GAAAACGGTG GAGGCCAGGG CTATAGCTCA GGACCTGGGA CCTCCCCTGA GGCTCAGGGA AAGGCCAGTG TGAACCGAGG GGCTCAGAAA AACGGGACCG GCCAGGCCAC CTCCAGAAAC GGCCATTCAG CAAGACAACA CGTGGTGGCT GATACCGAAT TGTGACTCGG CTAGGTGGGG CAAGGCTGGG

CAGTGTCCGA GAGAGCACCC CTCTCTGCAT CTGACCACGT GCTACCCCCA TGCTGGAGGT GACATCTCTT ACGCCCAACC CTTCCCCACT GCACACACT CAGAGGCTGT TCTTGGGGCC CTACACCTTG AGGAGGGGGC AGGTAAACTC CTGTCCTTTA CACATTCGGC TCCCTGGAGC CAGACTCTGG TCTTCTTTGG GTAAACGTGT GACGGGGGAA AGCCAAGGTC TGGAGAAGCT 10 TGGATCCTAG CCTTATCCTC TGATCTCCAT GGCTTCCTCC TCCCTCCTGC CGACTCCTGG GTTGAGCTGT TGCCTCAGTC CCCCAACAGA TGCTTTTCTG TCTCTGCCTC CCTCACCCTG AGCCCCTTCC TTGCTCTGCA CCCCCATATG GTCATAGCCC AGATCAGCTC CTAACCCTTA TCACCAGCTG CCTCTTCTGT GGGTGACCCA GGTCCTTGTT TGCTGTTGAT TTCTTTCCAG AGGGGTTGAG CAGGGATCCT GGTTTCAATG ACGGTTGGAA ATAGAAATTT CCAGAGAAAGA GAGTATTGGG TAGATATTTT TTCTGAATAC AAAGTGATGT GTTTAAATAC TGCAATTAAA GTGATACTGA AACAC-3' (FRAG.No:) (SEQ ID NO:11835) 5'-AGGATGATGG TGATGGGGAA CTAAATGGGG AAATATGGAA GGTCACAGGA AAAGTTAACA CAAGTTAGCA AAAAGTTAAC AATGAATACT TATAGTCACG TATACCTGCT CACTCCTGAC GCTTCACTCA CACACAGCAC AGGATCTGGT GAGGCTATCA CTAAATGTGC CACATTGTGG TTAAGTTTTA CCTGATTAAC GAAATGCTCA CACTTCTAAA CTGAGGTCCT TACAGTAGAT TCCTTTTGCA AGATTGTTAC TGGCTTACAA CTTAAAAATA AAGGAAAATC ACAAGGAAAG AAAAGTGGGG AAAAAATCGG AGGAAACTTG CCCCTGCCCT GGCCACCGGC AAGGCTGCCA CAAAGGGGTT AAAAGTTAAG TGGAAGTGGA GCTTGAAGAA GTGGGATGGG GCCTCTCCAG GAAAGCTGAA CGAGGCATCT GGAGCCCGAA CAAACCTCCA CCTTTTTTGG CCTCGACGGC GGCAACCCAG CCTCCCTCCT AACGCCCTCC GCCTTTGGGA CCAACCAGGG GAGCTCAAGT TAGTAGCAGC CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGAG GAAAAAAGCA AGAATCCCCC ACCCCTCTCC CGGGCGGAGG GGGCGGGAAG AGCGCGTCCT GGCCAAGCCG AGTAGTGTCT TCCACTCGGT GCGTCTCTCT AGGAGCCGCG CGGGAAGGAT GCTGGTCCGC AGGGGCGCGC GCGCAGGGCC CAGGATGCCG CGGGGCTGGA CCGCGCTTTG CTTGCTGAGT TTGCTGC-3' (FRAG. NO:) (SEQ ID NO:11833) 5'-CCTTTTTTGG CCTCGACGGC GGCAACCCAG CCTCCCTCCT AACGCCCTCC GCCTTTGGGA CCAACCAGGG GAGCTCAAGT TAGTAGCAGC CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGA GAAAAAAGCA AGAATCCCCC ACCCCTCTCC CGGGCGGAGG GGGCGGAAG AGCGCGTCCT GGCCAAGCCG AGTAGTGTCT TCCACTCGGT GCGTCTCTCT AGGAGCCGCG CGGGAAGGAT GCTGGTCCGC AGGGGCGCGC GCGAGGGCCC AGGATGCCGC GGGGCTGGAC CGCGCTTTGC TTGCTGAGTT TGCTGCCTTC TGGGTTCATG AGTCTTGACA ACAACGGTAC TGCTACCCCA GAGTTACCTA CCCAGGGAAC ATTTTCAAAT GTTTCTACAA ATGTATCCTA CCAAGAAACT ACAACACCTA GTACCCTTGG AAGTACCAGC CTGCACCCTG TOTCTCAACA TGGCAATGAG GCCACAACAA ACATCACAGA AACGACAGTC AAATTCACAT CTACCTCTGT GATAACCTCA
GTTTATGGAA ACACAAACTC TTCTGTCCAG TCACAGGAC CTGTAATCAG CACAGTGTTC ACCACCCCAG CCAACGTTTC
AACTCCAGAG ACAACCTTGA AGCCTAGCCT GTCACCTGGA AATGTTTCAG ACCTTTCAAC CACTAGCACT AGCCTTGCAA CATCTCCCAC TAAACCCTAT ACATCATCTT CTCCTATCCT AAGTGACATC AAGGCAGAAA TCAAATGTTC AGGCATCAGA
GAAGTGAAAT TGACTCAGGG CATCTGCCTG GAGCAAAATA AGACCTCCAG CTGTGCGGAG TTTAAGAAGG ACAGGGGAGA GGGCCTGGCC CGAGTGCTGT GTGGGGAGGA GCAGGCTGAT GCTGATGCTG GGGCCCAGGT ATGCTCCCTG CTCCTTGCCC AGTCTGAGGT GAGGCCTCAG TGTCTACTGC TGGTCTTGGC CAACAGAACA GAAATTTCCA GCAAACTCCA ACTTATGAAA AAGCACCAAT CTGACCTGAA AAAGCTGGGG ATCCTAGATT TCACTGAGCA AGATGTTGCA AGCCACCAGA GCTATTCCCA AAAGACCCTG ATTGCACTGG TCACCTCGGG AGCCCTGCTG GCTGTCTTGG GCATCACTGG CTATTTCCTG ATGAATCGCC
GCAGCTGGAG CCCCACAGGA GAAAGGCTGG GCGAAGACCC TTATTACACG GAAAACGGTG GAGGCCAGGG CTATAGCTCA GGACCTGGGA CCTCCCCTGA GGCTCAGGGA AAGGCCAGTG TGAACCGAGG GGCTCAGAAA AACGGGACCG GCCAGGCCAC TICTITCICT ACTITGAGGA AACCAAGTA ACCITTIGCA CCTGCTCTC TGTAATGATA TAGCCAGAAA AACGTGTTGC
CTTGAACCAC TICCTCATC TCTCCTCCAA GACATGTGG ACTTGGTCAC CAGCTCCTCC CTTGTTCTCT AACGTCAGG
GAGCTCCATG TGCCCCCTCT ACCATTIGCA GACATGGCA CAGTTTTCTG GCTGGAGCCT AGACAGGCC TCCCAAGTTT
TAGGACAAAC AGCTCAGTTC TAGTCTCTCT GGGGCCACAC AGAAACTCTT TTTGGGCTCC TTTTTCTCCC TCTGGATCAA
AGTAGGCAGG ACCATGGGAC CAGGTCTTGG AGCTGAGCCT CTCACCTGTA CTCTTCCGAA AAATCCTCTT CCTCTGAGGC
TGGATCCTAG CCTTATCCTC TGATCTCCAT GGCTTCCTCC TCCCTCCTGC CGACTCCTGG GTTGAGCTGT TGCCTCAGTC
CCCCAACAGA TGCTTTTCTG TCTCTGCCTC CCTCACCCTG AGCCCCTTCC TTGCTTTGCA CCCCCAATG GTCATAGCCC
AGATCAGCTC CTAACCCTTA TCACCAGCTG CCTCTCTCTTG GGTGACCCA GGTCCTTGTT TCCTGTGAT TTCTTCCAGA AACGCTTGTT TCCTGTTGAT TCCTGTAATG ACGGTTTGAATAC AAAGTGATGT GTTTAAATAC TGCAATAAA GTGATACTGA AACACA-34 GRACA No. 1/SEO ID NO.11834) TTCTGAATAC AAAGTGATGT GTTTAAATAC TGCAATTAAA GTGATACTGA AACAC-3' (FRAG. No:) (SEQ ID NO:11834) **Eotaxin Antisense Nucleic Acids and Oligonucleotide Fragments** 5-GCATTITITC AAGITTTATG ATTTATTTAA CTTGTGGAAC AAAAATAAAC CAGAAACCAC CACCTCCAC GCCAAAGCTC ACACCTTCAG CCTCCAACAT GAAGGTCTCC GCAGCACTTC TGTGGCTGCT GCTCATAGCA GCTGCCTTCA GCCCCAGGG ACACCTICAG CCICCAACAT GAAGGTCICC GCAGCACTIC TIGGCTGCT GCTCATAGCA GCTGCCTICA GCCCCCAGGG GCTCGCTGGG CCAGCTTCTG TCCCAACACAC CTGCTGCTTT AACCTGGCCA ATAGGAAGAT ACCCCTTCAG CGACTAGAGA GCTACAGGAG AATCACCAGT GGCAAATGTC CCCAGAAAGC TGTGATCTTC AAGACCAAAC TGGCCAAGGA TATCTGTGCC GACCCCAAGA AGAAGTGGGT GCAGGATTCC ATGAAGTATC TGGACCAAAA ATCTCCAACT CCAAAGCCAT AAATAATCAC CATTTTTGAA ACCAAACCAG AGCCTGAGTG TTGCCTAATT TGTTTTCCT TCTTACAATG CATTCTGAGG TAACCTCATT ACCATCAAAAAAC GTATTGCAATT TAATATATATA TATTTTTTTTA AAAAAAAAAC GTATTGCATT TAATTTATTA GGAATAC ATGAAGGTCT CCGCAGCACT TCTGTGGCTG CTGCTCATAG CAGCTGCCTT CAGCCCCCAG GGGCTCGCTG
GGCCAGCTTC TGTCCCAACC ACCTGCTGCT TTAACCTGGC CAATAGGAAG ATACCCCTTC AGCGACTAGA GAGCTACAGG AGAATCACCA GTGGCAAATG TCCCCAGAAA GCTGTGATCT TCAAGACCAA ACTGGCCAAG GATATCTGTG CCGACCCCAA 75 GAAGAAGTGG GTGCAGGATT CCATGAAGTA TCTGGACCAA AAATCTCCAA CTCCAAAGCC ATAA CCACATATTC

```
CCCTCCTTTT CCAAGGCAAG ATCCAGATGG ATTAAAAAAT GTACCAAGTC CCTCCTACTA GCTTGCCTCT CTTCTGTTCT
         GCTTGACTTC CTAGGATCTG GAATCTGGTC AGCAATCAGG AATCCCTTCA TCGTGACCCC CGCATGGGCA AAGGCTTCCC
         TGGAATCTCC CACACTGTCT GCTCCCTATA AAAGGCAGGC AGATGGGCCA GAGGAGCAGA GAGGCTGAGA CCAACCCAGA
         AACCACCACC TCTCACGCCA AAGCTCACAC CTTCAGCCTC CAACATGAAG GTCTCCGCAG CACTTCTGTG GCTGCTGCTC
        ATAGCAGCIG CCTTCAGCCC CCAGGGGCTC GCTGGGCCAG GTAAGCCCC CAACTCCTTA CAGGAAAGGT AAGGTAACCA
CCTCCAGGCT ACTAGGTCAG CAAGAATCTT TACAGACTCA CTGCAAATTC TCCATTTGAA AAATAGGGAA ACAGGTTTTG
TGGGTGGACA AGAAATGCCT CAACCGTCAC ATCCAGTCAC TGGAAGAGCC AGAACTAGAA AGCTCCCGAG TCTTTTCCCC
ACATTCAAGA GGGCCGCTGG GTGCATCCTT ACCCAGCTAT CCTTACAGTG TTTGGGAATG GGGAATGGCT CTGTCTTACT
GTGGGCATGG TGGGCATTT TGGCAGTGGG AGAGAAGGAA AATCTGTTGA TTAGAAGCTC AGTATGTTAA TTCGACTCCA
        GGACAGCTTT CAGAGACAGT GGCTAAGAGA AGAACGAGGT CCCAGGGGAT CTCTTGAGGT GACTTATTTT GACACTCTTT GGGAAAGTTA TCTAGGAGAT TTGTTCCATA ACTCATTTC CCATACTCTG GTGACAAATT TACTGAGTGT ATCGGTCCCA CTGAGCCAGT GCATAGCATG GTAACAAACA GTTCTAAATT ATCAATGACT TAACAGAATT AACTAAATTA ACAAAAGTTA
         CTITCTCACT TGTACTAAAT ATCTATAATG TATGGGCTCA GGCTTCTGCA TTTTATACTC AGGATTCTAG ACTGATGGAG AAGTTGCCAT GTGGGGGAAC ATTGATGGAT ACTGTGATAA AGCAGAAGAA AGCTCTCAGG AGTCTTGCAT AGGCAATGCA
        AGTIGOCAT GIGGGGGAAC ATTGATGAT ACIGIGATIAA AGCAGAAGAA AGCICICAGG AGTCTIGAAT AGGCAACAAA CTGTGGCTCA AAAATAAACAC CCATCACTTT GTCTCCTTCT TTATTGATCA AAACTAATTA ATGCCTCCAA CCAAACAAAA AGGGCCAAGA AATGCAAGTC TACCTTGTGT CTCAAAACAG AGGATGGAGA ATATTTGGTG AAAATTACCA TGACCATCAC ATGGCCACGT AGGTCTTTAT AATGACAGAG CTAGCATTTG TCACATTGAC CAAGCTTTGT CCATACACTC TACAGTAATG ATGAGTCCTC AGTGCACAGG GGAGGATGCT GAAGACACAG GACAGCATCC TCCAGACACA TAAGACTTCA GAGCAGAGGG ATTCTCCCTC CACCTCTCGC AATTCCTTGC TTTCTCCTAA CTTCCTTTAC AAAGTCATGC TTGGAAATGT CTATGTATCA TCATGTGGCT CATTTTTTTC TCTGTTCATT TTTTTTCCCC AAAATTCAGC TTCTGTCCCA ACCACCTGCT GCTTTAACCT GGCCAATAGG AAGAATACCCC TTCAGCGACT AGGAGGCTAC AGGAGGATCA CCAGTGGCAA ATGTCCCCAG AAGACTTGG GCCCAATAGG AAGAACTGTG GCCCCCTCAG ACCACCTGCT GCCTGGGAGAAACTAATTGACAAGTGA GTCTCAATAG TTTGACCTCT ATGGTCCAAT TCATTAATTT
15
20
        GGAGCCCCAA TTCGATCCC TGTCACGTGT GGGCAATGTT CCCCCTCTCC TCTCTTCCTC CCTGGAATCT TGTAAAGGTC CTGGCAAAGA TGATCAGTAT GAAAATGTCA TTGTTCTTGT GAACCCAAAG TGTGACTCAT TAAATGGAAG TAATGTTGTT TTAGGAATAC ATAAAGTATG TGCATATTTT ATTATAGTCA CTAGTTGTAA TTTTTTTGTG GGAAATCCAC ACTGAGCTGA
         GGGGG-3' (FRAG.NO:_) (SEQ ID NO:11863)
         5'-GCATTTTTC AAGTTTTATG ATTTATTAA CTTGTGGAAC AAAAATAAAC CAGAAACCAC CACCTCTCAC GCCAAAGCTC
         ACACCTTCAG CCTCCAACAT GAAGGTCTCC GCAGCACTTC TGTGGCTGCT GCTCATAGCA GCTGCCTTCA GCCCCCAGGG
        GGAATAC-3' (FRAG.NO: ) (SEQ ID NO:11860)
         5'-ATGAAGGTCT CCGCAGCACT TCTGTGGCTG CTGCTCATAG CAGCTGCCTT CAGCCCCCAG GGGCTCGCTG GGCCAGCTTC
         TGTCCCAACC ACCTGCTGCT TTAACCTGGC CAATAGGAAG ATACCCCTTC AGCGACTAGA GAGCTACAGG AGAATCACCA
         GTGGCAAATG TCCCCAGAAA GCTGTGATCT TCAAGACCAA ACTGGCCAAG GATATCTGTG CCGACCCCAA GAAGAAGTGG
         GTGCAGGATT CCATGAAGTA TCTGGACCAA AAATCTCCAA CTCCAAAGCC ATAA-3' (FRAG. NO:_) (SEQ ID NO:11861)
         5'-CCACATATTC CCCTCCTTTT CCAAGGCAAG ATCCAGATGG ATTAAAAAAT GTACCAAGTC CCTCCTACTA GCTTGCCTCT
         CTTCTGTTCT GCTTGACTTC CTAGGATCTG GAATCTGGTC AGCAATCAGG AATCCCTTCA TCGTGACCCC CGCATGGGCA
         AAGGCTTCCC TGGAATCTCC CACACTGTCT GCTCCCTATA AAAGGCAGGC AGATGGGCCA GAGGAGCAGA GAGGCTGAGA
          CCAACCCAGA AACCACCACC TCTCACGCCA AAGCTCACAC CTTCAGCCTC CAACATGAAG GTCTCCGCAG CACTTCTGTG
         GCTGCTGCTC ATAGCAGCTG CCTTCAGCCC CCAGGGGCTC GCTGGGCCAG GTAAGCCCCC CAACTCCTTA CAGGAAAGGT
         AAGGTAACCA CCTCCAGGCT ACTAGGTCAG CAAGAATCTT TACAGACTCA CTGCAAATTC TCCATTTGAA AAATAGGGAA ACAGGTTTTG TGGGTGGACA AGAAATGCCT CAACCGTCAC ATCCAGTCAC TGGAAGAGCC AGAACTAGAA AGCTCCCCGAG
         TCTTTTCCCC ACATTCAAGA GGGCCGCTGG GTGCATCCTT ACCCAGCTAT CCTTACAGTG TTTGGGAATG GGGAATGGCT
         CTGTCTTACT GTGGGCATGG TGGGCATTTT TGGCAGTGGG AGAGAAGGAA AATCTGTTGA TTAGAAGCTC AGTATGTTAA
TTCGACTCCA GGACAGCTTT CAGAGACAGT GGCTAAGAGA AGAACGAGGT CCCAGGGGAT CTCTTGAGGT GACTTATTTT
        GCAACCACT COCACAGGA COCACAGGA COCACAGGA AGAACCAGGA CCCAGGGGA CICITOAGG GACHATHI
GACACTCCTTT GGGAAGTTA TCTAGGAGAT TTGTTCCATA ACTCATTTTC CCATACTCTG GTGACAAATT TACTGAGTGT
ATCGGTCCCA CTGAGCCAGT GCATAGCATG GTAACAAACA GTTCTAAATT ATCAATGACT TAACAGAATT AACTAAATTA
ACAAAAGTTA CITTCTCACT TGTACTAAAT ATCTATAATG TATGGGGTCA GGCTTCTGCA TTTTATACTC AGGATTCTAG
ACTOATGGAO AAGTTGCCAT GTGGGGGAAC ATTGATGGAT ACTGTGATAA AGCAGAAGAA AGCTCTCAGG AGTCTTGCAT
AGGCAATGCA CTGTGGCTCA AAAATGACAC CCATCACTTT GTCTCCTTCT TTATTGATCA AAACTAATTA ATGCCTCCAA
CCAAACAAAA GTGGCCAAGA AATGCAAGTC TACCTTGTGT CTCAAAACAG AGGATGGAGA ATATTTGGTG AAAATTACCC
CCAAACAAAA GTGGCCAAGA AATGCAAGTC TACCTTGTGT CTCAAAACAG AGGATGGAGA ATATTTGGTG AAAATTACCCC
         TGACCATCAC ATGGCCACGT AGGTCTTTAT AATGACAGAG CTAGCATTTG TCACATTGAC CAAGCTTTGT CCATACACTC TACAGTAATG ATGAGTCCTC AGTGCACAGG GGAGGATGCT GAAGACACAG GACAGCATCC TCCAGACACA TAAGACTTCA
        GAGCAGAGGG ATTCTCCCTC CACCTCTCGC AATTCCTTGC TTTCTCCTAA CTTCCTTTAC AAAGTCATGC TTGGAAATGT CTATGTATCA TCATGTGGCT CATTTTTTTC TCTGTTCATT TTTTTTCCCC AAAATTCAGC TTCTGTCCCA ACCACCTGCT GCTTTAACCT GGCCAATAGG AAGATACCCC TTCAGCGACT AGAGAGCTAC AGGAGAATCA CCAGTGGCAA ATGTCCCCAG
        AAAGCTGTGA TGTAAGTAAA TAAAGTTCAC CCTCCCCTAG ACAAAAAAAT AATGTCTAGG GCACAGAGTC AAGAACTGTG
GGAGTCATAG ACTCTGATAG TTTGACCTCT ATGGTCCAAT TCATTAATTT TCACAAGTGA GTGTTCACCC CCAGCTCCCT
GCCTGGGAGA TTGCTGTAGT CATATCAATT TCTTCAAGTC AAGAGCAAAG ATGGTTTTAC TGGGCCTTTA AGAGCAGCAA
CTAACCCAAG AGTCTCATCC TTCCTCCTCT CCGTAGCAAC CCTTTGTCCA GGGGCAGATG GTCCTTAAAT ATTTAGGGTC
AAATGGGCAG AATTTTCAAA AACAATCCTT CCCAATTGCAT CCTGATTCTC CCCACAGCTT CAAGACCAAA CTGGCCAAGG
75
```

ATATCTGTGC CGACCCCAAG AAGAAGTGGG TGCAGGATTC CATGAAGTAT CTGGACCAAA AATCTCCAAC TCCAAAGCCA

```
TAAATAATCA CCATTITIGA AACCAAACCA GAGCCTGAGT GTTGCCTAAT TTGTTTTCCC TTCTTACAAT GCATTCTGAG
      TGTAAAGGTC CTGGCAAAGA TGATCAGTAT GAAAATGTCA TTGTTCTTGT GAACCCAAAG TGTGACTCAT TAAATGGAAG
TAATGTTGTT TTAGGAATAC ATAAAGTATG TGCATATTTT ATTATAGTCA CTAGTTGTAA TTTTTTTTGTG GGAAATCCAC
      ACTGAGCTGA GGGGG-3' (FRAG.NO:_) (SEQ ID NO:11862)
      FK-506 Binding Protein Nucleic Acids and Oligonucleotide Fragments
      5'- GCCAGGTCGC TGTTGGTCCA CGCCGCCGT CGCGCCGCC GCCCGCTCAG CGTCCGCCGC CGCCATGGGA GGCCGAGCC
      GAGCCGGGGT CGGGCAGCAG CAGGGACCCC CCAGAGGCGG GGCCTGTGGG ACCGCTATGG GCGTGGAGAT CGAGACCATC
      TCCCCGGAG ACGGAAGGAC ATTCCCCAAG AAGGGCCAAA CGTGTGTGGT GCACTACACA GGAATGCTCC AAAATGGGAA
      GAAGTTTGAT TCATCCAGAG ACAGAAACAA ACCTTTCAAG TTCAGAATTG GCAAACAGGA AGTCATCAAA GGTTTTGAAG AGGGTGCAGC CCAGATGAGC TTGGGGCAGA GGGCGAAGCT GACCTGCACC CCTGATGTGG CATATGGAGC CACGGGCCAC
      AGGGGCAGC CCAGATGAGC TIGGGGCAGA GGGCGAAGCT GACCTGCACC CCTGATGTGG CATATGGAGC CACGGGCCAC CCCGGTGTCA TCCCTCCCAA TGCCACCCT ATCTTTGACG TGGAGCTGCT CAACTTAGAG TGAAGGCAGG AAGGAACTCA AGGTGGCTGG AGATGGCTGC TGCTCACCCT CCTAGCCTGC TCCCCACTG GGACGGCTCC TGCTTTTGGG GCTCTTGATC AGTGTGCTAA CCTCACTGCC TCATGGCATC ATCCATTCTC TCTGCCCAAG TTGCTCTGTA TGTGTTCGTC AGTGTTCATG TCCTGATGA CATCAGAAGCA ATCTCTTGTT CGCACAATCA ACACTGCCTT ACACTGCCTT ACACTGCCTT ACACTACCACCA TTACCCTTTACATTC TCTCACTTATA
      TCAGACATGA AATGTACATG GCGTACCGTA CACAGAGGGA CTTGAGCCAG TTACCTTTGC TGTCACTTC TCTCTTATAA
20
      ATTCTGTTAG CTGCTCACTT AAACAATGTC CTCTTTGAGA AAATGTAAAA TAAAGGCTCT GTGCTTGACA GAATTCGGGC
      CGCCGCAGG TCGCTGTTGG TCCACGCCGC CCGTCGCGCC GCCCGCCCGC TCAGCGTCCG CCGCCGCCAT GGGAGTGCAG
      GTGGAAACCA TCTCCCCAGG AGACGGCGC ACCTTCCCCA AGCGCGGCCA GACCTGCGTG GTGCACTACA CCGGGATGCT
      TGAAGATGGA AAGAAATTTG ATTCCTCCCG GGACAGAAAC AAGCCCTTTA AGTTTATGCT AGGCAAGCAG GAGGTGATCC
      GAGGCTGGGA AGAAGGGGTT GCCCAGATGA GTGTGGGTCA GAGAGCCAAA CTGACTATAT CTCCAGATTA TGCCTATGGT
      GCCACTGGGC ACCCAGGCAT CATCCCACCA CATGCCACTC TCGTCTTCGA TGTGGAGCTT CTAAAACTGG AATGACAGGA ATGGCCTCCT CCCTTAGCTC CCTGTTCTTG GATCTGCCAT GGAGGGATCT GGTGCCTCCA GACATGTGCA CATGAGTCCA
      AAGTATTAAC AGCACAAGTG GTAGGTTAAC ATTAGAATAG GAATTGGTGT TGGGGGGGGG GTTTGCAAGA ATATTTTATT
      35
      TCATCCTGT GGITTTICTA ATGACTTTC AGGACTTTC AGGACTTTCATA ACTTTCCAAG CTCCACCACT TCCTAAATCT
TAAGAACTT AATTGACAGT TICAATTGAA GGTGCTGTTT GTAGACTTTAA CACCCAGTGA AAGCCCAGCC ATCATGACAA
ATCCTTGAAT GTTCCTTAA GAAAATGATG CTGGTCATCG CAGCTTCAGC ATCTCCTGTT TTTTGATGCT TGGCTCCCTC
TGCTGATCTC AGTTTCCTGC CTCAGCCCCT TCTCACCCCT TTGCTGTCCT GTGTAGTGAT TTGGTGAGAA
ATCCTTGCTG CACCCTTCCC CCAGCACCAT TTATGAGTCT CAAGTTTTAT TATTGCAATA AAAGTGCTTT ATGCCCGAAT TC
      GCCGCCGCA TGGGAGTGCA GGTGGAAACC ATCTCCCCAG GAGACGGGCG CACCTTCCCC AAGCGCGGCC AGACCTGCGT
      GGTGCACTAC ACCGGGATGC TTGAAGATGG AAAGAAATTT GATTCCTCCC GGGACAGAAA CAAGCCCTTT AAGTTTATGC TAGGCAAGCA GGAGGTGATC CGAGGCTGGG AAGAAGGGGT TGCCCAGATG AGTGTGGGTC AGAGAGCCAA ACTGACTATA
      TCTCCAGATT ATGCCTATGG TGCCACTGGG CACCCAGGCA TCATCCCACC ACATGCCACT CTCGTCTTCG ATGTGGAGCT TCTAAAACTG GAATGACAGG AATGGCCTCC TCCCTTAGCT CCCTGTTCTT GGATCTGCCR TGGAGGGATC TGGTGCCTCC AGACATGTGC ACATGARTCC ATATGGAGCT TTTCCTGATG TTCCACTCCA CTTTGTATAG ACATCTGCCC TGACTGAATG TGTTCTGTCA CTCAGCTTTG CTTCCGACAC CTCTGTTTCC TCTTCCCCTT TCTCCTCGTA TGTGTGTTTA CCTAAACTAT
      ATGCCATAAA CCTCAAGTTA TTCA-3' (FRAG.NO: ) (SEQ ID NO:11868)
5'- GCCAGGTCGC TGTTGGTCCA CGCCGCCCGT CGCGCCGCCC GCCCGCTCAG CGTCCGCCGC CGCCATGGGA-3' (FRAG.
      No: )(SEQ ID NO:11864)
      5'-GGCCGGAGCC GAGCCGGGGT CGGGCAGCAG CAGGGACCCC CCAGAGGCGG GGCCTGTGGG CCGCTATGG GCGTGGAGAT
      CGAGACCATC TCCCCCGGAG ACGGAAGGAC ATTCCCCAAG AAGGGCCAAA CGTGTGTGGT GCACTACACA GGAATGCTCC
      AAAATGGGAA GAAGTTTGAT TCATCCAGAG ACAGAAACAA ACCTTTCAAG TTCAGAATTG GCAAACAGGA AGTCATCAAA GGTTTTGAAG AGGGTGCAGC CCAGATGAGC TTGGGGCAGA GGGCGAAGCT GACCTGCACC CCTGATGTGG CATATGGAGC
      CACGGGCCAC CCCGGTGTCA TCCCTCCCAA TGCCACCCTC ATCTTTGACG TGGAGCTGCT CAACTTAGAG TGAAGGCAGG AAGGAACTCA AGGTGGCTGG AGATGGCTGC TGCTCACCCT CCTAGCCTGC TCTGCCACTG GGACGGCTCC TGCTTTTGGG
      AGTOTTOATC AGTOTGCTAA CCTCACTGCC TCATGGCATC ATCCATTCTC TCTGCCCAAG TTGCTCTGATC AGTOTTCATG CGAATTCTTG CTTGAGGAAA CTTCGGTTGC AGATTGAAGC ATTTCAGGTT GTGCATTGATGCAT GTGATGCAT TTCCTGATGA CAGAACACAG ATCTCTTGTT CGCACAATCT ACACTGCCTT ACCTTCACTT AAACCACACA
      CACAAGGTGC TCAGACATGA AATGTACATG GCGTACCGTA CACAGAGGGA CTTGAGCCAG TTACCTTTGC TGTCACTTTC
      TCTCTTATAA ATTCTGTTAG CTGCTCACTT AAACAATGTC CTCTTTGAGA AAATGTAAAA TAAAGGCTCT GTGCTTGACA-
      3'(FRAG. NO:_) (SEQ ID NO:12487)
      5'GAATTCGGGC CGCCGCCAGG TCGCTGTTGG TCCACGCCGC CCGTCGCGCC GCCCGCCGC TCAGCGTCCG CCGCCGCCAT
      GGGAGTGCAG GTGGAAACCA TCTCCCCAGG AGACGGGCGC ACCTTCCCCA AGCGCGGCCA GACCTGCGTG GTGCACTACA
     CCGGGATGCT TGAAGATGGA AAGAAATTTG ATTCCTCCCG GGACAGAAAC AAGCCCTTTA AGTTTATGCT AGGCAAGCAG
      CAGATTIGAG GCGCTGTTGA GGACTGAATT ACTCTCCAAG TTGAGAGATG TCTTTGGGTT AAATTAAAAG CCCTACCTAA AACTGAGGTG GGGATGGGGA GAGCCTTTGC CTCCACCATT CCCACCCACC CTCCCCTTAA ACCCTCTGCC TTTGAAAGTA
```

PCT/US02/13135 WO 02/085308

GATCATGTTC ACTGCAATGC TGGACACTAC AGGTATCTGT CCCTGGGCCA GCAGGGACCT CTGAAGCCTT CTTTGTGGCC TTTTTTTTT TTCATCCTGT GGTTTTTCTA ATGGACTTTC AGGAATTTTG TAATCTCATA ACTTTCCAAG CTCCACCACT TCCTAAATCT TAAGAACTTT AATTGACAGT TTCAATTGAA GGTGCTGTTT GTAGACTTAA CACCCAGTGA AAGCCCAGCC ATCATGACAA ATCCTTGAAT GTTCTCTTAA GAAAATGATG CTGGTCATCG CAGCTTCAGC ATCTCCTGTT TTTTGATGCT
TGGCTCCCTC TGCTGATCTC AGTTTCCTGG CTTTTCCTCC CTCAGCCCCT TCTCACCCCT TTGCTGTCCT GTGTAGTGAT
TTGGTGAGAA ATCGTTGCTG CACCCTTCCC CCAGCACCAT TTATGAGTCT CAAGTTTTAT TATTGCAATA AAAGTGCTTT ATGCCCGAAT TC-3' (FRAG.NO:_) (SEQ ID NO:11866) 5' GCCGCCGCCA TGGGAGTGCĀ GGTGGAAACC ATCTCCCCAG GAGACGGGCG CACCTTCCCC AAGCGCGGCC AGACCTGCGT GGTGCACTAC ACCGGGATGC TTGAAGATGG AAAGAAATTT GATTCCTCCC GGGACAGAAA CAAGCCCTTT AAGTTTATGC TAGGCAAGCA GGAGGTGATC CGAGGCTGGG AAGAAGGGGT TGCCCAGATG AGTGTGGGTC AGAGAGCCAA ACTGACTATA TCTCCAGATT ATGCCTATGG TGCCACTGGG CACCCAGGCA TCATCCCACC ACATGCCACT CTCGTCTTCG ATGTGGAGCT TCTAAAACTG GAATGACAGG AATGGCCTCC TCCCTTAGCT CCCTGTTCTT GGATCTGCCR TGGAGGGATC TGGTGCCTCC AGACATGTGC ACATGARTCC ATATGGAGCT TTTCCTGATG TTCCACTCCA CTTTGTATAG ACATCTGCCC TGACTGAATG TGTTCTGTCA CTCAGCTTTT CTTCCGACAC CTCTGTTTCC TCTTCCCCTT TCTCCTCGTA TGTGTGTTTA CCCTAAACTAT ATGCCATAAA CCTCAAGTTA TTCA-3' (FRAG. NO:_) (SEQ ID NO:11867)

wherein B is adenosine, or, more preferably, replaces adenosine and is an "equivame\lent" or a "universal" base, and adenosine A2a receptor agonist or only minimally antagonist, an adenosine A2b receptor antagonist, an adenosine A3 receptor antagonist, or an adenosine A1 receptor antagonist. Similarly, adenosine (A) may always be replaced by an "alternative", "equivalent" and/or "universal" base having a small fraction, preferably less than 0.3 of the activity of adenosine at the adenosine receptor(s), as described above.

More sequences of examples below

gtttcgctcttgttgccc (SEQ ID NO:11031) gccgcccgcctg(SEQ ID NO:11051) 25 gcccgctccccggc (SEQ ID NO:11052) cbccgbggbgccc (SEQ ID NO:11053) ggccccccgcggccgcctcggggctgggcgctggtggccgggccgcgcccccgcctccgcttctggctggccccgggcgccccgggcgcccctcccctcttg ctcgggtccccgtgacagcgcgtcctgtgtctccagcagcatggccgggccagctgggccccbcbgcgcgtcctgtgtctccbgcbgcbtggccggg ccbgctgggcccc (SEQ ID NO:11054) ${\tt acagagcagtgctgttgttgggcatcttgccttcccagggbcbgbgcbtgctgttgttgggcbtcttgccttcccbgggcccttttctggtggggtg}$ gtgctgttgttgggctttcttctgttcccbcbgbgcbgtgctgttgttgtgggcbtcttgccbgggcccttttctggtggggtggtgctgttgt tgggct ttcttctgttccc(SEQ ID NO:11059) geetgtgtetgtectectgettegttectetgttectgettggtgecettgeeggtectgetectcegggetgtggggtectcgectggetectggetectggettegetggettegettggeggttectggetteggtteggggttectegettegetteggtteggggtectcggtttggggtettegetgetteggtttgg gtggcgatctctgaatattgaccttccatggcggtcctgcttggagbtctctgbbtbttgbccttccbtggcggtcctgcttggbtcgttcctctg (SEQ ID NO:11079)

40 cttgcgctgtctttggtggcbccgtccbgtgbtggtgcggtbcttgtcgctgcbgcgctcggtcccggbgbgc (SEQ ID NO:11108) bbgtgbgbgctgbgbgbbbctgtgbbgcbbtcbtgbcttcbbgbgttctttcbogcgttctttcbccgttctggcttcttctgtccgttggcttctcgttgtccct

tggget tetegttgtecececttegggggetggtggtggtegtecttgcetgetgg (SEQ ID NO:11120) eeggggetgebgebbeetebtebgetettgeetggbgtggetebgeetggeetgebgggetecbggbggbbtggcbggbbggbtggebggbggggtect

cbtggctggggtcbcbgbtcctctbgctbggcbgggtgbccbgbgbgggcgggtcctcbtggctggggcctggggcctgcbgggccgctcttgcctg gbgtgg ctcgcccbgbgtcttccctggt (SEQ ID NO:11181) cgctgcbbtctgctccggggctgcbgcbbcctcbtcbgctcttgcctggbgtggctcbgcctggggcctgcbggggccbccbggbbbtggcbbgg

NO:11186) ggbgctgbtbctgcbgatttcbgbgggbbgbbccctgbtbctcbccbgcttcbgctctggbgcbcbbgbgbbgbbgcbgcbggggggbgbbgbbg 50 cbgcbtcttcccbgbgbggctgccgbgcbbbtgctggttttcctttccbgtctTgggttttbtbbctcccbgbbggcbbgbgbggggcbbggcgttt tcttctctcgctggttttcctttcctggcagtggggtgggggtggggtggggtgggcttccttgttcctgggggtgtcctcttgctctgggcttttct ccccttttccttgtctgttttcctggggctctcctctgtctctgtgtccttgccctggccctcttcctctctctgtgtccctgtgttcc tggtgcttgggctggg (SEQ

tetettgtggggetgtgetggggtettggggettettgtgetgggtgggeteceegeceecettetgggeeggtggeteettgtggg egettetggetettgceetgteettettegeetegtggetge (SBQ ID NO:11279)

aggaagggggggggcccagaagggcagcccgcaggccaggatcaggtctgctgcggccggagataatggcattcaccacgcggcggcccagcgcacg 65 ccgcgcatccggcccgggttctgacctgcagccccggtctccttggcattcctgggccccagtcactcctctccctgcccccttgctggggcaggg acggggtgbcbttgbgcbtgtcggcgcggtcccgttbbgbgtgggcccgccagccagccattccacttgggggcgggtggccagcacgaacagcac ccagaggaagggggggcccagaagggcagcccgcaggatcaggtctgctgctgcggagataatggcattcaccacgcggggcccagcg cacgccgcgcatccggcccgggttctgacctgcagccccgtctccttggcattcctgggccccagtcactcctccctgccccccttgctggggc

agggacggcgtgttgtcbgtggtgctgcccgtttgbggtbtggcgctccbccbbttcccttttctcc 70 ttgttttccgtttctcttgccgtctgtggtt (SEQ ID NO:11657)

cccggccccgcctcgtgcc (SEQ ID NO:11685) cgtccbtgccgcgggccc (SEQ ID NO:11686) geccegetgettgggetgetetgeeggg (SEQ ID NO:11687) tetgtgeteetetegeetggg(SEQ ID NO:11688)

tggtggggttggttcttggtgg (SEQ ID NO:11689) ctgtccctggtccttgt (SEQ ID NO:11690) ggtcccgcttcttc (SEQ ID NO:11691) gggttgttgttggtctgg (SEQ ID NO:11692)

```
tgtcctctttctgc (SEQ ID NO:11693)
gcctcgggcctccc (SEQ ID NO:11694)
                ggctggggtctgcgt (SEQ ID NO:11695)
               ggctggggtcggtcggtcgctg (SEQ ID NO:11696)
gggctggggtgctggcttggg (SEQ ID NO:11697)
gggctggggctgggcc (SEQ ID NO:11698)
               gcctgggtcgggcttgggggc (SEQ ID NO:1170)
gctgggtctgtgctgttgcc (SEQ ID NO:11700)
gttgtgtgggggcc (SEQ ID NO:11701)
               gctgggtcggggctctgggctgtc (SEQ ID NO:11702)
gccccggggcccc (SEQ ID NO:1703)
tggctccccctcc (SEQ ID NO:1704)
 10
                gctccccctttcc (SEQ ID NO:11705)
               cggacgaagacagaga (SEQ ID NO:11706)
ggctttgtgggctc (SEQ ID NO:11707)
gcctgctctcccc (SEQ ID NO:11708)
15
                cccggccccgccbcgbbcc (SEQ ID NO:11709)
               cccggccccgccbcg (SEQ ID NO:11710)
cccggccccgccbcgbbcc (SEQ ID NO:11711)
cccggccccgccbcg (SEQ ID NO:11712)
20
             cccggccccgccbcg (SEQ ID NO:11712)
cccgbcccgcctcbbg (SEQ ID NO:11713)
cccgbcccgcctc (SEQ ID NO:11714)
ccggcccgcctc (SEQ ID NO:11715)
cccgbbcccgcbtbgtgcc (SEQ ID NO:11715)
cccgbbcccgcbtbgtgcc (SEQ ID NO:11717)
cccggbccbcbbgtgcc (SEQ ID NO:11717)
cccggbcccbccbbgtgcc (SEQ ID NO:11718)
cbgbbcccgcctcgtgcc (SEQ ID NO:11720)
ccggcbcgcctcbtgcc (SEQ ID NO:11721)
ccggcccgccbcbtgcc (SEQ ID NO:11722)
ccggbcccgbctcg (SEQ ID NO:11723)
cccggcccgcbcbtgc (SEQ ID NO:11724)
cccggccbgctcd (SEQ ID NO:11725)
cccggccbcgbctcgtbcc (SEQ ID NO:11726)
cccggcccgccbcg (SEQ ID NO:11727)
               cccggccccgccbcg (SEQ ID NO:11727)
cccggcccgccbcg (SEQ ID NO:11728)
tccbtgccgcggc (SEQ ID NO:11729)
             tccbtgecbcgggcc (SEQ ID NO:11730)
tccbtgecbcgggcc (SEQ ID NO:11731)
tccbtgecbcbggcc (SEQ ID NO:11731)
tccbtgecbcbggcc (SEQ ID NO:11732)
gtccbtgbcgcgg (SEQ ID NO:11733)
tccbtgbcgcggg (SEQ ID NO:11734)
tctgbgctcctctbbcctggg (SEQ ID NO:11735)
tctgtgcbcctbbcbctggg (SEQ ID NO:11736)
tgtgbtccbbtbbctcggg (SEQ ID NO:11737)
tctgtbctcbbctcbcttgg (SEQ ID NO:11738)
tgctcctcbcbbcttggg (SEQ ID NO:11739)
etccttbgcctgg (SEQ ID NO:11740)
gtgctccbbtcbctggg (SEQ ID NO:11741)
gtgcbccbbtcbctggg (SEQ ID NO:11742)
tctgtgcbcctctbgbct (SEQ ID NO:11743)
tbbtcctbbcbctggg (SEQ ID NO:11744)
tgtgctbbtcbcbcbtggg (SEQ ID NO:11744)
                techtgecheggec (SEQ ID NO:11730)
              tgtgctbbtcbcbctggg (SEQ ID NO:11745)
gtgcbccbctcbcctg (SEQ ID NO:11746)
55
               ctgtgcbcctctc (SEQ ID NO:11747)
             cctggebetetete (SEQ ID NO:11748)
gtgebecbetebetg (SEQ ID NO:11749)
cbcgtebetebetg (SEQ ID NO:11750)
cctetebectggg (SEQ ID NO:11750)
cctetebectggg (SEQ ID NO:11751)
gtcebeteget (SEQ ID NO:11751)
gttgttgbtetgg (SEQ ID NO:11753)
gttgttgbbtetgg (SEQ ID NO:11753)
gttgttgbtgbtettg (SEQ ID NO:11754)
gggttbbbgttgbtetgg (SEQ ID NO:11756)
gggttbbbgttgbtetgg (SEQ ID NO:11756)
gggttbbbgttgbtetgg (SEQ ID NO:11757)
gggttbbbgttgbtetgg (SEQ ID NO:11758)
ttgttgtbgbtetgg (SEQ ID NO:11758)
tggttbbbgttgbtetgg (SEQ ID NO:11760)
gggtbgbbgbgtecgetg (SEQ ID NO:11761)
gggtbgbtgggtt (SEQ ID NO:11762)
gggtcggbgggtetge (SEQ ID NO:11764)
gggtgggttggg (SEQ ID NO:11766)
cctgggtgggtbtggg (SEQ ID NO:11765)
cctgggtgggbbtggg (SEQ ID NO:11766)
cctggbtggggbbtggg (SEQ ID NO:11766)
cctggbtgggcbtggg (SEQ ID NO:11768)
               cbgtgcbccbctcbcctg (SEQ ID NO:11748)
               gcctgbgtgbbcttggg (SEQ ID NO:11768)
               gtttttttctggccctgctgggggcgctctccgccgcccgcctggctcccggbgcccbtgbtgggcbtgccgtggttcttg
               ccctcctttggctgccgtgccggtccccggctcctggcgggtggccgttgggccagtgttcccctggggcctggggct
80
               tgccacagacgacaggcgtbcbccgbggbgcccbtgbtgggcbtgccbcbgbcgbcbggcggcgcgtgccgcgtcttgg
                tgqcggcgggttcgcgcccgcgcggggcccctccggtccgttcgcgcccgcgcggggcccctccggtcccggtcggggc
```

ccccgcggccgcctcggggctggggcgctggtggccgcgcccccgccttccgccttctggctgggccccgggcgc ccctcccctcttgctcgggtccccgtgacagcgcgtcctgtgtctccagcagcatggccgggccagctgggccccbcbg cgcgtcctgtgtctccbgcbgcbtggccgggccbgctgggccccacagagcagtgctgttgttgggcatcttgccttccc agggbcbgbgcbtgctgttgttgggcbtcttgccttcccbgggcccttttctggtggggtggtgctgttgttggtggctttt ttctgttcccbcbgbgcbgtgctgttgttgggcbtcttgccttcccbgggcccttttctggtggggtggtgctgttgttg ggctttcttctgttccctttccctgggtcttccctcctgctctttttcatttgctctcctattactttctgtgccat tttttcattaaccgagetgtbtttgctctcctbttbctttctgtgtccbttttttcbttbbccgbgctgtgcctgtgtct ctccggctggtgggctcccctggccttcgctggcggctgcgggtcttgctctgggcctggctgtggccgtggttg 10 ggggtcttcgctgcctccgtttgggtggctctctgaatattgaccttcctccatggcggtcctgcttggattctcccgat ctctgbbtbttgbccttcctccbtggcggtcctgcttggbttctcccgbgcctttcctggttctcttgttgttttttgggg tttggcttacagtagagtaggggattccatggcaggagccatcttcttcatggactccttcaaggagaccttaggtttct gaggactgctaacacgccatctggagcbcbgtbgbgtbggggbttccbtggcbggbgccbtcttcttcbtggbctcctt cbbggbgbccttbggtttctgbgggbctgctbbcbcgccbtctggbgcgttgtttttggggtttgcctttcctgg ttetettbebgtbgbgtbggggbttecbtggebggbgeebtettettebtggbeteettebbggbgbeettbggtttetg gccccbgbbcgbgbcccggbccgbcbggccgtggttgggggtcttcgctgcctccgtttgggtggcgatctctgaatatt gaccttccatggcggtcctgcttggagbtctctgbbtbttgbccttccbtggcggtcctgcttggbtctggggtgtcctg gcattcgtggttcctattccttcgtttgccgtccgcgggggccccggggcctggctgcgctcctgccccgcctatttccc togtggtteetetteetttgetttgeegteeggggggeeeeegggeetggeetgegeteetgeeeegeetettteeeggge 25 30 gtatgggcattttggggtaggatggatgatgattagggaagaattgggattaccatgtgaacatttactattgatgggtacaa ctcccgttccaagctgcaccgcacagaccggcgctacaggacagagccaggcaagcacccatggggatccaggcccagct gttccbbgctgcbccgcbcbgbccggcgctbcbggbcbgbgccbggcbbgcbcccbtggggbtccbggcccbgctgctca 35 ctttgctgtgccctgcctctctgcccgtgtctgtcgtgtctttcctttgctcttggtgtgtgtctttgctgtgccctgcctc 40 cgcgctgctgctgccctgctggccgcgcggggcctgtccgcgcggggcgctgtctcctggcttgtcttccggctc tggctcggggctccgtgggtccctggcgccgtttgtgtttttgtcttttcccctggcgtccctgtgcccctctctctcc eggeggggtgtgegettggegetecegtgeteggttetetgteteceggtececettgeetggeqtetegggeettegte
etettectettettecttecgetecgtgggggetgettggtggggeetgtgeeteggggteceggggettetgg 50 gccgttcatggtggctaggtgggggttcbtggtggctbggtggggggggtgggtbggccgtgtctgggggttggccbt gttctgggtggtggcgggcgtggtggcctctgtgggggcccgcggctgcbggggttgcctgtctgcttcgtcctttgcgc 55 gctgtaatcttcatctgcaggtggcatgccagtgaaatttagatcatcaaaatcccacatctgtggatctgtaatatttg acatgtcctcttcagtttcagcaatggtttgatctaactgaagcaccggccaggbcbggggctgtbbtcttcbtctgcbg gtggcbtgccbgtgbbbtttbgbtcbtcbbbbtcccbcbtctgtggbtctgtbbtbtttgbcbtgtcctcttcbgtttcb gcbbtggtttgbtctbbctgbbgcbccggccbggtggctcggtgcttctgcccctgttgttgcggcgctcggttggtgt 60 tegggegggaageeteteteeteeceagateegegaeaggeegeaggeaagaaeeagegeaaceagggegegteegea tctcctctccccbgbtccgcgbcbggccgcbggcbbgbbccbgcgcbbccbgggcgcgtccgcbcbgbcttggbggcggc 70 caaatttgaggacbtccbcbtgbttgcttbgbtttgtgctgtbtctctcbggbttbtcbctgbttbcbcbbccbgt 75 gccbgccbbbbggbtgccctgbggcbbbgggtttccbtcttgbggcbbbtttgbggbgggctbbgbtgbtccbcbtcbct bechegttgeechechebgbggtebeebebbtgbeegtgtbggebgetgeecbbbggbebbtttgeebggetggttgebe gbbctgbttgggttccgbggtgttbgtggbgbtgtttggggbgbggtctgbgtccbccgggbggbcgttbtccbtttcgb bgetbggeggtbbbgecetbetbtetgtbebebbeececetetgebgebgbgteetgtegtggegeetggggetebgggt ccgggctaagatgatccacatcactaccacgttgcccaccacagaggtcaccacaatgaccgtgtaggcagctgcccaaa ggacaatttgccaggctggttgcacgaactgattgggttccgaggtgttagtggagatgtttggggagaaggtctgagtcc accgggaggacgttatccatttcgaagctaggcggtaaagccctactatctgtacacaacccccctctgcagcagagtcc tgtcgtggcgcctggggctcagggtccgtcctgtcgtggcgcctggggctcttcttttgtgggctctttggggctgtgg

cacgaacagcacccagaggaaggggggggcccagaagggcagcccgcaggccaggatcaggtctgctgcggagat aatggcattcaccacgcggcggcccagcgcacgccgcgcatccggcccgggttctgacctgcagccccgtctccttggc attcctgggccccagtcactcctctccctgcccccttgctggggcagggacggggtgbcbttgbgcbtgtcggcgcggt ccctgcccccttgctggggcagggacggcgtgttgtcbgtggtgctgccggtttgbggtbtggcgctccbccbbttcccttttcccttgtttccgtttctctgccgtctgtggt (SEQ ID NO:11778) 20 cgcgbgtcggcgbgggtccctccbcbtctgctctgbctgdbctctggbtctgbbgbbbggccbgcbgbbb cbggbgtggctgcbtctttcctggtggggcctgctctcccggcctccgtgtgttgctgggtgttttcccgtctctggtct 25 geettegggggtegteggggetgebgebbeetebtebgetettgeetggbgtggetebgeetgggeetgebgggeebee gegggteetebtggetgggggeetgggeetgebgggeegetettgeetggbgtggetegeebgbgtetteeetggtege tgcbbtctgctccgggggttgcbgcbbcctcbtcbgctcttgcctggbgtggctcbgcctgggcctgcbgggccbccbggb gbbtggcbgcbbggbtggcgbgggtcctcbtggctggggtcbcctggbggbggbggbggbgggtcctcbtggctgggg 30 ethbgbetgetgttetetggbgeteettggebbgeebebbbebgebgbgbgbbbbtebtgbgebbbtbbtecbttetgbbb cggtctgttgcctttgtgggcttcttgtctttttggctgttcttttcctgcttggcgtcttttccttttcctgtgtgctcgg 50 cggcctcctcctggccgctgtctcgggcggcggccttggcgctccgtttggggctgcctctggcgcttccggccctcggc 65 geggegggetggteetggegttttgeteetteetgggegtettggggtgebgggeecbteetgetgegeetgggetge 70 ctgtgttetggegetggtgggettgggecetetgggggetgggttteetgetgetgedettgggettggegetggegetg 75

tctgtgggcgtgtgctgggtcttggggcttcctcccttgtgctgggtgcggcctccccgcccccttctgggccggtggc cctccttcctggtctgtctgccbgbcbbbtttgggbbgtgbbcbgttttggbbccbtgtttcccbgtctctgbgctgtgg tttgctggtgtctgcgccccbbcbgbbgbbgcbgbcbbbtttgggbbgtgbbcbgttttggbbccbtgtttcctgtgcg 10 ggcccggccgttgtcttggtttggggtttccgttggggttctcctggcccgggccttgcccggccgtggtcccggcttc ctgcbgcgctcggcctggtcccggbgbgcgcgcggggccgggggctgctggggggttggcccgggggtgccccggccgctgggt gccctcgtcctctgcggtcgtgtctcctggctctggttccccgctgcgcccgttgtcctctggggtggccttcgctcccg ctgbgbgbbbctgtgbbgcbbtcbtgbcttcbbgbgttcttttcbcccgttcttggcttcttctgtccgttggcttctcg cttgttctgqtccttcgtggggctctgtqtcgcgtgggtgcggccgtggccgggbccbggbgttggbgcbggbgcbgg bbcbgbgggggbbgcbgttgggbggtgbgbcccbttbbtbggtgtcgbtccctgtttcccccctttcgttctgcgtttgc 30 gcbgctccbbgbgctbgcbbbctcbbbtgcbgbbgcbtcctcbtggctctgbbbcggtgggaatttctgtggggbtggca tacacgtaggcagctccaagagctagcaaactcaaatgcagaagcatcctcatggctctgaaacggggggttggcttcctg 35 gcggccggcccggtgctggggctcctcgggggggggggctcttccggggctgtctcccctccggggcggggtttctggccg tgggggtettgeetggeeteegggeteetgettgtettgeetteettetetgteggteggttgtggeteeggggeteegtgggt ttbtqcbctqbcbtctbbqttctttbgcbctccttggcbbbbctgcbccttcbcbcbgbgctgcbgbbtcbggbbggct ctcttggttccttccggtggtttcttcctggctcttgtcctttctctttggcccttggccgggbgtgggggtcctggbcgg chetghbggchtechgggeteeettechgteettettgteegetgechgebeeeettebtteebgbggetgbtggeetee beebgggbebtgbttbggtbgbbbetbggbggeeggeteebeebgggbebtggteettettgteegetgeetetetggg gttttoggtotgggtgggotttoctoctggggotgctgctggtggctcttcttttgtttctggcotggtgctctctcgtgg cctttcccttgggtgtcttgtttttgtggcctccbccbgggbcbtggtctttgtttctgggctcgtgccccbtcccggct tetetetggtteegteetetgtggtgtttggeeetgetteettttgeetgttgagggggeageagttgggeeeeaaagge cctctcgttcaccttctggcacggagttgcatccccatagtcaaactctgtggtcgtgtcatagtcctctgtggtgtttt gagtttccatcccggcttctctctggttccaagggagbgggggcbgcbgttgggccccbbbggccctctcgttcbccttc tggcbcggbgttgcbtccccbtbgtcbbbctctgtggtcgtgtcbtbgtcctctgtggtgtttggbgtttccbtcccggc ttetetetggtteebbgggbgggebeggggebgtaggeggebbtgtbggebbbgebggbgggtgtagteegbggbbt btggggbggcbgbtgcbggbgcgcbgbgggcbgtbgcbbtgbggbtgbcbgcgbggcgtgccgcgggbgbccttcbtggtb bgbbbgbtgtgcttbccttcbcbbbgbgttgcbgbbbtcbggbbggctgcbgbgbgcdcggccbgcttggbgtcbtg tttbcbcbcbgtgbggtgctccggtggdtttttgcttgtgtgtctctgttcttgttcttcttgttcttg ctcttgtcctttctcttggcccttggccccttgbgcbggbbgctctggggbggbggctggcbgggcccbggggggtggc ttcctgcbctgtccbgbgtgcbctgtgccbcbgcbgcbgctgcbgggccbtcbgcttcbtggggctctgggtggcbggtc cbgccbtgggtctgggtggggctggggctgcbggctccgggccggtccbgccbtgggtctggggctggggctgcbggctccg qqctccgggcgggcgggtgcgggctgcgtgctgggggctgccccgcaggccctgcgcbccgcctggbgccctggggcccc cctgtcttcttggggbgcgcctcctcggccbgctccbcgtcccggbtcbtgctttcbgtgctcbtggtgtcctttccbgg ggbgbgbggggctggtcctctgctgttccttgctggtgctcbtggtgtcctttccgccctggggcccccctgtcttcttgg ggcctcttccctctgggggccgtctctctccctctcttgcgtctctctctttctctctctctctcccctttcccgctct 70 gttectgtectetetgtetgtegececetetggggtetecetetgggtggtegtettgttgettggetgggetecgtgt ctccbgtgctcbtggtgtccgctgbgggbgcgtctgctggcgctggtcctctgctgttccttgctggtgctcbtggtgtcc tttccgccctggggcccccctgtcttcttggggcctcttccctctgggggccgtctctctctctctctttcctc ttteteteteteteteteceettteeegetetttetgteteggtgteteggttteteteteteegetggetgeetgtetggee tgegetettggeetgtgetgtteeteeteeggtteetgteetetetgtetgtetgtegeeeeetetggggteteeetetggegt 75 ggtggtettgttgettgggetgggeteegtgteteebgtgetebtggtgteegetgbgggbgegtetgetggeetgetgb ggcttgggtetcegggegbttctetgebgbbgbtgctebbbgggetceggebgtteetcettgbtetggtegetgtegtb ccbbggccbcgbggbttttcbtgttggbttttgcgbcggbcbgtcccgcgggggtgctgagtttctctggttcctccgbgc

(SEQ ID NO:11780) 15 20 agcatgggggagcccgtgatcaagtgcgagttcgagaaggtcatcagcatggagtacatggtctacttcaacttctttgt gtgggtgctgccccgcttctcctcatggtcctcatctacctggaggtcttctacctaatccgcaagcagctcaacaaga aggtgtcggcctcctccggcgacccgcagaagtactatgggaaggagctgaagatcgccaagtcgctggccctcatcctc ttcctctttgccctcagctggctgcctttgcacatcctcaactgcatcaccctcttctgcccgtcctgccacaagcccag catecttacetacattgecatetteeteacgcacggcaacteggecatgaaccccattgtetatgcctteegcatecaga 25 agttccgcgtcaccttccttaagattttggaatgaccatttccgctgccagcctgcacctcccattgacgaggatctccca gaagagaggcctgatgactag (SEQ ID NO:11789) atgeogeetecateteagettteeaggeegeetacateggeategaggtgeteategeeetggtetetgtgeeegggaa cgtgctggtgatctgggcggtgaaggtgaaccaggcgctgcgggatgccaccttctgcttatcgtctctcgctggcggtggc tgatgtggccgtgggtgccctggtcatccccctcgccatcctcatcaacattgggccacagacctacttccacacctgcc 30 tcatggttgcctgtccggtcctcatcctcacccagagctccatcctggccctgctggcaattgctgtggaccgctacctc cgggtcaagatccctctccggtacaagatggtggtgaccccccggagggcggcggtggccatagccggctgctggatcct ctccttcgtggtgggactgccctatgtttggctggaacaatctgagtgcggtggagcgggcctgggcagccaacggcag catgggggagcccgtgatcaagtgcgagttcgagaaggtcatcagcatggagtacatggtctacttcaacttctttgtgt gggtgctgcccccgcttctccctcatggtcctcatctacctggaggtcttctacctaatccgcaagcagctcaacaagaag 40 tetgetgatgtgeceageetgtgeeegeeatgeegeeteeateteagettteeaggeegeetaeateggeategaggtg 45 ctcatcgccctggtctctgtgcccgggaacgtgctggtgatctgggcggtgaaggtgaaccaggcgctgcggatgccac cttctgcttcatcgtgtcgctggcggtggctgatgtggccgtgggtgccctggtcatccccctcgccatcctcatcaaca ttgggccacagacctacttccacacctgcctcatggttgcctgtccggtcctcatcctcacccagagctccatcctggcc ctgctggcaattgctgtggaccgctacctccgggtcaagatccctctccggttacaagatggtggtgaccccccggagggc ggcggfggccatagccggctgctggatcctctccttcgfggtgggactgacccctatgtttggctggaacaatctgagtg 50 cggtggagcgggcctgggcagccaacggcagcatgggggagcccgtgatcaagtgcgagttcgagaaggtcatcagcatg gagtacatggtetaetteaaettettigtgtgggtgetgeeeegetteteeteatggieeteatetaeetggaggtett 60 65 aaacagccacgaggtggtagctctgagccctccttcttgccctgagctttccggggaggagcctggagtgtaattacctg tcatctgggccaccagetecactggcccccgttgccgggcctggactgtcctaggtgaccccatctctgctgcttctggg tgtaaggactcagtgttgactgtaggegeceetggggtgggtttagcaggetgcagcaggcagaggaggagtacccccet 70 gagageatgtgggggaaggeettgetgteatgtgaateeeteaataceeetagtatetggetgggtttteaggggetttg gaagetetgttgeaggtgteegggggtetaggaetttagggatetggggatetggggaaggaecaaeccatgeetgecaa ccttctgaacatgagtgtcaactccaggacttgcttccaagcccttccctgttggaaattggtgtgccctggctccc 75 aagggaggcccatgtgactaataaaaactgtgaaccctcgcatttgtgttttaataaaagaatctggaagataaatagt

tgtggccgtggtgcctggtcatcccctcgccatcctcatcatcatcattgggccacagacctacttccacacctgcctca tggttgeetgteeggteeteateeteacecagageteeateetggeeetgetggeaattgetgtggacegetaceteegg gtcaagatccctctccggtacaagatggtggtgaccccccggagggcggtggccatagccggctgctggatcctctc cttogtggtgggactgaccoctatgtttggctggaacaatctgagtgcggtggagcgggcctgggcagccaacggcagca tgggggagcccgtgatcaagtgcgagttcgagaaggtcatcagcatggagtacatggtctacttcaacttctttgtgtgg gtgctgcccccgcttctcctcatggtcctcatctacctggaggtcttctacctaatccgcaagcagctcaacaagaaggt gtcggcctcctccggcgacccgcagaagtactatgggaaggagctgaagatcgccaagtcgctggccctcatcctcttcc tettigeceteagetggetgeettigeacateeteaactgeateaceetettetgeeegteetgeeacaageeeageate cttacctacattgccatcttcctcacgcacggcaactcggccatgaaccccattgtctatgccttccgcatccagaagtt 10 ccgcgtcaccttccttaagattttggaatgaccatttccgctgccagcctgcacctcccattgacgaggatctcccagaag agaggeetgatgaetagaeeeegeetteegeteeeaeegeeeaateeagtggggteteagteeagteeteacatgeeeg ctgtcccaggggtctccctgagcctgccccagctgggctgttggctgggggacatgggggaggctctgaagagatacccac agagtgtggtcctccactaggagttaactaccctacacctctgggccctgcaggaggcctgggagggcaagggtcctac 15 ggctgggcaggtcctggggaggctgagactgcagaggagccacctgggctgggagaaggtgcttggggcttctgcggtgag acggatggaaggagagaggttgaggatgcactggcctgttctgtaggagagactggccagagatggagggcggcatggcg gggcgggtcgccggggcbcbggcggcacaggcbcgcggcctggggcggcggcgbtggbgggggctgggcggcctg gaaagctgagatggagggcatggcggcacaggctgggc (SEQ ID NO:11792) gaattcccagatgggcagaggtggctgggctggtgaccctaagtgtgtctcctgcctttattctctctagtgggttattctttcatgtggtatcttgcctacagcagctgtgttttggacacaaacccctttccttggtttctctgacccagctgagatg 20 aacttccttctctgaagcacagataaagaaaacaattacagtagaaacatttatgagggacacattggaggccgatgaag 25 cttttcaagttccagcagtgcagggatgtggggcagaactgacattggaaaatactagaatgatggaaattcagttggaga tgttgttactgctgaattttattttgggctgtacatatttagatgcttaaggtaaaaatgataaagccctcaagccactg 30 tgtgggtttgggtccaagtgttccttcttgctgcctctctaacacgcctggttaaaataatcccttttggatggtgctgag aagcacctgaaccaagtgggtccccaaataacaatggcgtgcaagtgtctggttcccagaagttggtgactaggtaagca gcttcagggagagggggctgattcccagacagtcgcctgttcctgcggggatgggctgaggcttggggaatgtgggcag cctcacataggttggacattggccggctgccagcataagtgccagtgtgattttgctaggtgtgagctgagaaagagg 35 tggaggctaagcaggtgtgatgcttctcagaggtgctgagtttttgcccttctgagcagggaatcttttgcttatcccttt gaccaaggatetttgetgeaaaggetgggtateggetgtgeteageaaagegteaaetegtgeaagaaettageaggaat gatetttttgetaagetggeagaaagattgeatagteagtgetteeagetetgeteeeacetgateetgeactgteetet ggtccctgaatgaatgaactctgatacccaatcttgtctcgagccttctctatgccactcatggctcctcttctgctctt tccatctttttgctgagagttctgagctctgtacttcctctttggcccatctcacttcctgaaacacccctgaagagggtt 40 ggaagtgacccacctgtgatgagccctttctaaggagaaggytttccaagagatcaccccaccagaaaagggtaggaattttagactgtcactgcacatggacctctgggaagacgtctggcgagagctaggcccactggcccta 45 cagacggatcttgctggctcacctgtccctgtggaggttcccctgggaaggcaagatgcccaacaacaacagcactgctctgt cattggccaatgttacctacatcaccatggaaattttcattggactctgcgccatagtgggcaacgtgctggtcatctgc gtggtcaagctgaaccccagcctgcagaccaccaccttctatttcattgtctctctagccctggctgacattgctgttgg ggtgctggtcatgccttttggccattgttgtcagcctgggcatcacaatccacttctacagctgcctttttatgacttgcc tactgettatetttaeccaegeeteeateatgteettgetggeeategetgtggaeegataettgegggteaagettaee 50 gtcaggtagcctgcggcgtggggtgggcagcaattgaggcagctgggaaatgaggctacaaagccagagc (SEQ ID NO:11795) gccgccgccaagatggcggacctggaggcggtgctggccgacgtgagctacctgatggccatggagaagaagaagcaaggc cacgccggccgcgcgcgcagcaagaagatactgctgcccgagcccagcatccgcagtgtcatgcagaagtacctggagg accggggcgaggtgacctttgagaagatcttttcccagaagctggggtacctgctcttccgagacttctgcctgaaccac 55 ctggaggaggccaggcccttggtggaattctatgaggagatcaagaagtacgagaagctggagacggaggagcgtgt ggcccgcagccgggagatcttcgactcatacatcatgaaggagctgctgctggcctgctcgcatcccttctcgaagagtgcca ctgagcatgtccaaggccacctggggaagaagcaggtgcctccggatctcttccagccatacatcgaagagatttgtcaa aacctccgaggggacgtgttccagaaattcattgagagcgataagttcacacggttttgccagtggaagaatgtggagct caacatccacctgaccatgaatgacttcagcgtgcatcgcatcattgggcgcgggggctttggcgaggtctatgggtgcc 60 ggaaggctgacacaggcaagatgtacgccatgaagtgcctggacaaaaagcgcatcaagatgaagcagggggagaccctg cgggacctgaagccagccaacatccttctggacgagcatggccacgtgcggatctcggacctgggcctggcctgtgactt ctccaagaagaagccccatgccagcgtgggcacccacgggtacatggcccggaggtcctgcagaagggcgtggcctacg acagcagtgccgactggttctctctggggtgcatgctttcaagttgctgcgggggcacagccccttccggcagcacaag 65 accaaaqacaaqcatqaqatcqaccgcatgacgctqacqatggccgtggagctgcccgactccttctcccctgaactacg ctccctgctggaggggttgctgcagagggatgtcaaccggagattgggctgcctgggccgagggctcaggaggtgaaag agagecetttttecgeteetggactggcagatggtettettgcagaagtacetteeceegetgateeceeaagaggg 70 qaqqtgaacqcqqccqacqccttcqacattqqctccttcqatqaqqaqqacacaaaaqqaatcaaqttactqqacaqtqa tcaggagetetacegeaactteceeeteaceateteggageggtggcageaggaggtggcagagagactgtettegacacea tcaacgctgagacagaccggctggaggctcgcaagaaagccaagaacaagcagctgggccatgaggaagactacgccctg ggcaaggactgcatcatgcatggctacatgtccaagatgggcaaccccttcctgacccagtggcagcggcagtacttcta cctgttccccaaccgcctcgagtggcggggcgagggcgcggcagagcctgctgctgaccatggaggagatccagtcgg 75 tggaggagacgcagatcaaggagcgcaagtgcctgctcctcaagatccgcggtgggaaacagttcattttgcagtgcgat agcgaccctgagctggtgcagtggaagaagaagctgcgcgacgcctaccgcgaggcccagcagctggtgcagcgggtgcc caagatgaagaacaagccgcgctcgccgtggtggagctgagcaaggtgccgctggtccagcgcggcagtgccaacggcc tctgacccgccacccgcct (SEQ ID NO:11809) atacagcacaaatctaagcaatcatgtggatgatttcaccacttttcgtggcacagagctcagettcctggttaccactc atcaacccactaatttggtcctacccagcaatggctcaatgcacaactattgcccacagcagactaaaattacttcagct ttcaaatacattaacactgtgatatcttgtactattttcatcgtgggaatggtggggaatgcaactctgctcaggatcat

ttaccagaacaaatgtatgaggaatggccccaacgcgctgatagccagtcttgcccttggagaccttatctatgtggtca
ttgatctccctatcaatgtatttaagctgctggctggcggctggccttttgatcacaatgactttggcgtatttctttgc
aagctgttcccctttttgcagaagtcctcggtggggatcaccgtcctcaacctctgcgctcttagtgttgacaggtacag
agcagttgcctcctggagtcgtgttcagggaattgccttctactggaactgcaattgcctccatctggatcc
tgtcctttatcctggccattcctgaagcgattggcttcgtcatggtaccctttgaatataggggtggacagcataaaacc
tgtatgctcaatgccacatcaaaattcatggagttctaccaagatgtaaaggactggtggctcttctgggttctatttctg
tatgcccttggtgtgcactgcgatcttctacaccctcatgactggtgagatgttgaacagaaggaatggcagcttgagaa
ttgccctcagtgaacatcttaagcagcgtcgagaaggcgaaaaacagttttctgcttggttgtaatttttg
tggttccctcttcatttaagccgtatattgaagaaaactgtgtataacggaatggacaagaaccgatggaattacttag
tttcttactgctcatggattacatcggtataacttggcaaccatgaattcatgtataaaccccatagccttgatttttg
tgggcaagaaatttaaaaattggtattaacttggcaaccatgaattcatgtataaaccccatagcctgatgactcggtc
cccatgaacggaacaagcatccagtgaagaaccacgatcaaacaaccacaaaccagaccggagcagccataaggacag
catgaactgaccacccttagaagcactcct (SEQ ID NO:11838)

taccagtccaaaagtctgatgacctcggtccccatgaacggaacaagcatccagtggaagaaccacgatcaaaacaacca caacacagaccggagcagccataaggacagcatgaactgaccacccttagaagcactcctgaattcgggaaaaaagtgaag gtgtaaaagcagcacaagtgcaataagagatatttcctcaaatttgcctcaagatggaaaccctttgcctcagggcatcc ttttggctggcactggttggatgtgtaatcagtgataatcctgagagatacagcacaaatctaagcaatcatgtggatga tttcaccacttttcgtggcacagagctcagcttcctggttaccactcatcaacccactaatttggtcctacccagcaatg gctcaatgcacaactattgcccacagcagactaaaattacttcagctttcaaatacattaacatgtgatatcttgtact attttcatcgtgggaatggtggggaatgcaactctgctcaggatcatttaccagaacaaatgtatgaggaatggccccaa 20 cgcgctgatagccagtcttgcccttggagaccttatctatgtggtcattgatctccctatcaatgtatttaagctgctgc ctgggcgctggccttttgatcacaatgactttggcgtatttctttgcaagctgttcccctttttgcagaagtcctcggtg gggatcaccgtcctcaacctctgcgctcttagtgttgacaggtacagagtcgctcctggagtcgtgttcagggaat tgggattcctttggtaactgccattgaaattgtctccatctggatcctgtccttatcctggccattcctgaagcgattg 25 gcttcgtcatggtaccctttgaatataggggtgaacagcataaaacctgtatgctcaatgccacatcaaaattcatggag ttctaccaagatgtaaaggactggtggctcttcgggttctatttctgtatgcccttggtgtgcactgcgatcttctacac cctcatgacttgtgagatgttgaacagaaggaatggcagcttgagaattgccctcagtgaacatcttaagcagcgtcgag aagtggcaaaaacagttttctgcttggttgtaatttttgctctttgctgttcctttcatttaagccgtatatttgaag aaaactgtgtataacgagatggacaagaaccgatgtgaattacttagtttcttactgctcatggattacatcggtattaa 30 cttggcaaccatgaattcatgtataaaccccatagctctgtattttgtgagcaagaaatttaaaaattgtttccagtcat gcctctgctgctgctgttaccagtccaaaagtctgatgacctcggtccccatgaacggaacaagcatccagtggaagaac tactcccataatcctctcggagaaaaaaatcacaaggcaactgtgagtccgggaatctcttctctgatccttcttcctta cgtacttctttaattgatctaatttacatattctgcgtgttgtattcagcactaaaaaatggtgggagctgggggagaat

(SEO ID NO:11865)

60

65

70

75

gggaggatcgcttgagcctgggaggcagaagttgcaatgagcagagatcgtgccactccgctccagtcttggtgacagaa taagaagtgatcatttccattataagggaaggaatttaatcctacctgccattccaccaaagcttacctagtgctaaagg atgaggtgttagtaagaccaacatctcagaggcetetetgtgecaatageetteetteettteeetteeaaaaaceteaa gtgactagttcagaggcctgtctggaataatggcatcatctaatatcactggccttctggaacctgggcattttccagtg tgttocatactgtcaatattcccccagcttcctggactcctgtcacaagctggaaaagtgagagggatggacagggattaa ccagagagetecetgetgaggaaaaaateteecagatgetgaaagtgaggecatgtggettggecaaataaaacetgget ccgtggtgcctctgtcttagcagccaccctgctgatgaactgccaccttggacttgggaccagaaagaggtgggttgggt gaagaggcaccacacagagtgatgtaacagcaagatcaggtcacccacaggccctggcagtcacagtcataaattagcta tctggatggcatggggtgagtataaatacttcttggctgccagtgtgttcataactttgtagcgagtcgaaaactgaggc tccggccgcagagaactcagcctcattcctgctttaaaatctctcggccacctttgatgaggggactgggcagttctaga ggtgagttgccctgctttaaaatctctcggccacctttgatgaggggactgggcagttctagacagtcccgaagttctca atctgagetcaaatccagataagtgacataagtgacetgetttgtaaagecatagagatggeetgteettggaaatttet gttcaagaccaaattccaccagtatgcaatgaatggggaaaaagacatcaacaatgtggagaaagccccctgtgcca gagacgggaaagaagtctccagaatctctggtcaagctggatgcaaccccattgtcctccccacggcatgtgaggatcaa

aaactggggcagcgggatgactttccaagacacacttcaccataaggccaaagggattttaacttgcaggtccaaatctt

gcctggggtccattatgactcccaaaagtttgaccagaggacccagggacaagcctacccctccagatgagcttctacct caagctatcgaatttgtcaaccaatattacggctccttcaaagaggcaaaaatagaggaacatctggccagggtggaagc ggtaacaaaggagatagaaccaacaggaacctaccaactgacgggagatgagctcatcttcgccaccaagcaggcctggc gcaatgcccacgctgcattgggaggatccagtggtccaacctgcaggtcttcgatgcccgcagctgttccactgcccgg gaaatgtttgaacacatctgcagacacgtgcgttactccaccaacaatggcaacatcaggtcggccatcaccgtgttccc ccagcggagtgatggcaagcactaccgggtgtggaatgctcagctcatccgctatgctggctaccagatgccagatg gcagcatcagaggggaccctgccaacgtggaattcactcagctgtgcatcgacctgggctggaagcccaagtacggccgc ttcgatgtggtccccctggtcctgcaggccaatggccgtgaccctgagctcttcgaaatcccacctgaccttgtgcttga tgctgcttgaggtgggcggcctggagttcccagggtgccccttcaatggctggtacatgggcacagagatcggagtccgg gacttctgtgacgtccagcgctacaacatcctggaggaagtgggcaggagaatgggcctggaaacgcacaagctggcctc gctctggaaagaccaggctgtcgttgagatcaacattgctgtgatccatagttttcagaagcagaatgtgaccatcatgg accaccactoggotgoagaatoottoatgaagtacatgoagaatgaatacoggtocogtgggggotgocoggoagactgg atttggctggtccctcccatgtctgggagcatcaccccgtgtttcaccaggagatgctgaactacgtcctgtccccttt 15 ctactactatcaggtagaggcctggaaaacccatgtctggcaggacgagaaggcgagaacccaagagaagagagttccattgaaagtcttggtcaaagctgtgctctttgcctgtatgctgatgcgcaagacaatggcgtcccgagtcagagtcaccatc ctctttgcgacagagacaggaaaatcagaggcgctggcctgggacctgggggccttattcagctgtgccttcaaccccaa atggagactgccctggcaatggagagaaactgaagaaatcgctcttcatgctgaaagagctcaacaacaaattcaggtac gctgtgtttggcctcggctccagcatgtaccctcggttctgcgcctttgctcattgatcagaagctgtccagccgggggcctctcagctcacccgatgggagaaggggatgagctctaggggaggaggacgcttccgcagctgggcagtgcgcttcagcagcctgggagaagctgtcagcggggagaagcagcattcagagctctacacctccaat 20 gtgacctgggacccgcaccactacaggctcgtgcaggactcacagcctttggacctcagcaaagccctcagcagcatgca tgccaagaacgtgttcaccatgaggctcaaatctcggcagaatctacaaagtccgacatccagccgtgccaccatcctgg 25 tggaactctcctgtgaggatggccaaggcctgaactacctgccgggggagcaccttggggtttgcccaggcaaccagccg gccctggtccaaggcatcctggagcgagtggtggatggcccacaccccacaagacagtgcgcctggaggacctggatga ccacaccccaacccagctgctgctccaaaagctggcccaggtggccacagaagagcctgagagacagaggctgggggcc ctgtgccagcctcagagtacagcaagtggaagttcaccaacagccccacattcctggaggtgctagaggagttcccgtc 30 cctgcgggtgtctgctggcttcctgctttcccagctcccattctgaagcccaggttctactccatcagctcctcccggg atcacacgcccacggagatccacctgactgtggccgtggtcacctaccacaccggagatggccagggtcccctgcaccac ggtgtctgcagcacatggctcaacagcctgaagccccaagacccagtgcctgctttgtgcggaatgccagcgccttcca aacggctccatgactcccagcacaagggagtgcggggaggccgcatgaccttggtgttttgggtgccgccgcccagatgag gcctggcaagcccaaggtctatgttcaggacatcctgcggcagcagctggccagcgaggtgctccgtgtgctccacaagg agccaggccacctctatgtttgcggggatgtgcgcatggcccgggacgtggcccacaccctgaagcagctggtggctgcc 40 cctcctaacaagtagcaccctggattgatcggagcctcctctctcaaactggggcctccctggtcccttggagacaaaat cttaaatgccaggctggcgagtgggtgaaagatggaacttgctgctgagtgcaccacttcaagtgaccaccaggaggtg 45 tccccatggccacttgggtcttccctgtatgattccttgatggagatatttacatgaattgcattttactttaatcgaat tcccactctgctgctgctccagcagacggacgcacagtaacatgggcaacttgaagagcgtggcccaggagcctgggcc gggcccagcatccctactcccaccagcgccagaacacagcccccgagctccccgctaacccagcccccagaggggccc aagttocctogtgtgaagaactgggaggtggggagcatcacctatgacaccctoagcgcccaggegcagcaggatgggcc 50 etgeaccccaagacgetgeetgggeteeetggtattteeacggaaactacagggeeggeeeteeeeeggeeeeeeggeee ctgagcagctgctgagtcaggcccgggacttcatcaaccagtactacagctccattaagaggagcggctcccaggcccac ggetaageaggeetggegeaaegeteeeegetgegtgggeeggateeagtgggggaagetgeaggtgttegatgeeeggg actgcaggtctgcacaggaaatgttcacctacatctgcaaccacatcaagtatgccaccaaccggggcaaccttcgctcg 60 caaagtcaccatcgtggaccaccacgccgccacggcctctttcatgaagcacctggagaatgagcagaaggccagggggg gctgccctgcagactgggcctggatcgtgccccccatctcgggcagcctcactcCtgttttccatcaggagatggtcaac tatttcctgtcccggccttccgctaccagccagacccctggaaggggagtgccgccaagggcaccggcatcaccaggaa 65 gaagacctttaaagaagtggccaacgccgtgaagatctccgcctcgctcatgggcacggtgatggcgaagcgagtgaagg cgacaatcctgtatggctccgagaccggcccagggcccagagctacgcacagcaggctggggagactctttccggaaggctttt gatccccgggtcctgtgtatggatgagtatgacgtggtgtccctcgaacacgagacgctggtgctggtggtaaccagcac atttgggaatggggatcccccggagaatggagagagctttgcagctgccctgatggagatgtccggcccctacaacagct cccctcggccggaacagcacaagagttataagatccgcttcaacagcatctcctgctcagacccactggtgtcctcttgg 70 cggcggaaqaggaaggagtccagtaacacagacagtgcaggggccctgggcaccctcaggttctgtgtftcgggctcgg tgcagctgggccagggcgacgagctgtgcggccaggaggaggccttccgaggctgggcccaggctgccttccaggccgcc tgtgagaccttctgtgtgggagaggatgccaaggccgcccgagacatcttcagcccaaacggagctggaagcgcca gaggtaccggctgagcgcccaggccgagggcctgcagttgctgccaggtctgatccacgtgcacaggcggaagatgttcc 75 aggetacaateegeteagtggaaaaeetgeaaageageaagteeaegagggeeaccateetggtgegeetggacaeegga ggccaggaggggctgcagtaccagccgggggaccacataggtgtctgccggcccaaccggcccggccttgtggaggcgct gctgagccgcgtggaggacccgcggcgcccctgagccgtggcagtagagcagcttggagaaggcagccctggtggcccccggctgcacgctgcaccaggcttcaccttcttcttggacatcacc tccccaccagccctcagctcttgcggctgctcagcacttggaagaagagccagggaacagcaggagctggaggccctcagccaggatcccgacgctacgaggagtggaagtggaagtggtccgctgcccacgctgctggaggtggagcagttcccgt agcacccacccaggagagatccacctcactgtagctgtgctggcatacaggactcaggatgggctgggccccctgcacta

tggagtetgetecacgtggetaagecagetcaageceggagaecetgtgeeetgetteateeggggggeteeetteettee ggctgccacccgatcccagcttgccctgcatcctggtgggtccaggcactggcattgcccccttccggggattctggcag gagcggctgcatgacattgagagcaaagggctgcagcccactcccatgactttggtgttcggctgccgatgctcccaact ggaggggacatggagctggacgaggccggcgacgtcatcggcgtgctgcgggatcagcaacgctaccacgaagacattt tegggeteaegetgegeaeceaggaggtgaeaageegeataegeaeceagagetttteettgeaggagegteagttgegg ggcgcagtgccctgggcgttcgaccctcccggctcagacaccaacagcccctgagagccgcctggctttcccttccagtt 10 tgcctcgggcctgggtccgccttaatctggaaggcccctccagcagcggtaccccagggcctactgccacccgcttcctgttcttagtccgaatgttagattcctcttgcctctccaggagtatcttacctgtaaagtctaatctctaaatcaagta tttattattgaagatttaccataagggactgtgccagatgttaggagaactactaaagtgcctaccccagctc (SEQ ID NO:11878) 15 gctgagcagggtcctggtggccgtggctatggacactctgctgctgcgggatcaccgagatgagcagcagctgctcag ggggtccagtatgggcagccagggaggtccgtgaagctgtgttgtcctggagtgactgccggggacccagtgtcctggtt aatgtgactgaggtgaacccactgggtgccagcacacgcctgctggatgtgagcttgcagagcatcttgcgccctgaccc accccagggcctgcgggtagagtcagtaccaggttacccccgacgcctgcgagccagctggacataccctgcctcctggc cgtgccagcccacttcctgctcaagttccgtttgcagtaccgtccggcgcagcatccagcctggtccacggtggagcca gctggactggaggaggtgatcacagatgctgtggctgggctgccccatgctgtacgagtcagtgcccgggactttctaga tgctggcacctggagcacctggagcccggaggcctggggaactccgagcactgggaccataccaaaggagataccagcat ceteggetacttgateacagggactetgtggagcaggtagetgtgetggegtetttgggaateetttettteetgggact 30 tggcctcagtgattccagtggacaggcgtccaggagctccaaacctgtagaggacccaggagggcttcggcagattccac gtttggagcccatttctgtgagaccctgtatttcaaatttgcagctgaaaggtgcttgtacctctgatttcaccccagag ttggagttctgctcaaggaacgtgtgtaatgtgtacatctgtgtccatgtgtgaccatgtgtctgtgaaggccagggaac ggaagatgagcagctgctcagggctagagcagggtcctggtggccatggctacagcctggtgtctgcctcctccccc
tgccccaaggcctgggcacccaggggtccagtatgggcagccagggcaggtccgtgaagctgtttttctggagtagc
tgccggggaacccagtgtcctggtttcgggatggggagccaaagctgctccagggacctgactctgggcatgggcatgaac
tggtcctggcccaggcagacagcactgatgagggaacctacatctgccagaccctggatggtgcacttggggcacagtg
accctgcagctgggctaccctccagcccgcctgttgtctcctgccaagcagccgactatgagaacttctcttgcacttg gagttctggagccagtaccggattaatgtgactgaggtgaacccactgggtgccagcacacgcctgctggatgtgagctt 45 gcagagcatcttgcgccctgacccaccccagggcctgcgggtagagtcagtaccaggttacccccgacgcctgcgagcca getggacataccetgcctcctggccgtgccagccccacttcctgctcaagttccgtttgcagtaccgtccggcgcagcat ccagcctggtccacggtggagccagctggactggaggaggtgatcacagatgctgtggctgggctgccccatgctgtacg agtcagtgcccgggactttctagatgctggcacctggagcacctggagcccggaggcctggggaactccgagcactggga ccataccaaaggagataccagcatggggccagctacacacgcagccagaggtggagcctcaggtggacagcctgctcct 50 ccaaggccctccctccaaccacaccctcggctacttgatcacagggactctgtgggagcaggtagctgtgctggcgtcttt 55 cttggcctttccttgcaggggttgtgcaggtgtgaataaagagaataaggaagttcttggagattatactcagaaaaaaa aa (SEQ ID NO:11894) 60 getetggtaagtgactgecattggteecteagectetgatecteacacatgetetgatgeccatagaceacatteatete caccettcatgactgcctgctgaacctgtctgattctggaactacctcccatacctccatcccctatgccccacttgat attccagtggaca (SEQ ID NO:11895) getgtagetggtgagaggaagtectagaggetatggaeaetetgetgetgggateaeegagatgageagetgeteeeaggetgateaggggtgetgateaggetgeteeta ggggtccagtatgggcagccagggaggtccgtgaagctgtgttgtcctggagtgactgccggggacccagtgtcctggtt togggatggggagccaaagctgctccagggacctgactctgggctagggcatgaactggtcctggcccaggcagacagca ctgatgagggcacctacatctgccagaccctggatggtgcacttgggggcacagtgaccctgcagctgggctaccctcca 70 acecaccogotacotçacotoctacaggaagaagacagtoctaggagotgatagocagaggaggagtocatocacagggo cctggccatgcccacaggatcccctaggggctgcccgctgtgttgtccacggggctgagttctggagccagtaccggatt aatgtgactgaggtgaacccactgggtgccagcacacgcctgctggatgtgagcttgcagagcatcttgcgccctgaccc accccagggcctgcgggtagagtcagtaccaggttacccccgacgcctgcgagccagctggacataccctgcctcctggc 75 80

ctataattetgtettgetggtgtggatagaaaccaggeaggacagtagatecetatggttggateteagetggaagttet

gtttggagcccatttctgtgagaccctgtatttcaaatttgcagctgaaaggtgcttgtacctctgatttcaccccagag ttggagttetgetcaaggaacgtgtgtaatgtgtacatetgtgtecatgtgtgaceatgtgtetgtgaaggecagggaac tgcaggtgtgaataaaggaagatgagcagctgctcagggctgagcagggtcctggtggccgtggctacagccctggt gttgtcctggagtgactgccgggggacccagtgtcctggtttcgggatgggagccaaagctgctccagggacctgactct gggctagggcatgaactggtcctggcccaggcagacagcactgatgagggcacctacatctgccagaccctggatggtgc ctaggagetgatagccagaggaggagtccatccacagggccctggccatgcccacaggatcccctaggggctgcccgctg tgttgtccacggggctgagttctggagccagtaccggattaatgtgactgaggtgaacccactgggtgccagcacacgcc tgetggatgtgagettgeagageatettgegeeetgaceeaceeeagggeetgegggtagagteagtaceaggttaceee cgacgcctgcgagccagctggacataccctgcctcctggccgtgccagcccacttcctgctcaagttccgtttgcagta ccgtccggcgcagcatccagcctggtccacggtggagccagctggactggaggtgatcacagatgctgtggctgggc tgccccatgctgtacgagtcagtgcccgggactttctagatgctggcacctggagcacctggagcccggaggcctgggga actccgagcactgggaccataccaaaggagataccagcatggggccagctacacacgcagccagaggtggagcctcaggt ggacagecetgetectecaaggecetecetecaaccaccacceteggetacttgateacagggactetgtggagcaggtag ctgtgctggcgtctttgggaatcctttctttcctgggactggtggctggggccctggcactggggctctgggctgaggctg ${\tt agacggggtgggaaggatggatccccaaagcctgggttcttggcctcagtgattccagtggacaggcgtccaggagctccagtggattccagtgatt$ aaacctgtagaggacccaggagggcttcggcagattccacctataattctgtcttgctggtgtgatagaaaccaggcag gacagtagatccctatggttggatctcagctggaagttctgtttggagcccatttctgtgagacctgtatttcaaattt gcagctgaaaggtgcttctacctctgatttcaccccagagttggagttctgctcaaggaacgtgtgtaatgtgtacatct atagaccacattcatctccacccttcatgactgcctgctgaacctgtctgattctggaactacctccccatacctccatc ccctatgccccacttgattttaactgattcctctcctgaccctttactaataaaccctttggcggagactgagataaccc 30 gggttcttggcctcagtgattccagtggaca (SEQ ID NO:11896) atgcaattagctcattgtgtggataaaaaggtaaaaccattctgaaacaggaaaccaatacacttcctgtttaatcaaca aatctaaacatttattetttteatetgtttactettgetettgtecaceacaatatgetatteacatgtteagtgtagtt ggcgttaattgcatgaattagagctatcacctaagtgtgggctaatgtaacaaagagggatttcacctacatccattcag tcagtctttgggggtttaaagaaattccaaagagtcatcagaagaggaaaaatgaaggtaatgttttttcagacaggtaa agtetttgaaaatatgtgtaatatgtaaaacattttgacacccccataatatttttccagaattaacagtataaattgca tetettgtteaagagtteeetateaetetetttaateaeteeegtaaeeteaaeteetgeeacaatgtacaggatg caactcctgtcttgcattgcactaagtcttgcacttgtcacaaacagtgcacctacttcaagttctacaaagaaaacaca gctacaactggagcatttacttctggatttacagatgattttgaatggaattaatgtaagtatatttcctttcttactaa aattattacatttagtaatotagotggagatoatttottataacaatgoattatactttottagaattacaagaatooca aactcaccaggatgctcacatttaagttttacatgcccaagaaggtaagtacaatatttt (SEQ ID NO:11897) gaattcccttttcctagtcaaagaaagggtgacagacagcacctggaaaatcgtgtcactcccaccctaatactgcgct acagettggaagagagtagtggtteteecageatgeagettgagatetgagaatggacagaetgeeteeteaagtgggte cctgaccccgagtaacctaactgggaggcacccaagtaggggcagactgacacctcacatggctgggtactcctctga 50 gaaaaaacttccagaggaacgatcaggcagcaacatttgctgttcaccaatatccactgttctgcagcctcctgtgctaa tacccaggcaaatgggtctggagaggacctccagcaagctccaacagacctacagctgagggtcctgactgttagaagga aaactaacaaacagaaaggacatccacaccaaaaccctatctgtacggcaccatcatcaaagaccaaaaggtagataaaaac cacaaagatggggaaaaaaacacagcagaaaaactggtaactctaaaaattagagcgcttctcctcctccaaaaggaacgc agctcctcaccagcaatggaaccaagctggacagagaatgactttgacgagttgagagaagaagacttcagatgatcaaa 55 tagaataaccaatgcagagaagtccttaaaggacctgatggagctgaaaaccatggcacaagaactacatgacaaatgca gagaagtttagagaaaaaaagaaaaagaaatgaacaaagcctccaagaaatatgggactatgtgaaaagaccaaatct acgtctgattggtgtacctgaaagtgatggggagaatggaaccaagctggaaaacactctgcaggatattatccaagaga gcaactccaagacactaattgttagattcactaaagttgaaatgaaggaaaaatgttaagggcagcaggaggagaaga tcagcttacccacaaaggaaagccatcagattaacagctgatctctcggcagaaaactctacagaccagaagagagtgg cactaaacatggaaaggaacaaccggtaccagccactgcaaaacatgccaaattgtaaacaccattgaggccaggaaga aactgcatcaactaacgagcaaaataaccagctaacatcatcatgacaggatcaaattcacacataacaatattaacctt azatgtaaataggctaaatgctccaattaaaaqacacagactgqcaaactggataaagagtcaagacccatcagtgtgct qqaaacaaaaaaaggcaqgggttqcaatcctaqtctctgataaaacagactttaaaccaacaaagatcaaaagagacac 70 gagcacctagattcataaagcaagtccttagagacctacaaagagacttagactcccacacaataataatgggagacttt aacaccccactgtcaacattagacagatcaatgagacagaaaattaacaaggatatccaggaattgaactcaactctgca ccaagoggacctaatagacatctacagaactctccaccccaaatcaacagaatatacattcttttcggcaccacaccaca ccgattccaaaattgaacacatagttggaagtaaagcactcctcagcaaatgtaaaagaacagaaagtacaacaaactgt 75 caacctgctcctgaatgactactgggtacataacgaaatgaaggcagaagtaaagatgttctttgaaaccaacgagaaca aagacacaacataccagaatctctgggacacattcaaagcagtgtgtagaggaaaatttatagcactaaatgcccacaag agaaagcaggaaagatctaaaattgacagcctaacatcacaattaaaagaactagagaaacaagagcaaacacattcaaa agctagcagaaggcaagaaataactacaatcagagcagaactgaaggagatagagacatacaaaaaacccttcaaaaaat caatgaatccaggagctggttttttgaaaagatcaacaaaattgatagaccactagcaaaactaatacagaagagagaag aatcaaatagacacaataaaaaatgataaacgggatatcaccactgatcccacagaaatacaaactaccatcaaagaata ctataaacacctctatgcaaataaactagaaaatctagaagaaatggataaattcctcgacacatacaccctcccaagac

taaaccaggaagaagctgaatctctgaatagaccaataacaggctctgaaattgaggcaacaattaacaccttaccaacc aataaaagtccaggaccagatggattcacagccaaattctaccagaggtacaaggaggagctggtacgattccttctgaa actattccaatcaatagaaaaagaggaatcctccctaactcattttatgaggccagcatcatcatcataccaaagcctg gcagagacacaacaaaaaaagagaatttcagaccaatatccctgatgaacatcgatgcaaaaatttttaataaaatactg gcaaactgaatccagcagcacatcacaaagcttatccaccatgatcaagctggcttcattcctgggatgcaaggctggtt gcagaaaaggcctttgacaaaattcaacagcccttcatgctaaaaactctcaataaattaggtactgatgggacgtatct caaaataataagcgctatctatgaccaacccacagccaatatcatactggatgggcaaaaactggaagcattccctttga aaactggcacaagacagggatgcctctctcaccactcctattcaacaagtgttcgaagttctggcagggcaatcaggc aggagaaagaaataaagggtattcaattaggaaaagaggaggtcaaattgtccctgtttgcagatgacatgattgtatat atagaaaaccccattgtctcagcccaaaatctccttaagctgataagcaacttcagcaaagtctcaggatcaaaatcaat gtgcaaaaatcacaagcattcttatacaccaataacagacaaacagagagccaaatcatgagtgaactcccattcacaat tgcttcaaagagaataaaatacctaggaatccaactcacaagggatgtgagagacctcttcaaggagaactataaaccac tgctcaatgaaatgagaggatacagataaatggaagaacattccatgctcatgggtaggaagaatcaatatcgtgaaaaat ggccatactgcccaaggtaattttatagattcaatgccatcccatcaagctaccaatgactttcttcacagaattggaa aaaactactttaaagttcatatggaaccaaaaaagagccgcattgccaagtcaatcctaagccaaaagaacaaagctag aggeatcacactacetgacttcaaactatactacaaggetacagtaaccaaaacagcatggtactggtaccaaagcagag atatagaccaatggaacaaaacagtgccctcagaaataatactgcatatctacaaccatctgatctttgacaaacctgac aaaaacaagcaatgggaaaaggattccctatttaataaatggtgctgggaaaactggctagccatatgtagaaagctgaa attggatcccttccttacaccttgtacaaaaattaattcaagatggattacagacttaaatgttagacctaaaaccataa 20 aaaccctagaagaaacctaggcaataccattcaggacataggcatgggcaagaacttcatgtctagaaccaaaagta atggcaacaaaagccaaaattgacaaatgggtctaattaaacaaaggacttctgcacagcaaaagaaactaccatcaga gtgaagaggcaacctacagaatgggagaaaatttttgcaatctgacaaaagggctaatttttgcatctgacaaagggcta atatocaqaatotacaatgaactcaaacaaatttacaaqaaaaaaaacaaatttacaaqaaaaaaacaaaatttacaagaa 25 aaaaacaaatttacaagaaaaaacaacacacccatcaaaaagtgggcaaaggataagaacagtcacttctcaaaagaa gacatttatqcaqccaaaaqacacatqaaaaaattctcatcatcactggccatcaqaqaaatqcaaatcaaaaccacaat gagataccatctcacaccagttagaatggcgatcattaaaaagtcaagaaacaacaggtgctggagagggatgtggagaaa taggaacacttttacactgttagtgggactgtaaactagttcaacattgtggaaatcagtatggcgattcctcagggatc tagaactagaaataccatttgacccagccatcccattactgggtatatacccaaaggattataaatcatgctgctataaa 30 gacacttgcacacatatgtttattgtggtactattcacaatagcaaagacttggaattaacccaaatgtccaacaatgat agactagattaagaaaatgtggcacatatacactatggaatactttgcagccataaaaaaggatgagttcatgtcctttg tagggacatggatgaagctggaaaccatcattctcggcaaactatcgcaaggtcaaaaaaccaaacaccgcatgttctca ctcataggtggtaactgaacaatgagaacactggtcacaggaaggggaacatcacgcactggggcctgttgtggggtgg ggggagtgggcagggatagcattaggagacatacctaatgttaaatgacgatttaatgggtgcagcacaccaacatggca 35 ${\tt ccgacagagtgaagtgaatagtagtagtggcacaatctcatcctactctatgtagcctaatgggtccagaattta}$ tcatcactattttacactggaaaaaagatgagattatgaggggtcagggaggctttgagtttttgctctaacttcaccactaattaagaatgtgatcttgggtaagccactttaacctctgtaaatgtcaaatttcttatcagtaaaatgtgactataca agacaataaatttgaaaatactttgcaaaattgaaagtaccatggaaataattcttcaatcccaaaaggttatgaacatt attaaaatttgcacatggaagagcacacaccacagagacataactgtgatcataaacagatttacaaaagtggtgtttcattatggagggccatagggctgataaagacaaatgcatcaccaagctatgtccgagctcattcagatttttacaggaaac acaqaqcttctaqctqaattatctctqqatqqtqtqqaaattqtccaacacqttcctaatttcaaaqaaacaqaactgaa tcttgaaaacccaagaggcctttacagaaactgacaagagatgaattaatataggtatcaagctacagaccaaattaaag ttttacaaaactttgaaagagggtcagaaagaagaaacttatgggaagcagagtcctggaaagtcagctttgatggagtg acaatatgtgcaacacagtgagcaatctcttaggtaggcagcttcagggatgggggttgccctttgaaaggacttgggc actcttgagtctaagaggctaagtcacaaacaatgctaagcaactaaaaatagcttcttgtttaatagtaaaattctgca tagtaaaaggagaagcagggggtatgacacacgtggtagttagcagtctactagtgactttactgccacaaccagaaaaag 50 tgaaaaaggccaacttctataatggtgcctactgtgcattaacagagataaactaggggtctaagaactcagttttctac agggtcccagaagtatagccatatattgccccattctctaatggaaatagccagagaaatagaaatatcaagactggaga acatcaaatacctcattggaaaagcccccacataggaaaatgtgtgggcttgaattcttccattctggaagggtaaaggc ctgagtgatgatgctgggattagacactgaaactctttagagaagcaaaacagtataataaagctgtactttattatat taaataaataacacacagactaccaaatagcctgccccttataacagcgttaatgtgattttgatctgaaatgtatagag 55 gagggactataatctttatttttaaatttgttttatattctccgaacattacctaacgcatagaaaactcttcttgaacc attittetetgttetttgtaaaatattacatttgaetgtteettagaetgetttaateatteetgeetatgeaceteet caaaatecagtttaaattaattgtteettatteaagatteettatateeaceteettggggeageaateacetateace caggactacacttgtgtatgtacatatcttccctattacaaatcaggttctttgaaaaaatacaaatggtaagagagtgaatttttggaagtacattctcttttcaaatccttcttctgccccttactggcaataagggctgagtgacctagagcaa attacttaacttetetgageeteagttttetaatetgeaaaataggageeateaetteacaagtetgtaagaettatatt agactaagtgcctgcctgtacactgttctcttttctcttttctatatacctgaaggcattataggtgctagatgtctgt gtaagaaataaataaggccatagaatggaagctttacaaggactctctgtgagacaggatctccctcaagtgtccccaggt atcctagtcttctgactaaaaacaagatcatatttcataacgattattgttacattcatagtgtcccaggtgatttagag qataaataaaaatccattaaaqaggtaaagacataaaaacgagaaacatggactggtttacacataacacatacaaagtc tattataaaactagcatcagtatccttgaatgcaaacctttttctgagtatttaacaatcgcaccctttaaaaaatgtac aatagacattaagagacttaaacagatatataatcattttaaattaaatagcgttaaacagtacctcaagctcaataag 70 tgtgtggataaaaaggtaaaaccattctgaaacaggaaaccaatacacttcctgtttaatcaacaaatctaaacatttat tettttcatetgtttactettgetgttgtccaccacaatatgetattcacatgttcagtgtagttttatgacaaagaaaa 75 ttaaagaaattccaaagagtcatcagaagaggaaaaatgaaggtaatgtttttcagacaggtaaagtctttgaaaatat gtgtaatatgtaaaacattttgacacccccataatatttttccagaattaacagtataaattgcatctcttgttcaagag ttccctatcactctctttaatcactactcacagtaacctcaactcctgccacaatgtac (SEQ ID NO:11898) ttaatcaacaaatctaaacatttattctttcatctgtttactcttgtttcatctgtttcaccacaatatgctattcacatgtt tcatacagaaggcgttaattgcatgaattagagctatcacctaagtgtgggctaatgtaacaaagagggatttcacctac atccattcagtcagtctttgggggtttaaagaattccaaagagtcatcagaagaggaaaaatgaaggtaatgttttttca gacaggtaaagtctttgaaaatatgtgtaatatgtaaaacattttgacacccccataatatttttccagaattaacagta

taaattgcatctcttgttcaagagttccctatcactctctttaatcactactcacagtaacctcaactcctgccacaatg tacaggatgcaactcctgtcttgcattgcactaagtcttgcacttgtcacaaacagtgcacctacttcaagttctacaaa gaaaacacagctacaactggagcatttactgctggatttacagatgattttgaatggaattaatgtaagtatatttcctt tettaetaaaattattaeattagtaatetagetggagateatttettaataacaatgeattataetttettagaattae aagaatcccaaactcaccaggatgctcacatttaagttttacatgcccaagaaggtaagtacaatattttatgttcaatt tctgttttaataaaattcaaagtaatatgaaaatttgcacagatgggactaatagcagctcatctgaggtaaagagtaac tttaatttgttttttgaaaacccaagtttgataatgaagcctctattaaaacagttttacctatattttaatatata ttgtgtgttggtgggggtgggaagaaacataaaaatattctcacctttatcgataagacaattctaaacaaaaatg ttcatttatggtttcatttaaaaatgtaaaactctaaaatatttgattatgtcattttagtatgtaaaataccaaaatct atttccaaggagcccacttttaaaaatcttttcttgttttaggaaaggtttctaagtgagaggcagcataacactaatag cacagagtctggggccagatatctgaagtgaaatctcagctctgccatgtcctagctttcatgatctttggcaaattacc tactotgtttgtgattcagtttcatgtctacttaaatgaataactgtatatacttaataggctttgtgagaattagtaa gttaaatgtaaagcactcagaaccgtgtctggcataaggtaaataccatacaagcattagctattattagtagtattaaa gataaaattttcactgagaaatacaaagtaaaattttggactttatctttttaccaatagaacttgagatttataatgct atatgacttattttccaagattaaaagcttcattaggttgtttttggattcagataggcataagcataatcatccaagc tcctaggctacattaggtgtgtaaagctacctagtagttgtgccagttaagagagaatgaacaaaatctggtgccagaaa gagettgtgecagggtgaatccaageccagaaaataataggatttaaggggacacagatgcaatcccattgactcaaatt ctattaattcaagagaaatctgcttctaactacccttctgaaagatgtaaaggagacagcttacagatgttactctagtt taatcagagccacataatgcaactccagcaacataaagatactagatgctgttttctgaagaaaatttctccacattgtt 20 $\tt catgccaaaaacttaaacccgaatttgtagaatttgtagtggtgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatagatggacatatcaggggattgaattgaaagcgcaatatcagggattgaattgaaagcgcaatagattgaattgaaagcgcaatagattgaa$ tcatggaaatctaagtttgaaaccaaaagtaatgataaactctattcatttgttcatttaaccctcattgcacatttaca tacttcaaaagatgactgtgagaagtaaatgggcctattttggagaaaattcttttaaattgtaatataccatagaaata tgaaatattataatatataagaatcaagaggcctgtccaaaagtcctcccaaagtattataatcttttattcactggg 25 30 cttccacattctaactcatctggttctaatgattttctatgcagattggaaaagtaatcagcctgcatctgtgataggca cttacgatgcagaaagtctaacattttgcaaagccaaattaagctaaaaccagtgagtcaactatcacttaacgctagtc ataggtacttgagccctagtttttccagttttataatgtaaactctactggtccattctttacagtgacattgagaacag ctgagctgatgataattattattctaggccacagaactgaaacatcttcagtgtctagaagaagaactcaaacctctgga 35 ggaagtgctaaatttagctcaaagcaaaaactttcacttaagacccagggacttaatcagcaatatcaacgtaatagttc ggcagattttattatatatttttcgattcttcagatcatttactgaaatagccaatactgattacctgaaaggcttttca ggccagtggactaaacaacaacaatcttttagaggcaatcccactttcagaatcttaagtatttttaaatgcacagg aagcataaaatatgcaagggactcaggtgatgtaaaagagattcacttttgtcttttatatcccgtctcctaaggtata aaattcatgagttaataggtatcctaaataagcagcataagtatagtagtaaaagacattcctaaaagtaactccagttg tgtccaaatgaatcacttattagtggactgtttcagttgaattaaaaaatacattgagatcaatgtcatctagacattg acagattcagttccttatctatggcaagagttttactctaaaaataattaacatcagaaaactcattcttaactcttgata caaatttaagacaaaaccatgcaaaaatctgaaaactgtgtttcaaaagccaaacactttttaaaataaaaaatcccaag atatgacaatatttaaacaattatgcttaagaggatacagaacactgcaacagttttttaaaagagaatacttatttaaa gggaacactctatctcacctgcttttgttcccagggtaggaatcacttcaaatttgaaaagctctcttttaaatctcact 50 atatatcaaaatatttcctccttagcttatcaactagaggaagcgtttaaatagctcctttcagcagagaagcctaattt ctaaaaagccagtccacagaacaaaatttctaatgtttaaacttttaaaagttggcaaattcacctgcattgatactatg atggggtagggataggtgtaagtatttagaagatgttcttcacacaaatttatcccaaacggaagcatgtcctagcttac tctagtgtagttctgttctgctttggggaaaatataaggagattcacttaagtagaaaaataggagactctaatcaagat ttagaaaagaagaaagtataatgtgcatatcaattcatacatttaacttacacaaatataggtgtacattcagaggaaaa 55 agggaaaaaatttttgtgttcattgactgaattaacaaatgaggaaaatctcagcttctgtgttactatcattttggtatc aataaaggcaacaggcctataagacttcaattgggaataactgtatataaggtaaactactctgtactttaaaaaattaa catttttcttttatagggatctgaaacattcatgtgtgaatatgctgatgagacagcaaccattgtagaatttctga 60 acagatggattaccttttgtcaaagcatcatctcaacactgacttgataattaagtgcttcccacttaaaacatatcagg aaaatatttattattatgttgaatgttaaatatagtgctatgtagattggttagtaaaactatttaataaatttgataaa tataaacaageetggatatttgttattttggaaacageacagagtaageatttaaatatttettagttaettgtgtgaac 65 tttaaagaaattccaaagagtcatcagaagaggaaaaatgaaggtaatgttttttcagactggtaaagtctttgaaaata 70 tgtgtaatatgtaaaacattttgacacccccataatatttttccagaattaacagtataaattgcatctcttgttcaaga gttccctatcactetttaatcactactcacagtaacctcaactcctgccacaatgtacaggatgcaactcctgtcttgca ttgcactaagtettgcacttgtcacaaacagtgcacctacttcaagttetacaaagaaaacacagetacaactggagcat ttactgctggatttacagatgattttgaatggaattaatgtaagtatatttcctttcttactaaaattattacatttagt aatctagctggagatcatttettaataacaatgcattatactttettagaattacaagaatcccaaactcaccaggatgc 75 tcacatttaagttttacatgcccaagaaggtaagtacaatattttatgttcaatttctgttttaataaaattcaaagtaa tatgaaaatttgcacagatgggactaatagcagctcatctgaggtaaagagtaactttaatttgtttttttgaaaaccca aacataaaaatattctctctcactttatcgataagacaattctaaacaaaaatgttcatttatggtttcatttaaaaat gtaaaactctaaaatatttgattatgtcatittagtatgtaaaataccaaaatctatttccaaggagcccacttttaaaa atettttettgttttaggaaaggtttetaagtgagaggeagcataacaetaatageacagagtetggggeeagatatetg aagtgaaatctcagctctgccatgtcctagctttcatgatctttggcaaattacctactctgtttgtgattcagtttcat

qtctqqcataaqqtaaataccatacaaqcattagctattattagtagtattaaagataaaattttcactgagaaatacaa agtaaaatttttggactttatctttttaccaatagaacttgagatttataatgctatatgacttattttccaagattaaaa gcttcattaggttgtttttggattcagatagagcataagcataatcatccaagctcctaggctacattaggtgtataaag ctacctagtagctgtgccagttaagagagaatgaacaaaatctggtgccagaaagagcttgtgccagggtgaatccaagc ccagaaaataataggatttaaggggacacagatgcaatcccattgactcaaattctattaattcaagagaaatctgcttc taactacccttctgaaagatgtaaaggagacagcttacagatgttactctagtttaatcagagccacataatgcaactc agcaacataaagatactagatgctgttttctgaagaaaatttctccacattgttcatgccaaaaacttaaacccgaattt aattetgagatttagtgtgtgttatttataaagtggagatgatactteactgcetacttcaaaagatgactgtgagaagta agaggcctgtccaaaagtcctcccaaagtattataatcttttatttcactgggacaaacatttttaaaaatgcatcttaat 15 gtagtgattgtagaaaagtaaaaatttaagacatatttaaaaaatgtgtcttgctcaaggctatattgagagccactacta gattettaactettagaetateaaatattataateatagaatgtgatttttatgeetteeacattetaateteatetggt tctaatgattttctatgcagattggaaaagtaatcagcctacatctgtaataggcatttagatgcagaaagtctaacatt ttgcaaagccaaattaagctaaaaccagtgagtcaactatcacttaacgctagtcataggtacttgagccctagtttttc 20 cagttttataatgtaaactctactggtccatctttacagtgacattgagaacagagagaatggtaaaaactacatactgc tactccaaataaaataaattggaaattaatttctgattctgacctctatgtaaactgagctgatgataattattattcta ggccacagaactgaaacatcttcagtgtctagaagaagaactcaaacctctggaggaagtgctaaatttagctcaaagca aaaactttcacttaagacccagggacttaatcagcaatatcaacgtaatagttctggaactaaaggtaaggcattacttt atttgctctcctggaaataaaaaaaaaaaaagtaggggaaaagtaccacattttaaagtgacataacatttttggtattt 25 gtaaagtacccatgcatgtaattagcctacattttaagtacactgtgaacatgaatcatttctaatgttaaatgattaac tggggagtataagetactgagtttgcacctaccatctactaatggacaagcetcatcccaaactccatcacctttcatat taacacaaaactgggagtgagagagagagtgactgagtttaagtttcacagaaacgcaggcaagattttattatatattttt caagttccttcacagatcatttactggaatagccaatactgagttacctgaaaggcttttcaaatggtgtttccttatca 30 acaacaatctttttagaggcaatcccactttcagaatcttaagtatttttaaatgcacaggaagcataaaatatgcaagg gactcaggtgatgtaaaagagattcacttttgtcttttatatcccgtctcctaaggtataaaattcatgagttaatagg tatectaaataagcagcataagtatagtagtaaaagacatteetaaaagtaaeteeagttgtgteeaaatgaateaetta ttagtggactgtttcagttgaattaaaaaatacattgagatcaatgtcatctagacattgacagattcagttccttatc tatggcaagagttttactctaaaataattaacatcagaaaactcattcttaactcttgatacaaatttaagacaaaacca tgcaaaaatctgaaaactgtgtttcaaaagccaaacactttttaaaataaaaaaatcccaagatatgacaatatttaaac 35 aattatgcttaagaggatacagaacactgcaacagttttttaaaagagaatacttatttaaagggaacactctatctcac ctgcttttgttcccagggtaggaatcacttcaaatttgaaaagctctcttttaaatctcactatatatcaaaatagttgc ctccttagcttatcaactagaggaagcgtttaaatagctcctttcagcagagaagcctaatttctaaaaaagccagtccac agaacaaaatttctaatgtttaaagcttttaaagttggcaaattcacctgcattgatactatgatggggtagggatagg 40 ctcgtttcqtctttggggaaaatataaggagattcacttaagtagaaaaataggagactctaatcaagatttagaaaaga agaaagtataatgtgcatatcaattcatacatttaacttacacaaatataggtgtacattcagaggaaaagcgatcaagt tttttgtgttcattgactgaattaacaaatgaggaaaatctcagcttctgtgttactatcatttggtatcataacaaaat 45 acaggcctataagacttcaattgggaataactgtatataaggtaaactactctgtactttaaaaaattaacatttttctt ttalagggatctgaaacaacattcatgtgtgaatatgctgalgagacagcaaccattgtagaatttctgaacagatggat taccttttgtcaaagcatcatctcaacactgacttgataattaagtgcttcccacttaaaacatatcaggccttctattt atttaaatatttaaattttatatttattgttgaatgtatggtttgctacctattgtaactattattcttaatcttaaaactataaatatggatctttatgattctttttgtaagccctaggggctctaaaatggtttcacttattatcccaaaatatt 50 tattattatgttgaatgttaaatatagtatctatgtagattggttagtaaaactatttaataaatttgataaatataaac aagcctggatatttgttattttggaaacagcacagagtaagcatttaaatatttcttagttacttgtgtgaactgtagga tggttaaaatgcttacaaaagtcactctttctctgaagaaatatgtagaacagagatgtagacttctcaaaaagcccttgc tttgtcctttcaagggctgatcagacccttagttctggcatctcttagcagattatattttccttcttcttaaaatgcca aacaccaaacactcttgaaactcttctatagatttggtgtggc (SEQ ID NO:11900)
ccccataatattttttccagaattaacagtataaattgcatctcttgttcaagagttccctatcactctttaatcacta ctcacaqtaacctcaactcctgccacaatgtacaggatgcaactcctgtcttgcattgcactaagtcttgcacttgtcac aaacaqtqcacctacttcaaqttctacaaaqaaaacacagctacaactggagcatttactgctggatttacagatgattt tgaatggaattaataattacaagaatcccaaactcaccaggatgctcacatttaagttttacatgcccaagaaggccaca 60 qaactqaaacatcttcaqtqtctaqaaqaaqaactcaaacctctggaggaagtgctaaatttagctcaaagcaaaaactt tcacttaagacccagggacttaatcagcaatatcaacgtaatagttctggaactaaagggatctgaaacaacattcatgt gtgaatatgctgatgagacagcaaccattgtagaatttctgaacagatggattaccttttgtcaaagcatcatctcaaca gttgaatgtatggtttgctacctattgtaactattattcttaatcttaaactataaatatggatcttttatgattctt 65 atctatgtagattggttagtaaaactatttaataaatttgataa (SEQ ID NO:11901) atgcaattagctcattgtgtgggataaaaaggtaaaaccattctgaaacaggaaaccaatacacttcctgtttaatcaaca aatctaaacatttattctttcatctgtttactcttgctcttgtccaccacaatatgctattcacatgttcagtgtagtt 70 ggcgttaattgcatgaattagagctatcacctaagtgtgggctaatgtaacaaagagggatttcacctacatccattcag tcagtctttgggggtttaaagaaattccaaagagtcatcagaagaggaaaaatgaaggtaatgttttttcagacaggtaa agtotttgaaaatatgtgtaatatgtaaaacattttgacacccccataatatttttccagaattaacagtataaattgca totottgttcaagagttccctatcactctctttaatcactactcacagtaacctcaactcctgccacaatgtacaggatg caactcctgtcttgcattgcactaagtcttgcacttgtcacaaacagtgcacctacttcaagttctacaaagaaaacaca 75 aactcaccaggatgetcacatttaagttttacatgeccaagaaggtaagtacaatattttgaatteccttttectagtca aagaaaggggtgacagacagcacctggaaaatcgtgtcactcccaccctaatactgcgcttttccaatggtcttagcaaa gtctgagatcaaactgcaaggtggcagtgaggctgggagaggggtgtgcaccattgccgaggcttgagtaggtaaacaaa

gcagggcatagccaaacaaaggcagcagaaacctctgcagacttaaatgtccctgtctgacagcttggaagagagtagt ggttctcccagcatgcagcttgagatctgagaatggacagactgcctcctcaagtgggtccctgacccccgagtaaccta actgggaggcaccccaagtaggggcagactgacacctcacatggctgggtactcctctgagaaaaaacttccagaggaac gatcaggcagcaacatttgctgttcaccaatatccactgttctgcagcctcctgtgctaatacccaggcaaatgggtctg gagaggacetecagcaagetecaacagacetacagetgagggteetgaetgttagaaggaaaactaacaaacagaaagga catccacaccaaaaccctatctgtacggcaccatcatcaaagaccaaaggtagataaaaccacaaagatggggaaaaaaa cacagcagaaaaactggtaactctaaaaattagagcgcttctcctcctacaaggaacgcagctcctcaccagcaatgga accaagctggacagagaatgactttgacgagttgagagaagaaggottcagatgatcaaactactctgagctaaaggagg aagttegaaeeeaeggcaaagaagttaaaaaeettgaaaaaaattagatgaatggetaaetagaataaeeaatgcagaga 10 agtccttaaaggacctgatggagctqaaaaccatggcacaaqaactacatqacaaaatqcacaaqcctcaqtaqctqattc aaaaaaaagaaatgaacaaagcctccaagaaatatgggactatgtgaaaagaccaaatctacgtctgattggtgtacctg aaagtgatgggggagaatggaaccaagctggaaaacactctgcaggatattatccaagagaacttccccaatctagcaagg caggctgacattcaaattcaggaaatacagagaacgccacaaatataatcctcgagaagagcaactccaagacacataat 15 tgttagattcactaaagttgaaatgaaggaaaaaatgttaagggcagccagagagaaaggtcagcttacccacaaaggaa agcccatcagattaacagctgatctctcggcagaaactctacaagccagaagagagtgggggccaatattcaacattctt anagaaaagaattttcaacccagaatttcatatccagccaaactatgcttcataagtgaaggagaaataaaatatagaca aaccggtaccagccactgcaaaaacatgccaaattgtaaacaccattgaggccaggaagaactgcatcaactaacgagc aaaataaccagctaacatcatcatgacaggatcaaattcacacataacaatattaaccttaaatgtaaataggctaaatg ctccaattaaaagacacagactggcaaactggataaagagtcaagacccatcagtgtgctgtattcaggaaacccatctc ggttgcaatcctagtctctgataaaacagactttaaaccaacaaagatcaaaagagacacagaaggccattacataatgg 25 caagtccttagagacctacaaagagacttagactcccacacaataataatgggagactttaacaccccactgtcaacatt agacagatcaatgagacagaaaattaacaaggatatccaggaattgaactcaactctgcaccaageggacctaatagaca tetacagaaeteteeaceecaateaacagaatatacattetttteggcaecacaccaccagattecaaaattgaacac atagttggaagtaaagcactcctcagcaaatgtaaaagaacagaaagtacaacaaactgtctctcagaccacagtgcaat 30 actgggtacataacgaaatgaaggcagaagtaaagatgttctttgaaaccaacgagaacaaagacacacataccagaat ctctgggacacattcaaagcagtgtgtagaggaaaatttatagcactaaatgcccacaagagaaagcaggaaagatctaa aattgacagcctaacatcacaattaaaagaactagagaaacaagagcaaacacattcaaaagctagcagaaggcaagaaa taactacaatcagagcagaactgaaggagatagagacatacaaaaaacccttcaaaaaatcaatgaatccaggagctggt tttttgaaaagatcaacaaaattgatagaccactagcaaaactaatacagaagagaagaagaatcaaatagacacaataaa 35 aaatgataaacgggatatcaccactgatcccacagaaatacaaactaccatcaaagaatactataaacacctctatqcaa ataaactagaaaatctagaagaaatggataaattcctcgacacatacaccctcccaagactaaaccaggaagaagctgaa aagagggaatcctccctaactcattttatgaggccagcatcatcctgataccaaagcctggcagagacacaacaaaaaa 40 gagaatttcagaccaatatccctgatgaacatcgatgcaaaaatttttaataaaatactggcaaactgaatccagcagca catcacaaagcttatccaccatgatcaagctggcttcattcctgggatgcaaggctggttcaacatacggaaaatcaata aattcaacagcccttcatgctaaaaactctcaataaattaggtactgatgggacgtatctcaaaataataagcgctatct atgaccaacccacagccaatatcatactggatgggcaaaaactggaagcattccctttgaaaactggcacaagacaggga 45 agcccaaaateteettaagetgataageaaetteageaaagteteaggateaaaateaatgtgeaaaaateacaageatt cttatacaccaataacagacaaacagagagccaaatcatgagtgaactcccattcacaattgcttcaaagagaataaaat acctaggaatccaactcacaagggatgtgagagacctcttcaaggagaactataaaccactgctcaatgaaatgagagga tacagataaatggaagacattccatgctcatgggtaggaagaatcaatatcgtgaaaatggccatactgcccaaggtaa ttttatagattcaatgccatccccatcaagctaccaatgactttcttcacagaattggaaaaaactactttaaagttcat 50 atggaaccaaaaaagagcccgcattgccaagtcaatcctaagccaaaagaacaaagctagaggcatcacactacctgact tcaaactatactacaaggctacagtaaccaaaacagcatggtactggtaccaaagcagagatatagaccaatggaacaaa acagtgccctcagaaataatactgcatatctacaaccatctgatctttgacaaacctgacaaaacaagcaatqgggaaa 55 cttgtacaaaaattaattcaagatggattacagacttaaatgttagacctaaaaccataaaaccctagaagaaaaccta ggcaataccattcaggacataggcatgggcaagaacttcatgtctagaacaccaaaagtaatggcaacaaaagccaaaat tgacaaatgggtctaattaaactaaagagcttctgcacagcaaaagaaactaccatcagagtgaagaggcaacctacaga atgggagaaaatttttgcaatctgacaaaagggctaatttttgcatctgacaaagggctaatatccagaatctacaatga actcaaacaatttacaagaaaaacaaatttacaagaaaaacaaatttacaagaaaaacaaatttacaagaaa aaaacaaacaaccccatcaaaaagtgggcaaaggataagaacagtcacttctcaaaagaagacatttatgcagccaaaag acacatgaaaaaattctcatcatcactggccatcagagaaatgcaaatcaaaaccacaatgagataccatctcacaccag ttagaatggcgatcattaaaaagtcaagaaacaacaggtgctggagaggatgtggagaaataggaacacttttacactgt tagtgggactgtaaactagttcaacattgtggaaatcagtatggcgattcctcagggatctagaactagaaataccattt gacccagccatcccattactgggtatatacccaaaggattataaatcatgctgctataaagacacttgcacacatatgtt tattgtggtactattcacaatagcaaagacttggaattaacccaaatgtccaacaatgatagactagattaagaaaatgt $\tt ggcacatatacactatggaatactttgcagccataaaaaaaggatgagttcatgtcctttgtagggacatggatgaagctg$ 70 attaggagacatacctaatgttaaatgacgatttaatgggtgcagcacccaacatggcacatgtatacatatgtaacaa ggaatagtgggcacaatctcatcatcctactctatgtagcctaatgggtccagaatttatcatcactattttacactgg aaaaaagatgagattatgaggggtcagggaggctttgagtttttgctctaacttcaccactaattaagaatgtgatcttg 75 ggtaagccactttaacctctgtaaatgtcaaatttcttatcagtaaaatgtgactatacaagacaataaatttgaaaata ctttgcaaaattgaaagtaccatggaaataattcttcaatcccaaaaggttatgaacattattaaaatttgccacatgga agagcacacaccacagagacataactgtgatcataaacagatttacaaaagtggtgtttcattatggagggccatagggc tgataaagacaaatgcatcaccaagctatgtccgagctcattcagatttttacaggaaacacagagcttctagctgaatt atctctggatggtgtggaaattgtccaacacgttcctaatttcaaagaaacagaactgaatcttgaaaacccaagaggcc tttacagaaactgacaagagatgaattaatataggtatcaagctacagaccaaattaaagttttacaaaactttgaaaga gggtcagaaagaagaaacttatgggaagcagagtcctggaaagtcagctttgatggagtgacaatatgtgcaacacagtg agcaatctcttaggtaggcagcttcagggatgggggttgccctttgaaaggacttgggccactcttgagtctaagaggct

aagtcacaaacaatgctaagcaactaaaaatagcttcttgtttaatagtaaaattctgcatagtaaaaggagaagcaggg ggtatgacacacgtggtagttagcagtctactagtgactttactgccacaaccagaaaagccagctgatgtgtcagacgt aatggtgcctactgtgcattaacagagataaactaggggtctaagaactcagttttctacagggtcccagaagtatagcc atatattgccccattctctaatggaaatagccagagaaatagaaatatcaagactggagaacatcaaatacctcattgga aaagcccccacataggaaaatgtgtgggcttgaattcttccattctggaagggtaaaaggcctgagtgatgatgctgggat taccaaatagcctgccccttataacagcgttaatgtgattttgatctgaaatgtatagagacattttgcatttttcggt tttaaatttgttttatattctccgaacattacctaacgcatagaaaactcttcttgaaccatttttctctgttctttgta aaatattacatttgactgttccttagactgctttaatcattcctgcctatgcaccctcctcaaaatccagtttaaattaa ttgttccttattcaagattccttatatccacctcccttggggcagcaatcacctatcacccaggactacacttgtgtatg tacatatcttccctattacaaatcaggttctttgaaaaaatacaaatggtaagagagtggatttttggagtcagtacatt ctcttttcaaatccttcttctgccccttactggcaataagggctgagtgacctagagcaaattacttaacttctctgagc tagaatggaagctttacaaqqactctctgtgagacaggatctcctcaagtgtccccaggttaaattagaagtatatatcc 20 agaggtaaagacataaaaacgagaaacatggactggtttacacataacacatacaaagtctattataaaactagcatcag tatccttgaatgcaaacctttttctgagtatttaacaatcgcaccctttaaaaaatgtacaatagacattaagagactta aacagatatataatcattttaaattaaaatagcgttaaacagtacctcaagctcaataagcattttaagtattctaatct tagtatttctctagctgacatgtaagaagcaatctatcttattgtatgcaattagctcattgtgtgggataaaaaggtaaa 25 accattctgaaacaggaaaccaatacacttcctgtttaatcaacaaatctaaacatttattcttttcatctgtttactct tgctgttgtccaccacaatatgctattcacatgttcagtgtagttttatgacaaagaaaattttctgagttacttttgta tccccaccccttaaagaaaggaggaaaaactgtttcatacagaaggcgttaattgcatgaattagagctatcacctaag catcagaagaggaaaaatgaaggtaatgttttttcagacaggtaaagtctttgaaaatatgtgtaatatgtaaaacattt 30 tgacacccccataatatttttccagaattaacagtataaattgcatctcttgttcaagagttccctatcactctctttaa tcactactcacagtaacctcaactcctgccacaatgtacttaatcaacaaatctaaacatttattcttttcatctgttta ctcttgctcttgttcaccacaatatgctattcacatgttcagtgtagttttatgacaaagaaaattttctgagttacttt tgtatccccaccccttaaagaaaggaggaaaaactgtttcatacagaaggcgttaattgcatgaattagagctatcacc agtcatcagaagaggaaaaatgaaggtaatgttttttcagacaggtaaagtctttgaaaaatatgtgtaatatgtaaaaca ttttgacacccccataatattttttccagaattaacagtataaattgcatctcttgttcaagagttccctatcactctctt taatcactactcacagtaacctcaactcctgccacaatgtacaggatgcaactcctgtcttgcattgcactaagtcttgc acttgtcacaaacagtgcacctacttcaagttctacaaagaaaacacagctacaactggagcatttactgctggatttac agatgatttttgaatggaattaatgtaagtatatttcctttcttactaaaattattacatttagtaatctagctggagatc atttettaataacaatgeattataetttettagaattacaagaateecaaaeteaceaggatgeteacatttaagtttta catgcccaagaaggtaagtacaatattttatgttcaatttctgttttaataaaattcaaagtaatatgaaaatttgcaca ttctcacctttatcgataagacaattctaaacaaaaatgttcatttatggtttcatttaaaaatgtaaaactctaaaaata tttgattatgtcattttagtatgtaaaataccaaaatctatttccaaggagcccacttttaaaaatcttttcttgttta ggaaaggtttctaagtgagaggcagcataacactaatagcacagagtctggggccagatatctgaagtgaaatctcagct ctgccatgtcctagctttcatgatctttggcaaattacctactctgtttgtgattcagtttcatgtctacttaaatgaat aactgtatatacttaatatggctttgtgagaattagtaagttaaatgtaaagcactcagaaccgtgtctggcataaggta aataccatacaagcattagctattattagtagtattaaagataaaattttcactgagaaatacaaagtaaaattttggac tttatctttttaccaatagaacttgagatttataatgctatatgacttattttccaagattaaaagcttcattaggttgt ttttggattcagatagagcataagcataatcatccaagctcctaggctacattaggtgtgtaaagctacctagtagttgt gccagttaagagagaatgaacaaaatctggtgccagaaagagcttgtgccagggtgaatccaagcccagaaaataatagg atttaaggggacacagatgcaatcccattgactcaaattctattaattcaagagaaatctgcttctaactaccttctgaagagatgtaaaggagacagcttacagatgttactctagtttaatcagaggccacataatgcaactccagcaacataaagata 55 ctagatgctgttttctgaagaaaatttctccacattgttcatgccaaaaacttaaacccgaatttgtagaatttgtagtg aagatgagattatgtgcattaatttagggggtggtagaattcatggaaatctaagtttgaaaccaaaagtaatgataaact ctattcatttgttcatttaaccctcattgcacatttacaaaagattttagaaactaataaaaatatttgattccaaggat qctatgttaatgctataatqaqaaagaaatgaaatctaattctggctctacctacttatgtggtcaaattctgagattta gtgtgcttatttataaagtggagatgatacttcactgcctacttcaaaagatgactgtgagaagtaaatgggcctatttt 60 aagtcctcccaaagtattataatcttttatttcactgggacaaacatttttaaaaatgcatcttaatgtagtgattgtaga aaagtaaaatttaagacatatttaaaaatgtgtcttgctcaaggctatattgagagccactactacatgattattgttac ctagtgtaaaatgttgggattgtgatagatggcattcaagagttccttctctctaacattctgtgattcttaactctta 65 gactatcaaatattataatcatagaatgtgatttttatgcttccacattctaactcatctggttctaatgattttctatg cagattggaaaagtaatcagcctgcatctgtgataggcacttacgatgcagaaagtctaacattttgcaaagccaaatta agctaaaaccagtgagtcaactatcacttaacgctagtcataggtacttgagccctagtttttccagttttataatgtaa actotactggtccattctttacagtgacattgagaacagagagaatggtaaaaactacatactgctactccaaataaaat aaattggaaattaatttetgattetgacetetatgtaaactgagetgatgataattattattetaggeeacagaactgaa 70 acatetteagtgtetagaagaagaactcaaacetetggaggaagtgetaaatttageteaaagcaaaaacttteaettaa gacccagggacttaatcagcaatatcaacgtaatagttctggaactaaaggtaaggcattactttatttgctctcctgga aataaaaaaaaaagtcaggggaaaagtaccacattttaaagtgacataacatttttggtatttgtaaagtacccatg catgtaattagcctacattttaagtacactgtgaacatgaatcatttctaatgttaaatgattaactggggagtataagc 75 tatagtagtaaaagacattcctaaaagtaactccagttgtgtccaaatgaatcacttattagtggactgtttcagttgaa ttaaaaaaatacattgagatcaatgtcatctagacattgacagattcagttccttatctatggcaagagttttactctaa aataattaacatcagaaaactcattcttaactcttgatacaaatttaagacaaaaccatgcaaaaatctgaaaactgtqt

ttcaaaagccaaacactttttaaaataaaaaatcccaagatatgacaatatttaaacaattatgcttaagaggatacaga acactgcaacagttttttaaaagagaatacttatttaaagggaacactctatctcacctgcttttgttcccagggtagga agcgtttaaatagctcctttcagcagagaagcctaatttctaaaaagccagtccacagaacaaaatttctaatgtttaaa cttttaaaagttggcaaattcacctgcattgatactatgatggggtaggggtaggtgtaagttttagaagatgttcttc acacaaatttatcccaaacggaagcatgtcctagcttactctagtgtagttctgttctgctttggggaaaatataaggag attcacttaagtagaaaaataggagactctaatcaagatttagaaaagaagaagtataatgtgcatatcaattcataca tttaacttacacaaatataggtgtacattcagaggaaaagcgatcaagtttatttcacatccagcatttaatatttgtct agatotatttttatttaaatotttatttgcacccaatttagggaaaaaatttttgtgttcattgactgaattaacaaatg aagaaaatgcgaataattaatatgtttggtaagcttgaaaataaaggcaacaggcctataagacttcaattgggaataac tgtatataaggtaaactactctgtactttaaaaaattaacatttttcttttatagggatctgaaacaacattcatgtgtg gaatgtatggtttgctacctattgtaactattattcttaatcttaaaactataaatatggatcttttatgattctttttg gtagattggttagtaaaactatttaataaatttgataaatataaacaagcctggatatttgttattttggaaacagcaca gagtaaggatttaaatatttettagttacttgtgtgaactgtaggatggttaaaatgettacaaaagtcactetttetet gaagaaatatgtagaacagagatgtagaettetcaaaaagccettgetttgteettteaagggetgatcagaccettagtt 20 ctggcatctcttagcagattatattttccttcttcttaaaatgccaaacacaaacactcttgaaactcttcatagatttg gtgtggctatgaattccgaattcccctatcacctaagtgtgggctaatgtaacaaagagggatttcacctacatccattc agtcagtctttgggggtttaaagaaattccaaagagtcatcagaagaggaaaaatgaaggtaatgtttttcagactggt aaagtetttgaaaatatgtgtaatatgtaaaacattttgacacccccataatatttttccagaattaacagtataaattg catctcttqttcaagagttccctatcactctttaatcactactcacagtaacctcaactcctgccacaatgtacaggatg 25 caactcctgtcttgcattgcactaagtcttgcacttgtcacaaacagtgcacctacttcaagttctacaaagaaaacaca gctacaactggagcatttactgctggatttacagatgattttgaatggaattaatgtaagtatatttcctttactaa aattattacatttagtaatctagctggagatcatttcttaataacaatgcattatactttcttagaattacaagaatccc aaactcaccaggatgctcacatttaagttttacatgcccaagaaggtaagtacaatattttatgttcaatttctgtttta ataaaattcaaagtaatatgaaaatttgcacagatgggactaatagcagctcatctgaggtaaagagtaactttaatttg 30 tttttttgaaaacccaagtttgataatgaagcctctattaaaacagttttacctatatttttaatatatttgtgtgtt ggtggggtgggagaaacataaaaataatattctctcactttatcgataagacaattctaaaacaaaaatgttcatttat ggtttcatttaaaaatgtaaaactctaaaatatttgattatgtcattttagtatgtaaaataccaaaatctatttccaag gagcccacttttaaaaatcttttcttgttttaggaaaggtttctaagtgagaggcagcataacactaatagcacagagtc aagcactcagaaccgtgtctggcataaggtaaataccatacaagcattagctattattagtagtattaaaagataaaattt tcactgagaaatacaaagtaaaatttttggactttatctttttaccaatagaacttgagatttataatgctatatgactta ttttccaagattaaaagcttcattaggttgtttttggattcagatagagcataagcataatcatccaagctcctaggcta cattaggtgtgtaaagctacctagtagctgtgccagttaagagagaatgaacaaaatctggtgccagaaagagcttgtgc cagggtgaatccaagcccagaaaataataggatttaaggggacacagatgcaatcccattgactcaaattctattaattc 40 aagagaaatctgcttctaactacccttctgaaagatgtaaaggagacagcttacagatgttactctagtttaatcagagc cacataatgcaactccagcaacataaagatactagatgctgttttctgaagaaaatttctccacattgttcatgccaaaa acttaaacccqaatttgtaqaatttgtagtggtgaattgaaagcgcaatagatggacatatcaggggattggtattgtct tgacctacctttcccactaaagagtgttagaaagatgagattatgtgcataatttaggggtggtagaattcatggaaatc 45 taagtttgaaaccaaaagtaatgataaactctattcatttgttcatttaaccctcattgcacatttacaaaagattttag cctacttatgtggtcaaaltctgagatttagtgtgcttattlataaagtggagatgatacttcactgcctacticaaaag atgactgtgagaagtaaatgggcctattttggagaaaattcttttaaattgtaatataccatagaaatatgaaatattat atataatatagaatcaagaggcctgtccaaaagtcctcccaaagtattataatcttttatttcactgggacaaacatttt taaaatgcatcttaatgtagtggattgtagaaaagtaaaaatttaagacatatttaaaaatgtgtcttgctcaaggctata ttgagagccactactacatgattattgttacctagtgtaaaatgttgggattgtgatagatggcatccaagagttccttc teteteaacattetgtgattettaactettagaetateaaatattataateatagaatgtgatttttatgeetteeacat tctaatctcatctggttctaatgattttctatgcagattggaaaagtaatcagcctacatctgtaataggcatttagatg cagaaagtctaacattttgcaaagccaaattaagctaaaaccagtgagtcaactatcacttaacgctagtcataggtact 60 aacatttttqqtatttqtaaaqtacccatqcatqtaattaqcctacattttaaqtacatqtqaacatqaatcatttcta atgttaaatgattaactggggagtataagctactgagtttgcacctaccatctactaatggacaagcctcatcccaaact tttattatatatttttcaagttccttcacagatcatttactggaatagccaatactgagttacctgaaaggcttttcaaa 65 ccaqtggactaaacaacaacaatctttttagaggcaatcccactttcagaatcttaagtatttttaaatgcacaggaag cataaaatatgcaagggactcaggtgatgtaaaagagattcacttttgtctttttatatcccgtctcctaaggtataaaa ttcatgagttaataggtatcctaaataagcagcataagtatagtagaaaagacattcctaaaagtaactccagttgtgt ccaaatgaatcacttattagtggactgtttcagttgaattaaaaaaatacattgagatcaatgtcatctagacattgaca gattcagttccttatctatggcaagagttttactctaaaataattaacatcagaaaactcattcttaactcttgatacaa 70 atttaagacaaaaccatgcaaaaatctgaaaactgtgtttcaaaagccaaacactttttaaaataaaaaatcccaagat atgacaatatttaaacaattatgottaagaggatacagaacactgcaacagttttttaaaaggagaatacttattaaaag gaacactctatctcacctgcttttgttcccagggtaggaatcacttcaaatttgaaaagctctcttttaaatctcactat atatcaaaatagttgcctccttagcttatcaactagaggaagcgtttaaatagctcctttcagcagagaagcctaatttc gcttactctagtgtagctcgtttcgtctttggggaaaatataaggagattcacttaagtagaaaaataggagactctaat caagatttagaaaagaagaagtataatgtgcatatcaattcatacatttaacttacacaaatataggtgtacattcaga caatttagggaaaaatttttgtgttcattgactgaattaacaaatgaggaaaatctcagcttctgtgttactatcattt cttgaaaataaaggcaacaggcctataagacttcaattgggaataactgtatataaggtaaactactctgtactttaaaa aattaacatttttcttttatagggatctgaaacaacattcatgtgtgaatatgctgatgagacagcaaccattgtagaat

ttctgaacagatggattaccttttgtcaaagcatcatctcaacactgacttgataattaagtgcttcccacttaaaacat atcaggocttctatttatttaaatatttaaattttatatttattgttgaatgtatggtttgctacctattgtaactatta ttcttaatcttaaaactataaatatggatcttttatgattcttttgtaagccctaggggctctaaaatggtttcactta tttatcccaaaatatttattattatgttgaatgttaaatatagtatctatgtagattggttagtaaaactatttaataaa tttgataaatataaacaagcctggatatttgttatttttggaaacagcacagagtaagcatttaaatatttcttagttact tgtgtgaactgtaggatggttaaaatgcttacaaaagtcactctttctctgaagaaatatgtagaacagagatgtagact teteaaaageeettgetttgteettteaagggetgateagaeeettagttetggeatetettageagattatatttteet tcttcttaaaatgccaaacacacacactcttgaaactcttcatagatttggtgtggcccccataatatttttccagaatt aacagtataaattgcatctcttgttcaagagttccctatcactctctttaatcactactcacagtaacctcaactcctgc cacaatgtacaggatgcaactcctgtcttgcattgcactaagtcttgcacttgtcacaaacagtgcacctacttcaagtt ctacaaagaaaacacagctacaactggagcatttactgctggatttacagatgattttgaatggaattaataattacaag aatcccaaactcaccaggatgctcacatttaagttttacatgcccaagaaggccacagaactgaaacatcttcagtgtct agaagaagaactcaaacctctggaggaagtgctaaatttagctcaaagcaaaaactttcacttaagacccagggacttaa tcagcaatatcaacgtaatagttctggaactaaagggatctgaaacaacattcatgtgtgaatatgctgatgagacagca 15 accattgtagaatttctgaacagatggattaccttttgtcaaagcatcatctcaacactgacttgataattaagtgcttc attgtaactattattcttaatcttaaaactataaatatggatcttttatgattctttttgtaagccctaggggctctaaa atggtttcacttattattcccaaaatattattattattatgttgaatgttaaatatagtatctatgtagattggttagtaaa actatttaataaatttgataa (SEQ ID NO:11902) aggcccagttgaaaccagggagttgctctcctttctcctccttgacctcacccctcagaccatgccaattctgcctcct 20 aaacctcccaggccagcccctcccccagctcccagtgacagtgtcctcaggtacctgagctcagctctcggtgctaccag agggactgcagggctgcagaggctgagtcccacacgcagggaacagccatgccactgctagcagaccagtaagagaatggccacctggggcctgagcccactcggccatccaccagaaacaaagtgtcaaggagaagctgcccgaagcccatgggacaaa ccactggggactggaacaccagtaattctgtattgggaagggcaccaaggagatgtgcttctcagaggctgaac gtggatgtttagcagcgtgaccggctaccagacaaactctcatctgttccagtggcctcctggccaccaccaggaccaa 25 gcaqqqqqqaqqaqaqqqccaqqqtaqtccaqqtqatqqcaqatqaqatcccactgggcaggaggcctcaqtgagctg agtcaggcttccccttcctgccacaggggtcctctccacctgctgccatgcttcccatctctcatcctcttgacaagatg aagtgataccgtttaagtaatcttttttcttgtttcactgatcttgagtactagaaagtcatggatgaataattacgtct gtggttttctatggaggttccatgtcagataaagatccttccgacgcctgccccaccaccaccacctcccccgccttgccc 30 ggggttgtgggcaccttgctgctgcacatataaggcgggagctgttgccaactcttcagagccccacgaaggaccagaac aagacagagtgcctcctgccgatccaaacatgagccgcc (SEQ ID NO:11903) gccacccaccaggaccaagcagggcgggcagcagagggccagggtagtccaggtgatggcagatgagatcccactgggca ggaggcctcagtgagctgagtcaggcttccccttcctgccacaggggtcctctcacctgctgccatgcttcccatctctc atcctecttgacaagatgaagtgataeegtttaagtaatetttttetettetteetgaetettgagtaetagaaagteat 35 ggatgaataattacgtctgtggttttctatggaggttccatgtcagataaagatccttccgacgcctgccccacacc 40 tttcccctgcctcagcataacttgctagccttcatttcctcgtgctggtcacatcacacccacaacccgacccaaaccctg gtttctctaccatgccctgcttccctgcaccccaggcttgtcacactcatcttctaccaaaactccagctttgtgctgt ggcctgtcaacctgtcccatggaaaagggggccacccatccttcagggactgtcccctggctctccacactcctggctt aggoctgagotgoaaaccagotoccactccacccaggotocaggocgactgggatttagatocctcaatatggotttcc 45 ttcagggagtagttctctttctctctcttgccctccggctcaaacttgtccatgccacctgctacaccgtcctgcagct cccagtaactaacactattetcaaggeecaectttgteectaggteectaageetaattatetgagttateagaaggatg gcctagtgtttgcagtcatatctccatcaagggttctgtcctctagatgtgggccttagcgcattgcccttactgcactga gactagaccagtgaaggagtgagctgaactccatatccacctgcaaggaataagggtcaatgggaaggctgcctagaggg 50 tcaagtttgccccagtgaccctggtggcccactaatagtggtggcccacagtcaggggcagatttgtacaagggatggta ggaagaggttccagtgcacagaaaccccaagctggctcggagccaggctacttcctcccaccacctgtttccactcggtc ctgcctggggcccgccccccctctgatgaatatatataaggtgaaggctcctgtgggcttcttcagaactctttggag 55 aagcctcatgattctttcttttagtatcctcaggtatctggactcaataatagtgacgacaaagccaatctgagggtaag 60 ccactttcagtggggatgccatggggatgccatggaccagtgaacgagttgccttctgtgactgtgtcttttgcttttct tectectecaaaactgagettgtgttetecaettecaecageetaagaeattaceatttgeagttatttteceageteta 65 aaattaaagcattaaccttggtgttttggcatcttgggcataagtatttcccttggccaaccttctgccttttctagagct tgtctggagagatatgtttcccttaaaaacagacagatctgcttagagccttcacacagtccacaggctgccaggggtta 70 taaggetgttcaaagaaacetetaacageagtcacacetecccagetetcacetecccageteteacetecccagetete acctctcccgctctcacctccccagctctcacctctccagctctcacttccccagttctcacctccccagctctcacctc tccagctctcacctccccagctctcacct (SEQ ID NO:11905) cagagececaegaaggaecagaacaagaeagagtgeeteetgeegateeaaaeatgageegeetgeeegteetgeteetg ctccaactcctggtccgccccggactccaagctcccatgacccagacaacgcccttgaagacaagctgggttaactgctc 75 taacatgatcgatgaaattataacacacttaaagcagccacctttgcctttgctggacttcaacaacctcaatggggaag accaagacattetgatggaaaataacettegaaggecaaacetggaggeatteaacagggetgteaagagtttacagaac gcatcagcaattgagagcattcttaaaaatctcctgccatgtctgcccctggccacggccgcacccacgcgacatccaat ccatatcaaggacggtgactggaatgaattccggaggaaactgacgttctatctgaaaacccttgagaatgcgcaggctc aacagacgactttgagcctcgcgatcttttagtccaacgtccagctcgttctctgggccttctcaccacagagcctcggg acatcaaaaacagcagaacttctgaaacctctgggtcatctctcacacattccaggaccagaagcatttcaccttttcct ጸበ gcggcatcagatgaattgttaattatctaatttctgaaatgtgcagctcccatttggccttgtgcggttgtgttctcatt

gcagaggagccatgtcctgctgcttctgcaaaaaactcagagtggggtggggagcatgttcattttgtacctcgagtttta aactggttcctagggatgtgtgagaataaactagactctgaac (SEQ ID NO:11906) aattaaaaataaaataaagtaaaactatgtttcttgcacttaaaatactggaaaaccaaagagaatctgaaaaactttt agaatgaagagatttggcaagacggcaagaaccttgctttttccactgggcctttcttcctcccaccctgagggtgct ccatggaaaatgcaaatctacttaactgactttcgcaaatgtcaaatgtagagtacgaatttcaaggggagcctggggct 10 Cagtatgtgctccaacccctgcccaggcctcctagtgctagagaggatatagacatggcctctccatggaaacctccagg gctggtatgacaccttaacaacaaaaaagggaggattgccggtacagcggagtcccgcaggaggataggtgttgccttct aggtggtaggaggctgagagggccatccagagtagggaccacgaactggggtctcaacatgaagagtcgttcatcagat ct (SEQ ID NO:11907) aggeccagttgaaaccagggagttgctctcctttctcctccttgacctcaccctcagaccatgccaattctgcctcct aaacctcccaggccagcccctcccccagctcccagtgacagtgtcctcaggtacctgagctcagctctcggtgctaccag agggactgcagggctgcagaggctgagtcccacacgcagggaacagccatgccactgctagcagaccagtaagagaatgg Ccaectggggcetgagcgccctcggccatccaecagaaacaaagtgtcaaggagaagctgcccgaagcccatgggacaaa ccactggggactggaacaccagtaattctgtattgggaagcggcaccaagagatgtgcttctcagagcctgaggctgaac 20 gcagggcgggcagcagagggccagggtagtccaggtgatggcagatggagtcccactgggcaggaggcctcagtgagctg agtcaggetteccettectgecacaggggtcctctcacctgctgccatgetteccatctctcatcctccttgacaagatg aagtgataccgtttaagtaatcttttttcttgtttcactgatcttgagtactagaaagtcatggatgaataattacgtct gtggttttctatggaggttccatgtcagataaagatccttccgacgcctgcccacaccaccacctcccccgccttgccc 25 ggggttgtggggcaccttgctgctgcacatataaggcgggagctgttgccaactcttcagagcccacgaaggaccagaac gggtagtccaggtgatggcagatgagatcccactgggcaggaggcetcagtgagctgagtcaggcttccccttcctgcca tttttcttgtttcactgatcttgagtactagaaagtcatggatgaataattacgtctgtggttttctatggaggttccat 30 gtcagataaagatccttccgacgcctgccccacaccacctcccccgccttgccggggttgtgggcaccttgctgc tgcacatataaggcgggaggttgttgccaactettcagagccccacgaaggaccagaacaagacagagtgcctcctgccg atecaaacatggatecaggagaccagteteetagtaccaggtetgettgeetagaetaaaettggagtataagagecatagacae tgtetettegateagteettgeeeeeaeeeeetgetgttgeaeeettatettteaeeetattgeteetgeattgaagaea gaagcaccagtttcccctgcctcagcataacttgctagccttcatttcctcgtgctggtcacatcacaccacaacccga ccaaaccctggtttctctgcttagcatagcatgctgcttctctggtttctctggtggtttctcatactctatcctagcataccatacccaa ctttgtgctgtggctgtcaacctgtcccatggaaaagggggccacccatccttcagggactgtcccctggctctccac actcctggctttgcaactttctctctagctgtggtttctcaggtcctttgagaacttccataactgtccctgtttcctc ccacctctgtaggcctgagctgcaaaccagctccactccacccaggctccagggccgactgggatttagatccctcaa 35 40 gtcctgcagctcccagtaactaacactattctcaaggcccacctttgtccctaggtccctaagcctaattatctgagtta tcagaaggatggcctagtgtttgcagtcatatctccatcaagggttctgtcctctagatgtgggccttagcgcattgcct tactgcactgagactagaccagtgaaggagtgagctgaactccatatccacctgcaaggaataagggtcaatgggaaggc gcctaccatgttcaagtttgccccagtgaccctggtggcccactaatagtggtggcccacagtcaggggcagatttgtac 45 aagggatggtaggaagaggttccagtgcacagaaaccccaagctggctcggagccaggctacttcctcccacctgtt actetttggaggaccagaacgagacaatggttettgccagetetaccaccagcatectetgtatgetgeteccgetectg 50 atgetettecaccagggactecagattteagacaggggeteagatgeecaccatttacteaggacgttggattgeaggac ctcggaccaataagcctcatgattctttcttttagtatcctcaggtatctggactcaataatagtgacgacaaagccaat ccctgctttgcttccgttttcacatctatctcagtggggttattaaggaaatcatcagatgactctctgagcctcagtct 55 ggcctctggctccactttcagtggggatgccatggggatgccatggaccagtgaacgagttgccttctgtgactgtgtcttttgctttttcttcctcctccaaaactgagcttgtgttctccacttccaccagcctaagacattaccatttgcagttattt 60 atttagctcagtggtagagtgcttgcctagcaagcgcaaggccctgagttcattccccagctccgaaaaaaagaaaaaag aaaaagaaaaaaaattaaagcattaaccttggtgtttggcatcttgggcataagtatttcccttggccaaccttctgcct gccaggggttaagacctggtgctcaggagaaacaggcccttgtctgggatgtgccctagctttagccccaggataaggaa aggaccaggagtaaggctgttcaaagaaacctctaacagcagtcacacctccccagctctcacctccccagctctcacct 65 ccccageteteaceteteccgeteteacetecccageteteacetetecageteteacetecccagtteteaceteccca geteteacetetecageteteacetececageteteaceteagagececacgaaggaccagaacaagacagagtgeetee tgccgatccaaacatgagccgcctgcccgtcctgctcctgctccaactcctggtccgccccggactccaagctcccatga cccagacaacgcccttgaagacaagctgggttaactgctctaacatgatcgatgaaattataacacattaaagcagcca cctttgcctttgctggacttcaacaacctcaatggggaagaccaagacattctgatggaaaataaccttcgaaggccaaa 70 cctggaggcattcaacagggctgtcaagagtttacagaacgcatcagcaattgagagcattcttaaaaatctcctgccat ctgacgttctatctgaaaacccttgagaatgcgcaggctcaacagacgactttgagcctcgcgatcttttagtccaacgt ccagctcgttctctgggccttctcaccacagagcctcgggacatcaaaaacagcagaacttctgaaacctctgggtcatc teteacacattecaggaccagaagcatttcacettttcctgcggcatcagatgaattgttaattatctaatttctgaaat tttaattaaaaaataaaataaagtaaaactatgtttcttgcacttaaaatactggaaaaaccaaagagaatctgaaaaact

tttagaatgaagagtttggcaagacggcaagaacccttgctttttccactgggcctttcttcctcccaccctgagggt gctccatggaaaatgcaaatctacttaactgactttcgcaaatgtcaaatgtagagtacgaatttcaaggggagcctggg ccccagtatgtgctccaacccctgcccaggcctcctagtgctagagaggatatagacatggcctctccatggaaacctcc agggctggtatgacacettaacaaacaaaagggaggattgccggtacagcggagtcccgcaggaggataggtgttgcct tctaggtggtagggaggctgagagggccatccagagtagggaccacgaactggggtctcaacatgaagagtcgttcatca gatct (SEQ ID NO:11908) gcacacgggaagatatcagaaacatcctaggatcaggacaccccagatcttctcaactggaaccacgaaggctgtttctt ccacacageactttgatctccatttaagcaggcacctctgtcctggttccggagctgcgttcccgatggtcctcctttg tgaaagcaaaggctcagcagttgacctgggaccttaacagaaatgtgaccgatatcgagtgtgttaaagatgccgactat tctatgccggcagtgaacaatagctattgccagtttggagcaatttccttatgtgaagtgaccaactacaccgtccgagt ggccaacccaccattetecacgtggatectettecetgagaacagtgggaagcettgggcaggtgcggagaatetgacet gctggattcatgacgtggatttcttgagctgcagctgggcggtaggcccggggggccccgcgggacgtccagtacgacctg tacttgaacgttgccaacaggcgtcaacagtacgagtgtcttcactacaaaacggatgctcagggaacacgtatcgggtg tegtttegatgacatetetegactetecageggtteteaaagtteccaeateetggtgegggeaggagegeageetteggtateccetgeacagattagtegtettteacagattgagatattaactecaeccaacatgactgcaaagtgtaat aagacacattcctttatgcactggaaaatgagaagtcatttcaatcgcaaatttcgctatgagcttcagatacaaaagag aatgcagcctgtaatcacagaacaggtcagagacagaacctccttccagctactcaatcctggaacgtacacagtacaaa 20 cagaaggtatctggtgatgcagagactctttccccgcatccctcacatgaaagaccccatcggtgacagcttccaaaacg acaagetggtggtetgggaggggggaaaageeggeetggaggagtgtetggtgaetgaagtacaggtegtgcagaaaaet tgagactggggttcagggcttgtgggggtctgcctcaatctccctggccgggccaggcgcctgcacagactggctgctgc 25 acctgcgcacgcacgcccaggaatggacattcctaacgggtggtgggcatgggagatgcctgtgtaatttcgtccgaagct gccaggaagaagaacagaac (SEQ ID NO:11909) gategttagetteteetgataaactaattgeeteacattgteactgeaaategaeacetattaatgggteteaceteeca actgcttccccctctgttcttcctgctagcatgtgccggcaactttgtccacggacacaagtgcgatatcaccttacagg agatcatcaaaactttgaacagcctcacagagcagaagactctgtgcaccgagttgaccgtaacagacatctttgctgcc 30 tccaagaacacactgagaaggaaaccttctgcagggctgcgactgtgctccggcagttctacagccaccatgagaagga cactegetgeetgggtgegactgcacagcagttccacaggcacaagcagctgatccgattcctgaaacggctcgacagga acctctggggcctggcgggcttgaattectgtectgtgaaggaagccaaccagagtacgttggaaaacttcttggaaagg ctaaagacgatcatgagagagaaatattcaaagtgttcgagctgaatattttaatttatgagtttttgatagctttattt 35 gaattcaataaaaaacaagcagggcgcgtggtggggcactgactaggagggctgatttgtaagttggtaagactgtagct ctttttcctaattagctgaggatgtgtttaggttccattcaaaaagtgggcattcctggccaggcatggtggctcacacc tgtaatctcagagctttgggagactgaggtaggatcacttgagcccaggaatttgagatgagcctaggcaacatagt gagactcttatctctatcaaaaaataaaaataaaaatgagccaggcatggtgcggtggaccacgcacctactgctagggg 40 ttocttatgggtaaggacettatggacetgetgggacecaaactaggeetcacetgatacgacetgteetteteaaaacactaaacttgggagaacattgteececagtgetggggtaggaggatetgeetgttattetgeetetatgeagagaaggagg cccagatcatcttttccatgacaggacagtttccaagatgccacctgtacttggaagaagccaggttaaaatacttttca agtaaaactttcttgatattactctatctttccccaggaggactgcattacaacaaattcggacacctgtggcctctccc 45 ttctatgcaaagcaaaagccagcagcagccccaagctgataagattaatctaaagagcaaattatggtgtaatttccta tgctgaaactttgtagttaattttttaaaaaggtttcattttcctattggtctgatttcacaggaacattttacctgttt tectgataaactaattgeeteacattgteactgeaaategacacetattaatgggteteaceteeeaactgetteeeeet 50 ctgttcttcctgctagcatgtgccggcaactttgtccacggacacaagtgcgatatcaccttacaggagatcatcaaaaac tttgaacagcctcacagagcagaaggtgagtacctatctggcaccatctctccagatgttctggtgatgctctcagtatt ctccctgccactcttttttctgagggtttgtaggaagtttcctcagttggaggagtgagagctgctcatcaaggacttc tctgtccggttggaggttaactctgtctcttgtctcttcatttctgcctggaccaagactctgtgcaccgagttgaccgt tctgaacaagaaacttgtctaatggaaaacgagcgggcccaaattaactctaaggtgttagatgttttcaaagaacgaga agtctgatctttactcttaagcatgttttggtctttctggttcacttgatttagaagacatgtaatagaaagcttacat gctgtagtcctgactcagatcctggtcaaagaaaagccctcttgggttttacttagctttggcatagtgcctggaacgta ggaggractcaataaatgcctgttgaatgagagaatttttctggcccatacatttctgaaaaaaccaaatactctcacaga aacagatattgagatgacaggttgagggagctttcattttgtctaagagacttcctatggcaacagaaaaggtatcgcca gagcccctcctcttccacagcctggccacctaacagccctctggttccggggctgccgtccagagctctcagcttgctct 60 ggccggccgaactcccctccagctcggtctggaaccatcctgctggcagcgtccagcacatccctgcttcgggctgcct gggcacctcgcctctctgctcctgtgctgcctcacccccacccctctatctgtagtggaggagaatagatttgacagc tgatagtgcattttctctgacaaacacatgactacagccgtatcaatagttttgtgcatttcagttcctgttttcatgga 65 aacacacggctgagaatgaaagccccaaagcctcaatttcacagtggtctcctaactacctgctttccatgcaaactagg gagatgatatggccaggagtgaagccctgtgtgttgggcagggtcacactccagcacccagaccatagaacagggcccat cctgcttcatgagggaaactgctcttcgggcctttagctggactatctcatttcattagttatcccgggagtccgataca cagtggtgcgatttcagctcatagcagcctccacctcccaggctcaagctatcttcctacctcagcctcccaagtagccg 70 ggacgacaggtgtgcaccaccacgcctggctaatttttgtattttttgtagagatggagtcttgccattttgcccaggc ttgtotogaacttotgggotoaagoaatoogtocacotoggoototoaaagtgotgggattagcoactgoacctgggoaa cagtttatgtgtgtgtgtgtgtgtgtgtgtatatatgtgtgtgtgtgtgtatatatatatgtgtgtatgtatatatatgtgtatgt caagagtccaccgggttgagcactgggtctctggaggcctgtcggactgctgagaaggctctaacaaagccaagggaagg 75 gccacctcactagaagccaggcctggaggaagggtgagggctgagggctggaggtaagactgcctgtggttttagaccca ggctctgccactgactagctgtgtggctggccttcagacatcttcacagctctctgcacctcagtttccacatgtgaaga tatgaaagtgattetgaaggtgattgcaaggttgattggaatecagetettgagttagtgcaaagtgttattgtgagatg atataaccacgattaaaagcaagaacaggtgcagagaagcgatgattctaagaaggaggggaccgggttggaaaggatca aaccatccaggatgccgagtctggggcaatccatctgggctgtttctggaagacccccgggtgcaggacactgct ccccactgcctgccttcactcttacccgtctcatttgcctccctgaacttcatcctcctggagttcacgatctcactct teactettttetteeteegaagatteageactgettaettaeatgttaagatattteagaacagtgaaatgttgetatt

ttcaaaaacctacaaaggtggtatgcagaggaaaaggtacttctttgtgttcccaaagaaaacatctttccaaaatccag cctattgattttatttcttcgggggaacaagaattttagtatctctaagttgggtagcattctactcttggcagttgctg gaaagaaggcactggtctaggtcctgggcttcacaggtaacacctgtcagggtgtctatgaagtcaaggctgtctgagga acagcaaagtgggaagaagctagctggctgatgaagggtttcttgggtggacaagtagttggagcgatttcctatttaccaaagagagctaaagttcataattctacagagagttccataatgaacctcaaatacctctgttttttgaaggagtt toctagtgaggctggtcaagaaccgagttagaactctcacagagtcactgcccacagaagaaatctcccaagtggctgtt tectgacattecegggaggeaggeeteettetgagteacteeetaageagttetgaactgtgaggteageeaggetgtee cagggatggagtgtcgcccctcgctgcgataccagagcaagtaaaacgttaaggccttgcactaaagctgcccttagga tgcattcttttaaagtttttccatttaatgcagactcttttcaattcttattttatccttgtttcctttagaaagtcctt tgaaaaatatetttagagggtttttteetataetatgtggeeatataegggteaaaattaagtttaattteeaggeteea cccttccacctcgactcgcctacaaagcccagagaggtctgtttcttggcccccagagcccaaagatactgacacactct 15 atgggacatcacgccccacaggggaaaggggaagcttctgtagcctgggattctggtgcctcagtctgggtctagacttt gtttactcactgccgcttatttacagaagcaaaaatctgccacgataggggcctgacaaatgacagtaccactgtgcaat 20 gcgtttctacgcagctctcaatcccatgttctctaataccaccgaaggcttaggaaatgcttatggtatatgtaaagagt aaagaagttacaaacagtatcaacagttgacccctattttaaaaaagtatttttgaaaaagtgtgacgatatttaccaaaat attaacgagcaatagttacctctggctggtgggatgagtgaatgtatttttgttgaatatatgttacctttatagtaaat atatgttatcttgatcatcagaaaaaaaaatatgtaagaacttgaaagctgcttggacagcgctgctgatagaaacccct 25 tcccagtgatgtccatgctgtccatggaccacactttgagtatcaagggaccagagcatgtcgggggagaggctggg gatagetttetttatetgaaetggataaaggaaetgggeteaagetaagaaeeeteteeaggttetgeatetttgttett Cagtgaaaaatgagaggacacaccaggccaggttcagactgagacacaatccctctcctgggttcccaatgacttgtctc ttgtccattccettctctaaggctaagggccccccaggaagagccatgtggccagaccctcacagttgctggcattccaa ggagatteteacteegeateattggteeaaaaggeeeettacagaagetetgeeeaaggeteagateaatggeaeetget 30 cccagagetectetgateteccaggacaeettteeetgatetgtgeaettatetettgetgeetggeaaaatgtettage tcctcacttgggccatgtgctgctctcctctccatggggagagccacacggagagtgctggccaaagcagcagagttcaggccaaaggatgtgcactcatttattcaacaggcatgcaggatttccagggaaagctggattttaaaacctctgggaaca agagcagaacctgactgagagctcatgtgggcacttttcatagcagaatagctcatgaggtatagagacacggacgcaga acgtgggctgtagcgacagatggtcctgcattctagtccccactgtgccttttcctcatgggatgactttattcaggtac cacctccatttgtcctcctggaaagaagaaatcaagaggaaaatattctcccatcctccaataggagctggcacattg ctatctgtggcatttgtctttccagaacacaactgagaaggaaaccttctgcgaggctgcgactgtgctccggcagttct acagccaccatgagaaggacactcgctggctgcgctgcactgcactgcactgcaccagcagttccacaggcacaagcagctgatccgattc 40 ctgaaacggctcgacaggaacctctggggcctggcgggcttggtaagctgcactgtattcctggcaagccggcgcgtgg cattcaataagtatttgctgaagttccacaagtgctgggtgtgggttctaggtgctgaggacgtgtcactaaagacagcag gccgagtccctgttctcatggaatgttctaatgggagagttagaaaaacaacatgtaaaatgatggccagcagtgatac gtgctacaaagaaaaacatagaaataaagaacataagagtcatgggggaggggctgacttaggagctggtgacattatc 45 tgagcagatalttgaattgagggagcaggccacatgactaactagggagaccattccagggagaaggagggggtatgcaa aggggtagtttccaggacagcagatcacacaaggcctttagattccaccacgagtatggagggaacacctgcagagcttt gggcaggacaaagactgtacaatctgatttacgtgatttaaaaagggtcagtctggctactgtgtggtaaataggctgaaa gggggaaagcatagaagcaagatggcctgttgggaggctaccacagtaaaccaggctagagatgatggtggcgtggacag 50 gcagggctggaggttcagcagaagatcaagagttcaattttgtacatcgtacatgtaaggtggctcttggatagccaagt gaaggtgttgagaagatggttagaaaagtctggaacttaggggagaggtcagaacttgcaatacaaaaaggagagtcctt agatagatactgctgaaaatctgaatgacagaaagggagagtcaaaaggactgagcctgagatcaacacatggaggtcag gagaggaggatccagccaaggggcctgaggaggagtgaccagtgaggcaggagaacatggagagtgggcggtaccccagg 60 qqctcaccgaqqatagggtggcqagaggagacaaagaaggaacagtgagggcagacaactctttgaagatgtttagctat aaggctgcagagaaactgagcccacagctgcagggtggttatggagtgagggaagctettttaaggttgggggtataccc agcatgttaatgcacctgggggaatggtccagtggagcaggaagaactgaagaggagcagaaagaggaagaatcattaggg catgtatcccctctctgggcctatcaccttgtagacaatgggataggtcatgggataggaacttggcacaacacatgttc 65 tctcttttaattctctccattatcttatgaagcaggcaagtaggcaaacaattgtcccaactttacaaaagaaactgaag cttttataaattaagtagtacatcctaagcaattacaattaataaatggtagagctgagattcaaactgaagcagtggcct gggggtagcatctggaatcetteccacetttagggetgetgtgtgctgcggtgctgttttaatggcacagagggccagat gactgaaleteteteageagtecaggeagteatgeagaaggeceagtagageaeegggeaggtetgageeageatettea 70 75 cactcgctgcctgggtgcgactgcacagcagttccacaggcacaagcagctgatccgattcctgaaacggctcgacagga

ctaaagacgatcatgagagagaaatattcaaagtgttcgagctgaatattttaatttaatgagtttttgatagctttattt cgtggtggggcactgactaggagggctgatttgtaagttggtaagactgtagctctttttcctaattagctgaggatgtg tttaggttccattcaaaaagtgggcattcctggccaggcatggtggctcacacctgtaatctcagagctttgggagactg aggtaggaggatcacttgagcccaggaatttgagatgagcctaggcaacatagtgagactcttatctctatcaaaaaata aaaataaaaatgagccaggcatggtgcggtggaccacgcacctactgctaggggggctgaggtgggaggatcattgagcc tgggaggttgaggctgcagtgatccctgatcaaacattgcatttcagcctgggtgacagagtgagaccctgtctcagaaa aaaaaaaaaagtcatteetgaaacetcagaatagacetacettgecaagggettcettatgggtaaggacettatgga cctgctgggacccaaactaggcctcacctgatacgacctgtccttctcaaaacactaaacttgggagaacattgtccccc agtgctggggtaggaggtctgcctgttattctgcctctatgcagagaaggagcccagatcatcttttccatgacaggacagtttccaagatgccacctgtacttggaagaagccaggttaaaatacttttcaagtaaaactttcttgatattactcta tctttccccaggaggactgcattacaacaaattcggacacctgtggcctctcccttctatgcaaagcaaaaagccagcag cagccccaagctgataagattaatctaaagagcaaattatggtgtaatttcctatgctgaaactttgtagttaattttt aaaaaggtttcattttcctattggtctgatttcacaggaacattttcctattgttgtgaggcatttttcctctggaagag
aggtgctgattggccccaagtgaccatcttgtcggtgtaacgaaatttccaatgtaaactcattttcctcggtttcag
caattttaaatctatatatagagatatctttgtcagcattgcatcgttagcttctcctgataaactaattgcctcacatt gtcactgcaaatcgacacctattaatgggtctcacctcccaactgcttccccctctgttcttcctgctagcatgtgccgg caactttgtccacggacacaagtgcgatatcaccttacaggagatcatcaaaactttgaacagcctcacagagcagacag tgagtacctatctggcaccatctctccagatgttctggtgatgctctcagtatttctaggcatgaaaacgttaacagctg 20 ctagagaagttggaactggtggttggtggcagtccagggcacacagcgaggcttctcccctgccactcttttttctgaggg tttgtaggaagtttcctcagttggagggagtgagagctgctcatcaaggacttctctgtccggttggaggttaactctgt ctcttgctctctcatttctgcctggaccaagactctgtgcaccgagttgaccgtaacagacatctttgctgcctccaagg taagaagcegteecacggtetgttttagcaaatggggagatecateeccaaatgtetgaacaagaaacttgtetaatgga aaacgagcgggcccaaattaactctaaggtgttagatgtttcaaagaacgagaagtctgatctttactcttaagcatgt 25 tttggtctttctggtttcacttgatttagaagacatgtaatagaaagcttacatgctgtagtcctgactcagatcctggt caaagaaaagccctcttgggttttacttagctttggcatagtgcctggaacgtaggaggcactcaataaatgcctgttga atgagagaatttttctggcccatacatttctgaaaaaccaaatactctcacagaaaccagatattgagatgacaggttgag ggagctttcattttgtctaagagacttcctatggcaacagaaaaggtatcgccagagcccctcctcttccacagcctggc cacctaacagccctctggttccggggctgccgtccagagctctcagcttgctctggccggaactcccctccagctcg catgactacagccgtatcaatagttttgtgcatttcagttcctgttttcatggaaacacacaggctgagaatgaaagcccc aaageeteaattteacagtggteteetaaetaeetgettteeatgeaaaetagggagatgatatggeeaggagtgaagee 35 gcctccacctcccaggctcaagctatcttcctacctcagcctcccaagtagccgggacgacaggtgtgcaccaccacgcctggctaatttttgtattttttgtagagatggagtcttgccattttgcccaggcttgtctcgaacttctgggctcaagca 40 gtgtgtgtataaaatctccaagtccatccaaccgagatggctcctactagaagccaagagtccaccgggttgagcactgg gtctctggaggcctgtcggactgctgagaaggctctaacaaagccaagggaagggccacctcactagaagccaggcctgg ctggccttcagacatcttcacagctctctgcacctcagtttccacatgtgaagatatgaaagtgattctgaaggtgattg caaggttgattggaatccagctcttgagttagtgcaaagtgttattgtgagatgatataaccacgattaaaagcaagaac aggtgcagagaagcgatgattctaagaaggaggggaccgggttggaaaggatcaaaccatccaggatgccgagtctgggg caatccatctgggctgtttctggaagaccccgggtgcaggccaggacactgctgccctcccgtccttaactcccctctt cagcactgcttacttacatgttaagatatttcagaacagtgaaatgttgctattttcaaaaaacctacaaaggtggtatgc agaggaaaaggtacttctttgtgttcccaaagaaaacatctttccaaaatccagcctattgattttatttcttcggggga acaagaattttagtatetetaagttgggtagcattetaetettggeagttgetggaaagaaggeaetggtetaggteetg 55 ccttctgagtcactccctaagcagttctgaactgtgaggtcagccaggctgtccaagtgcactccctgagccactggcag acacactcagcagccagagctagacaggcaggtggtaggagtccagggcacggcagggatggagtgtcgcccctcgct 60 gcgataccagagcaagtaaaacgttaaggccttgcactaaagctgcccttaggatgcattcttttaaagtttttccattt aatgcagactcttttcaattcttattttatccttgtttcctttagaaagtcctttgaaaaatatctttagagggtttttt cctatactatgtggccatatacgggtcaaaattaagtttaatttccaggctccaagccagcgtttcagaaaaatctcacc tetgeccaectecagacacaaggeaccatetgecgeccccateagecgtgtccettecaectegaetegectacaaa 65 gcccagagaggtctgtttcttggcccccagagcccaaagatactgacacactcttacatttccaactagaatcaggaacg aggagtgactctcagtcagttcattaagtaaatgtctttctaaccgctctgcccatgggacatcacgcccacaggggaa aggggaagettetgtageettgggattetggtgeeteagtetgggtetagaettteetgaaaaaaegttaaaatatgaaet gcattcctagaatttagcctacataaataagagatgaacacaaagatttctatagtttactcactgccgcttatttacag aagcaaaaatctgccacgataggggcctgacaaatgacagtaccactgtgcaatgcgtttctacgcagctctcaatccca tgttctctaataccaccgaaggcttaggaaatgcttatggtatatgtaaagagtaaagaagttacaaacagtatcaacag ttgacccctattttaaaaagtatttttgaaaagtgtgacgatatttaccaaaatattaacgagcaatagttacctctgg tggtgggatgagtgaatgtatttttgttgaatatatgttacctttatagtaaatatatgttatcttgatcatcagaaaaa aaaatatgtaagaacttgaaagctgcttggacagcgctgctgatagaaacccctgagcatcttgtcactgttcttctgat tcagagggtctgggtggggcaggggtggtctgagattctgtatttctaagaagctcccagtgatgtccatgctgctgtcc 75 gccaggttcagactgagacacaatccctctcctgggttcccaatgacttgtctcttgtccattcccttctctaaggctaa gggcccccaggaagagccatgtggccagacctcacagttgctggcattccaaggagattctcactccgcatcattggtccaaaaggccccttacagaagctctctcgccagagctcaatggcactgcccagga 80

gtgggcacttttcatagcagaatagctcatgaggtatagagacacggacgcagaacgtgggctgtagcgacagatggtcc tgcattctagtccccactgtgccttttcctcatgggatgactttattcaggtaccctttcggcaaaatcctccaagagaa aggaaactgggaggttctggggagaaggctgctgcgtttgcaattgggagaggttgttgacagaggtttatgtctgtggc aagcagccttccttcagtggaatacttgaagacaggtctgtagttgagcaaactcacctccatttgtcctcctggaaaga agaaatcaagaggaaaaatctctctcccatcctccaaatggagctggacattgctattctgtggcatttgtctttccaga acacaactgagaaggaaaaccttctgcagggctgcgactgtgctccggcagttctacagccaccatgagaaggacactcgc tgcctgggtgcgactgcacagcagttccacaggcacaagcagctgatccgattcctgaaacggctcgacaggaacctctg gggcctggcgggcttggtaagctgcactgtattcctggcaagccggcgtggctcctggtggacagcagcctcacttc cacaagtgctgggtgtggttctaggtgctgaggacgtgtcactaaagacagcaggccgagtccctgttctcatggaatgt tctaatgggagagttagaaaaacaaacatgtaaaatgatggccagcagtgatacgtgctacaaagaaaaacatagaaata aagaacataagagtcatgggggagggggctgacttaggagctggtgacattatctgagcagatatttgaattgagggagc 15 atttacgtgatttaaaagggtcagtctggctactgtgtggtaaataggctgaaagggggaaagcatagaagcaagatggc ctgttgggaggctaccacagtaaaccaggctagagatgatggtggcgtggacagaatgaagcaagatggcctgttgggag gctaccacagtaaaccaggctagagatgatggtggcgtggacagaatgaagcaagatggcctgttggggaggctaccacag taaaccaqqctaqaqatqatqqtqqcqtqqacaaatqqaqcaqttqaqqtqaacaqatttqqqatatqactaaaaataaa 20 accagaagatttgctgacagatcggttgtagggggtaagatacaggggaggaaaagatgacctctttgttcctgcccaaa cccctctggcgatggtcagtactgtttacagagagatgaaagactggcggcaaggcagggctggaggttcagcagaagat caagagttcaattttgtacatcgtacatgtaaggtggctcttggatagccaagtgaaggtgttgagaagatggttagaaa gacagaaagggagagatcaaaggactgagcctgagatcaacacatggaggtcaggaggaggaggatccagccaaggggcct 25 gaggaggagtgaccagtgaggcaggagaacatggagagtgggcggtaccccaggaagccggtgaggacactcaaggaggg agggttgactgtgtcaaatgtactgaaaggacaggtcaggtgaggaccaagaaaggcccctgggtttggctgatggaggc catgggtgaggctgatgtaaatggagaggcaggaaggaaagcccagctggagtgggctcaccgaggatagggtggcgaga ggagacaaagaaggaacagtgagggcagacaactctttgaagatgtttagctataaggctgcagagaaactgagccaca gctgcagggtggttatggagtgagggaagctcttttaaggttgggggtatacccagcatgttaatgcacctgggggaatg 30 gtccagtggagcaggaagaactgaagagagcagaaagaggaagaatcattagggggcagaagtccttgtagcccagagtg gatgttatctaatatcgagtggaggaattaattggctttagaggagaacaaggacatgtatcccctctctgggcctatca ccttgtagacaatgggataggtcatgggataggaacttggcacaacacatgttctctcttttaattctctccattatctt 35 catttctagaagtgtaagtagtatgcacccaaaataggcaaaacctgctggcctagtgatagagacaactcccagtcagg ctagactggaggccttggttttataagtgttcaggtgacaagtgccacagtaggcttgatcaagtagacaggcaag 40 caatggcatttaatgtattggctatgtttacttgacaaatgaaattatggtttgcaacttttagggaaatcaatttagtt taccaagagactataaatgctatggagccaaaac (SEQ ID NO:11912) 45 ggcgaatggagcagggggcgcagataattaaagatttacacacagctggaagaaatcatagagaagccgggcgtggtgg ctcatgcctataatcccagcacttttggaggctgaggcgggcagatcacttgagatcaggagttcgagaccagcctggtg ccttggcatctcccaatggggtggctttgctctgggctcctgttccctgtgagctgcctggtcctgctgcaggtggcaag ctctgggaacatgaaggtcttgcaggagccacctgcgtctccgactacatgagcatctctacttgcgagtggaagatgaatggtcccaccaattgcagcaccaggctccgcctgttgtaccagctggttttttctgctctccgaagcccacaccgtgtatc 50 ctccctccgcatcgcagccagcaccctgaagtctgggatttcctacagggcacgggtgagggcctgggctcagtgctata 55 acaccacctggagtgagtgagcccagcaccaagtggcacaactcctacagggagcccttcgagcagcacctcctgctg gtgggatcagattcccaacccagcccgcagccgctcgtggctataataatccaggatgctcaggggtcacagtgggaga agcggtcccgaggccaggaaccagccaagtgcccacactggaagaattgtcttaccaagctcttgccctgttttctggag cacaacatgaaaagggatgaagatcctcacaaggctgccaaagagatgcctttccagggctctggaaaatcagcatggtg 60 tggagtgtgaggaggaggaggaggtagaggaagaaaaagggagcttctgtgcatcgcctgagagcagcagggatgacttc ttgccagcaggacatgggggagtcatgccttcttccaccttcgggaagtacgagtgctcacatgccctgggatgagttcc caagtgcagggcccaaggaggcacctccctggggcaaggagcagcctctccacctggagccaagtcctcctgccagcccg 65 acccagagtccagacaacctgacttgcacagagacgccctcgtcatcgcaggcaaccctgcttaccgcagcttcagcaa ctccctgagccagtcaccgtgtcccagagagctgggtccagacccactgctggccagacacctggaggaagtagaacccg agatgecetgtgtececeagetetetgagecaaceactgtgececaacetgagecagaaacetgggageagatecteege cgaaatgtcctccagcatggggcagctgcagccccgtctcggcccccaccagtggctatcaggagtttgtacatgcggt ggagcagggtggcacccaggccagtgcggtgggcttgggtcccccaggagaggctggttacaaggccttctcaagcc 70 gagggtetettaggtgeatgteetettgttgetgagtetgeagatgaggaetagggettateeatgeetgggaaatgeea cctcctggaaggcagccaggctggcagatttccaaaagacttgaagaaccatggtatgaaggtgattggcccactgacg ጸበ ttqqcctaacactgggctgcagagactggacccgcccagcattgggctgggctcgccacatcccatgagagtagagggc actgggtcgccgtgccccacggcaggcccctgcaggaaaactgaggcccttgggcacctcgacttgtgaacgagttgttg getgetecetecacagettetgeageagactgtecetgttgtaactgcccaaggcatgttttgcccaccagatcatggcc

```
agcttccttaggttgatgctggaggcagaatcccggctgtcaaggggtgttcagttaaggggagcaacagaggacatgaa
    aaattgctatgactaaagcagggacaatttgctgccaaacacccatgcccagctgtatggctgggggctcctcgtatgca
    tggaacccccagaataaatatgctcagccaccctgtgggccgggcaatccagacagcaggcataaggcaccagttaccct
    gcatgttggcccagacctcaggtgctagggaaggcgggaaccttgggttgagtaatgctcgtctgtgtgtttttagtttca
    ggatcciaatcaagaccccagtgaacagaactcgaccctgccaaggcttggcagtttccatttcaatcactgtcttccca
    ccagtattttcaatttcttttaagacagattaatctagccacagtcatagtagaacatagccgatctgaaaaaaacattc
    ccaatatttatgtattttagcataaaattctgtttagtggtctaccttatactttgttttgcacacatcttttaagagga
    agttaattttctgattttaagaaatgcaaatgtggggcaatgatgtattaacccaaagattcttcgtaatagaaaatgtt
    cacattagtacatgggtgataactacatcaccagcaaacattctgttaaaagttatgaatgctggtgtgctgtaaaaatg
    attgtatttcctttcctctccagactctgaggattcctgttcctgtacataaaaatgtaagttaaattatgattcagtaa
20
    aatgatggcatgaataagtaaatttcctgttttaagctgtaaatcattagttatcattggaactatttaattttctatat
    tttgttttcatatgggtggctgtgaatgtctgtacttataaatatgaggaatgactttttatcaagtagaatcctttaaa
    caagtggattaggctctttggtgatgttgttagtttgcctcccaaagagcatcgtgtcagggattctttccagaaggatt
    ccacactgagtgagaggtgcgtgctagtctccgtgcagttctgactctttctcactctaacgtgtttctgaaagtattag
    caactcagaattatatttttagaaccatgatcagtagacattaaaatatataacaaatgccctatattaataatttctgc
25
    atacttaaataattatgactatatgatggtgttgtatgcatttgaatatgtcctggtcatattaaaatgtaaaatatata
    gttttattagtctaaatagaataaaactaccagctagaactgtagaaacacattgatatgagtttaatgtataatgcatt
    acaettecaaaacatttttttecagttacataattaagttatateetttataaaaeteeteagtaateatataagettea
    ctcatgtaaataccacaaaacaaagcctaactttgtggaccaaaattgttttaataattatttttaattgatgaattaa
    atacettgtettgattatttgcattttaaaaatttteeteatttagcaccaactgtgcactgaagaaatettteagggaa
    taggcacactggagagtcaaactgtgcaagggggtactgtggaaagactattcaaaaacttgtccttaataaagaaatac
    attgacggccaaaaagtaagttacacacattcaatggaagctatatttgtctggctgtgcctatttctatggaattgaca
    tagactacctgcaagagtttcttggtgtaatgaacaccgagtggataatagaaagttgagactaaactggtttgttgcag
   catgcccagtttggaggaagggtctgagcacatgtggctgagcatccccatttctctggagaagtctcaaggttgcaagg
    cacaccagaggtggaagtgatctagcaggacttagtggggatgtggggagcaggggacacagggaggtgaagctggtgtgaacctggtt
    ctgattgtagaactaaaatgagttgtaaggcgtcccctggaagaagggcagtgtgggaacctgtaactaggttcctgcc
    agcctglgagaagaatttggcagatcaatctcattgccagtalagaggaagccagaaaccctctotgccaaggcctgc
    aggggttettaecccacctgaccctgcaccataacaaaaggaacagagagacactggtagggcagtcccattagaaagac
    cactagagattcttctgtttgagaaaacttctcaaggatcc(SEQIDNO:)atgcactttctttgccaaaggcaaacgca
    gaacgiticagagccatgaggatgcttctgcatttgagtttgctagctcttggagctgcctacgtgtatgccatccccac
    agaaattcccacaagtgcattggtgaaagagaccttggcactgctttctactcatcgaactctgctgatagccaatgaga
    ctctgaggattcctgttcctgtacataaaaatcaccaactgtgcactgaagaaatctttcagggaataggcacactggag
    agtcaaactgtgcaagggggtactgtggaaagactattcaaaaacttgtccttaataaagaaatacattgacggccaaaa
   aaaaaagtgtggagaagaaagacggaggtaaaccaattcttagactacctgcaagagtttcttggtgtaatgaacaccg
agtggataatagaaagttgagactaaactggtttgttgcagccaaagattttggaggagaaggacattttcatgcagtga
gaatgagggccaagaaagagtcaggccttaattttcaatataatttaacttcagagggaaagtaaatatttcaggcatac
tgacactttgccagaaagcataaaattcttaaaattatttcagatatcagaatcattgaagtattttcctccaggcaaa
    attgatatacttttttcttatttaacttaacattctgtaaaatgtctgttaacttaatagtatttatgaaatggttaaga
    atttggtaaattagtatttatttaatgttatgttgtgttctaataaaacaaaatagacaactgttc (SEQ ID NO:11915)
    ggatectaateaagaccecagtgaacagaactegaccetgecaaggettggcagtttccatttcaateaetgtettteca
    ccagtattttcaatttcttttaagacagattaatctagccacagtcatagtagaacatagccgatctgaaaaaaacattc
    ccaatatttatgtattttagcataaaattctgtttagtggtctaccttatactttgttttgcacacatcttttaagagga
    agttaattttctgattttaagaaatgcaaatgtggggcaatgatgtattaacccaaagattcttcgtaatagaaaatgtt
    cttctgcatttgagtttgctagctcttggagctgcctacgtgtatgccatcccacaagaaattcccacaagtgcattggt
    gaaagagaccttggcactgctttctactcatcgaactctgctgatagccaatgaggtaattttctttatgattcctacag
    cacattagtacatgggtgataactacatcaccagcaaacattctgttaaaagttatgaatgctggtgtgctgtaaaaatg
70
    attgtatttcctttcctctccagactctgaggattcctgttcctgtacataaaaatgtaagttaaattatgattcagtaa
    aatgatggcatgaataagtaaatttcctgttttaagctgtaaatcattagttatcattggaactatttaattttctatat
    tttgttttcatatgggtggctgtgaatgtctgtacttataaatatgaggaatgactttttatcaagtagaatcctttaaa
    caactcagaattatatttttagaaccatgatcagtagacattaaaatatataacaaatgccctatattaataatttctgc
    atacttaaataattatgactatatgatggtgttgtatgcatttgaatatgtcctggtcatattaaaaatgtaaaatatata
    gttttattagtctaaatagaataaaactaccagctagaactgtagaaacacattgatatgagtttaatgtataatgcatt
acacttccaaacattttttccagttacataattaagttatatcctttataaaactcctcagtaatcatataagcttca
    tctactttttgaaaattttatcttaatatgtggtggtttgttgcctagaaaacaaaacaaaaactctttggagaagggaa
    ctcatgtaaataccacaaaacaaagcctaactttgtggaccaaaattgttttaataattatttttaattgatgaattaa
    ataccttgtcttgattatttgcattttaaaaattttcctcatttagcaccaactgtgcactgaagaaatctttcagggaa
```

taggcacactggagagtcaaactgtgcaagggggtactgtggaaagactattcaaaaacttgtccttaataaagaaatac attgacggccaaaaagtaagttacacacattcaatggaagctatatttgtctggctgtgcctatttctatggaattgaca gtttcctgtaatacctattgtcatttttctttttcacagaaaaagtgtggagaagaagacggagagtaaaccaattcc tagactacctgcaagagtttcttggtgtaatgaacaccgagtggataatagaaagttgagactaaactggtttgttgcag aatttaacttcagagggaaagtaaatatttcaggcatactgacactttgccagaaagcataaaattcttaaaatattt cagatatcagaatcattgaagtattttcctccaggcaaaattgatatactttttttcttatttaacttaacattctgtaaa aataaaacaaaatagacaactgttcaatttgctgctggcctctgtcttagcaattgaagttagcacagtccattgagta catgcccagtttggaggaagggtctgagcacatgtgggctgagcatccccatttctctggagaagtctcaaggttgcaagg gagccatgaggatgcttctgcatttgagtttgctagctcttggagctgcctacgtgtatgccatccccacagaaattccc acaagtgcattggtgaaagagaccttggcactgctttctactcatcgaactctgctgatagccaatgagactctgaggat 20 tcctgttcctgtacataaaaatcaccaactgtgcactgaagaaatctttcagggaataggcacactggagagtcaaactg ggagaagaagacggagagtaaaccaattcctagactacctgcaagagtttcttggtgtaatgaacaccgagtggataat agaaagttgagactaaactggtttgttgcagccaaagattttggaggagaaggacattttactgcagtgagaatgagggc caagaaagagtcaggccttaattttcaatataatttaacttcagagggaaagtaaatattcaggcatactgacactttg 25 ccagaaagcataaaattcttaaaatatatttcagatatcagaatcattgaagtattttcctccaggcaaaattgatatac ttttttcttatttaacttaacattctgtaaaatgtctgttaacttaatagtatttatgaaatggttaagaatttggtaaa ttagtatttatttaatgttatgttgtgttctaataaaacaaaaatagacaactgttc (SEQ ID NO:11916) agaggategtetgtagacaggatatgateategtggegeatgtattaeteateettttgggggeeaetgagataetgeaa 30 gctgacttacttcctgatgaaaagatttcacttctcccacctgtcaatttcaccattaaagttactggtttggctcaagt tcttttacaatggaaaccaaatcctgatcaagagcaaaggaatgttaatctagaatatcaagtgaaaataaacgctccaa aagaagatgactatgaaaccagaatcactgaaagcaaatgtgtaaccatcctccacaaaggcttttcagcaagtgtgcgg accatectgeagaacgaccaeteactaetggecageagetgggettetgetgaaetteatgeeceaecagggteteetgg aacetcaattgtgaatttaacttgcaccacaaacactacagaagacaattattcacgtttaaggtcataccaagtttccc ttcactgcacctggcttgttggcacagatgcccctgaggacacgcagtattttctctactataggtatggctcttggact aaaccaqtqtctqcttttccaatccattqctttqattatgaagtaaaaatacacaatacaaggaatqgatatttqcagat 40 agaaaaattgatgaccaatgcattcatctcaataattgatgatctttctaagtacgatgttcaagtgagagcagcagtga gctccatgtgcagagaggcagggctctggagtgagtggagccaacctatttatgtgggaaatgatgaacacaagcccttg agagagtggtttgtcattgtgattatggcaaccatctgcttcatcttgttaattctctcgcttatctgtaaaatatgtca aagctggaatttaaattcaagcatgttttaacttttggtttaaggtacttgggtgtacctggcagtgttgtaagctcttt 45 acattaattaattaactctctaggtactgttatcttcattttataaacaaggcagctgaagttgagagaaataagtaacc tgtcctaggtcacacaattaggaaatgacagatctggcagtctatttccaggcagtctatttccacgaggtcatgagtgc gaaagagggactaggggaagaatgattaactccagggagctgacttttctagtgtgcttacctgttttgcatctctcaag gatgtgccatgaagctgtagccaggtggaattgtaccacagccctgacatgaacacctgatggcagctgctggggttggag cctagacaaaaacatgaagaaccatggctgctgcctgagcccatcgtgctgtaattatagaaaaccttctaagggaagaa 50 tatgctgatatttttcagataagtaccccttttataaaaatcctccaagttagccctcgattttccatgtaaggaaacag aggetttgagataatgtetgteteetaagggacaaagccaggacttgateetgtettaaaaatgcaaaatgtagtactte ttccatcaaaggtagacatgcactaagggacaggttttggcttggtatcagaatacatttttaaaagctgtgtaagaattgaacgggctgtactagggggtata (SEQ ID NO:11917) 55 agtaatatcaaagatctctttgtaaccactaactatgaggtcctctgcattttcatatacatcttagattcggctgacaa ttttctacaaaaaaaqaaqctqqqtccaqtqagacqqaaattqaagtcatctqttatatagagaaqcctggagttgaga ccctggaggattctgtgttttgactgtcactttggcatcctctgatgaactcacacatgcctcagtgcctcagtgaaaaag 60 aacaqqqatqctqqctcttqqctaagaggtgttcagaatttaqqcaacactcaatttacctgcgaaqcaatacacccaga cacaccagtcttgtatctcttaaaagtatggatgcttcatccaaatcgcctcacctacagcagggaagttgactcatcca agcattttgccatgttttttctccccatgccgtacagggtagcacctcctcacctgccaatctttgcaatttgcttgact cacctcagacttttcattcacaacagacagcttttaaggctaacgtccagctgtatttacttctggctgtgcccgtttgg ctgtttaagctgccaattgtagcactcagctaccatctgaggaagaaagcattttgcatcagcctggagtgaaccatgaa 65 cttggattcaagactgtcttttctatagcaagtgagagccacaaattcctc (SEQ ID NO:11918) ccgctgcttctcatcgcatcgccaccgcatttctcaggccaggcacattgagcattggtcctgtgcctgacgctatgcta gatgetggggttgeagecacgageatagacacgacaggtcetegecatettetgttgagtactggteggaacaag aggategtetgtagacaggetacagattgttttagattgaagttteetgteatgtteacteatetttaaateeteatagt tgatgaaaagatttcacttctcccacctgtcaatttcaccattaaagttactggtttggctcaagttcttttacaatgga aaccaaatcctgatcaagagcaaaggaatgttaatctagaatatcaagtgaaaataaacgctccaaaagaagatgactat atttaacttgcaccacaacactacagaagacaattattcacgtttaaggtcataccaagtttcccttcactgcacctggcttgttggcacagatgccctgaggacacgcagtattttctctactataggtatggctcttggactgaagaatgccaaga caaataaatcctccactgaatgtcacagcagagattgaaggaactcgtctctatccaatgggagaaaccagtgtctgc ttttccaatccattgctttgattatgaagtaaaaatacacaatacaaggaatggatatttgcagatagaaaaattgatga ccaatgcattcatctcaataattgatgatctttctaagtacgatgttcaagtgagagcagcagtgagctccatgtgcaga gaggcagggctctggagtgagtggagccaacctatttatgtggggttctcaagataaaggagataacatccagctttcct gccccacaccgtatctgaaataaaaacaacagcagggatagcagatt (SEQ ID NO:11919)

```
atttaacttgcaccacaaacactacagaagacaattattcacgtttaaggtcataccaagtttcccttcactgcacctgg
     cttgttggcacagatgcccctgaggacacgcagtattttctctactataggtatggctcttggactgaagaatgccaaga
     atacagcaaagacacactggggagaaatatcgcatgctgtttcccaggacttttatcctcagcaaagggcgtgactgc
tttcggtgcttgttaacggctccagcaagcactctgctatcaggccttttgatcagctgtttgcccttcacgcattgat
caaataaatcctccactgaatgtcacagcagagattgaaggaactcgtctctctatccaatgggagaaaccagtgtctgc
     ttttccaatccattgctitgattatgaagtaaaaatacacaatacaaggaatggatatttgcagatagaaaaattgatga
     ccaatgcattcatctcaataattgatgatctttctaagtacgatgttcaagtgagagcagcagtgagctccatgtgcaga
     cttgtgatcaaaaaaggtaatcccagaaacgtacccgttcactcgtgggtcttaaaatggtttcatatctctattgtgac
     taattiteteteggtetaetgeettiteaateaggaatagatttgeeatgaageeagtgaagtttttaagtgtetagget
     20
     taaactttttattttgaaataattatcacactcacaagctgtgggaagaaataatagagatcctgtgtctctttcatcca
     gttttcctcaagggtaacatcttacaaaactatagtacaatagtggaatagaatatttggtgtt (SEQ ID NO:11920)
     ccgctgcttctcatcgcatggccaccgcatttctcaggccaggcacattgagcattggtcctgtgcctgacgctatgcta
     aggategtetgtagacaggetacagattgttttagattgaagttteetgteatgtteacteatetttaaateeteatagt
     tgatgaaaagatttcacttctcccacctgtcaatttcaccattaaagttactggtttggctcaagttcttttacaatgga
     aaccaatcctgatcaagagcaaaggaatgttaatctagaatatcaagtgaaaataaacgctccaaaagaagatgactat
    aaccagaatcactgatcaaggacaaatgtgtaatctagatatcaagtgataattaagtgataataagtgtgagatatcaagtggacatactgaagaagatgatgataacaatcatcaaaaaggattttcaagcaaagtgtgcggaccatcctgcagaa
cgaccactcactactggccagcagctgggtttctgctgaacttcatgccccacaagggtctcctggaacctcaattgtga
atttaacttgcaccacaaacactacagaagacaattattcacgtttaaggtcataccaagtttcccttcactgcacctgg
cttgttggcacagatgcccctgaggacacgcagtattttctctactataggtatggctctttggacctgaagaatgccaaga
atacagcaaagacacctggggagaaatatcgcatggtttcccaggacttttatcctcagcaaagggggtgactggc
tttcggtgcttgttaacggctccagcaagcactctgctatcaggcccttgatcacactggtgtttgcccttcacgccattgat
caaataaatcctccactgaatgtcacagcaggagttgaaggaactcgtctctctatccaatgggagaaaccaggtctgc
ttttccaatccattgctttgattatgaagtaaaaataccaaatacaaggaatggatatttgcagatagaaaaattgatga
35
     ccaatgcattcatctcaataattgatgatctttctaagtacgatgttcaagtgagagcagcagtgagctccatgtgcaga
     gaggcagggctctggagtgagtgagccaacctatttatgtgggaaatgatgatgacacaagcccttgagagagtggtttgt
     cattgtgattatggcaaccatctgcttcatcttgttaattctctcgcttatctgtaaaatatgtcatttatggatcaagt
     gagacggaaattgaagtcatctgttatatagagaagcctggagttgagaccctggaggattctgtgtttttgactgtcact
     ttggcatcctctgatgaactcacacatgcctcagtgcctcagtgaaaagaacagggatgctggctcttggctaagaggtg
     ttcagaatttaggcaacactcaatttacctgcgaagcaatacacccagacacaccagtcttgtatctcttaaaagtatgg
     atgetteatecaaategeeteacetacageagggaagttgacteatecaageattttgeeatgtttttteteeceatgee
     tttaaggctaacgtccagctgtatttacttctggctgtgccgttttggctgtttaagctgccaattgtagcactcagctac
     catctgaggaagaagcattttgcatcagcctggagtgaaccatgaacttggattcaagactgtcttttctatagcaa (SEQ ID NO:11921)
     \tt gtctttgaaaggatctgccgctgcttctcatcgcatggccaccgcatttctcatggccaggcacattgagcattggtcct
     gtgcctgacgctatgctagatgctggggttgcagccacgagcatagacacgacacggtcctcgccatcttctgttg
    agtactggtcggaacaagaggatcgtctgtagacaggatatgatcatcgtggcgcatgtattactcctcttttgggggccattgattactcatcatttttgggggccattgattactcacattaaagttacttgattggtttggtttggtttagtcaagtgtattactctgatgaaacaaagattactactctgatgaaagacaaagatattactctgatcaagagacaaggaatgttaatctagaatatcaagtg
     aaaataaacqctccaaaaqaaqatqactatqaaaccaqaatcactgaaaqcaaatqtqtaaccatcctccacaaagqctt
     caccagggtctcctggaacctcaattgtgaatttaacttgcaccacaaacactacagaagacaattattcacgtttaagg
55
     tcataccaagtttcccttcactgcactggcttgttggcacagatgcccctgaggacacgcagtattttctctactatag
     gtatggctcttggactgaagaatgccaagaatacagcaaagacacactggggagaaatatcgcatgctggtttcccagga
     gatcagctgtttgcccttcacgccattgatcaaataaatcctccactgaatgtcacagcagagattgaaggaactcgtct
     ctctatccaatgggagaaaccagtgtctgcttttccaatccattgctttgattatgaagtaaaaatacacaatacaagga
60
     atggatatttgcagatagaaaaattgatgaccaatgcattcatctcaataattgatgatctttctaagtacgatgttcaa
     gettatgtttattttacattggcagecttecttgtgatcaaaaaaggtaateecagaaaegtaceegtteaetegtgggt
cttaaaatggttteatatetetattgtgactaatttteteteggtetaetgeetttteaateaggaatagatttgeeatg
aagccagtgaagttttaagtgtetaggetteteattagegeeac (SEQ ID NO:11922)
65
     cggtcctcgccatcttctgttgagtactggtcggaacaagaggatcgtctgtagacaggatatgatcatcgtggcgcatg
    cgcagtattttctctactataggtatggctcttggactgaagaatgccaagaatacagcaaagacacactggggagaaat
     ategeatgetggttteccaggaettttatecteageaaagggegtgaetggettgeggtgettgttaaeggetecageaa
     cagagattgaaggaactcgtctctctatccaatgggagaaaccagtgtctgcttttccaatccattgctttgattatgaa
     gtaaaaatacacaatacaaggaatggatatttgcagatagaaaaattgatgaccaatgcattcatctcaataattgatga
     aacctatttatgtgggaaatgatgaacacaagcccttgagagagtggtttgtcattgtgattatggcaaccatctgcttc
     atcttgttaattctctcgcttatctgtaaaatatgtcatttatggatcaagttgtttccaccaattccagcaccaaaaag
     taatatcaaagatctctttgtaaccactaactatgagaaagctgggtccagtgagacggaaattgaagtcatctgttata
     taqaqaaqcctggagttgagaccctggaggattctgtgtttttgactgtcactttggcatcctctgatgaactcacacatg
     cctcagtgcctcagtgaaaagaacagggatgctggctcttggctaagaggtgttcagaatttaggcaacactcaatttac
```

etgegaagcaatacacccagacaccagtettgtatetettaaaagtatggatgetteatecaaategeetteacetaca

gcagggaagttgactcatccaagcattttgccatgttttttctccccatgccgtacagggtagcacctcctcacctgcca cttctggctgttgcccgtttggctgtttaagctgccaattgtagcactcagctaccatctgaggaagaagcattttgcat gagaaattatctcaagctccagaggcctgatccaggatacatcatttgaaaccaactaatttaaaagcataatagagctaatatat (SEQ ID NO:11923) gctgacttacttcctgatgaaaagatttcacttctcccacctgtcaatttcaccattaaagttactggtttggctcaagt tcttttacaatggaaaccaaatcctgatcaagagcaaaggaatgttaatctagaatatcaagtgaaaataaacgctccaa 20 aaaccagtgtctgcttttccaatccattgctttgattatgaagtaaaaatacacaatacaaggaatggatatttgcagat agaaaaattgatgaccaatgcattcatctcaataattgatgatctttctaagtacgatgttcaagtgagagcagtga gctccatgtgcagagaggcagggctctggagtgagtgagccaacctatttatgtgggaaatgatgaacacaagcccttg agagagtggtttgtcattgtgattatggcaaccatctgcttcatcttgttaattctctcgcttatctgtaaaatatgtca 25 aagctggaatttaaattcaagcatgttttaacttttggtttaaggtacttgggtgtacctggcagtgttgtaagctcttt acattaattaattaactetetaggtaetgttatetteattttataaacaaggeagetgaagttgagagaaataagtaace tgtcctaggtcacacaattaggaaatgacagatctggcagtctatttccaggcagtctatttccacgaggtcatgagtgc gaaagaggactaggggaagaatgattaactccagggagctgacttttctagtgtgcttacctgttttgcatctctcaag gatgtgccatgaagctgtagccaggtggaattgtaccacagccctgacatgaacacctgatggcagctgctgggttggag 30 cctagacaaaaacatgaagaaccatggctgctgctgagcccatcgtgctgtaattatagaaaaccttctaagggaagaa tatgetgatattttteagataagtaccccttttataaaaatcctccaagttagccctcgattttccatgtaaggaaacag aggetttgagataatgtetgtetectaagggacaaagccaggacttgatectgtettaaaaaatgcaaaatgtagtaette ttccatcaaaggtagacatgcactaagggacaggttttggcttggtatcagaatacatttttaaaagctgtgtaagaatt gaacgggctgtactagggggtatagatctttctaagtacgatgtcaagtgagagagcagcagtgagagctgaatttgtcaaggggctctggggtatagagccatcttttatgtgggagtacaacctattatgtgggagatgaacaacaagcccttgagagagtggttctgtcattgtgagattatggcaaccatctgcttcatcttgttaattctctcgcttatctgtaaaatatgtcatttatggatcaagttgtttcaactattcaagatcaagttgtttcaactattcaagatcaagatctctttgtaaaccactaagatgtcctctgcattttcat atatagagaagcctggagttgagaccctggaggattctgtgttttgactgtcactttggcatcctctgatgaactcacac atgcctcagtgcctcagtgaaaagaacagggatgctggctcttggctaagaggtgttcagaatttaggcaacactcaatt tacctgcgaagcaatacacccagacaccagtcttgtatctcttaaaagtatggatgcttcatccaaatcgcctcacct acagcaggaagttgactcatccaagcattttgccatgttttttctccccatgccgtacagggtagcacctcctcacctg ttacttotggctgtgcccgtttggctgtttaagctgccaattgtagcactcagctaccatctgaggaagaaagcattttg catcagcctggagtgaaccatgaacttggattcaagactgtctttctatagcaagtgagagccacaaattcctcccgct tggggttgcagccacgagcatagacacgacagacacggtcctcgccatcttctgttgagtactggtcggaacaagaggat cgtctgtagacaggctacagattgttttagattgaagtttcctgtcatgttcactcatctttaaatcctcatagtaaaaa 50 aaaagatttcacttctcccacctgtcaatttcaccattaaagttactggtttggctcaagttcttttacaatggaaacca aatcetgatcacqagcaaaggaatgttaatctagaatatcaagtgaaaatcactaaagctccaaaagaagatgactatgaaac cagaatcactgaaagcaaatgtgtaaccatcctcacaaaggcttttcagcaagtgtgcggaccatcctgcagaacgacc actcactactggccagcagctgggcttctgctgaacttcatgcccaccagggtctcctgggaacctcaattgtgaattta acttgcaccacaaacactacagaagacaattattcacgtttaaggtcataccaagtttcccttcactgcacctggcttgt tggcacagatgcccctgaggacacgcagtattttctctactataggtatggctcttggactgaagaatgccaagaataca gcaaagacacactggggagaaatatcgcatgctggtttcccaggacttttatcctcaggaagaaggagtgactggctttcg gtgcttgttaacggctccagcaagcactctgctatcaggccctttgatcagctgtttgcccttcacgccattgatcaaaa aaatcctccactgaatgtcacagcagagattgaaggaactcgtctctctatccaatgggagaaaccagtgtctgcttttc caatccattgctttgattatgaagtaaaaatacacaatacaaggaatggatatttgcagatagaaaaattgatgaccaat 60 qcattcatctcaataattgatgatctttctaagtacgatgttcaagtgagagcagtgagctccatgtgcagagaggc agggetetggagtggagtggagceaacetatttatgtggggtteteaagataaaggagataacatecagettteetgeeee acaccgtatetgaaataaaaacaacagcagggatagcagattccgctgcttctcatcgcatggccaccgcatttctcagg ccaggcacattgagcattggtcctgtgcctgacgctatgctagatgctggggttgcagccacgagcatagacacgacaga cacggtcctcgccatcttctgttgagtactggtcggaacaagaggatcgtctgtagacaggctacagattgttttagatt 65 gaagtttcctgtcatgttcactcatctttaaatcctcatagtaaaaaggatatgatcatcgtggcgcatgtattactcat ccattaaagttactggttiggctcaagttcttttacaatggaaaccaaatcctgatcaagagcaaaggaatgttaatcta gaatatcaagtgaaaataaacgctccaaaagaagatgactatgaaaccagaatcactgaaagcaaatgtgtaaccatcct deacaaaggetttteageaagtgtgeggaceateetgeagaaegaeeaeteaetaetggeeageagetgggettetgetg 70 aacttcatgccccaccagggtctcctggaacctcaattgtgaatttaacttgcaccacaaacactacagaagacaattat tcacgttttaaggtcataccaagtttcccttcactgcacctggcttgttggcacagatgcccctgaggacacgcagtattt 75 agatttgccatgaagccagtgaagtttttaagtgtctaggcttctcattagtgccaactctcctagacctggtgcctgtt tttttccaagttttgtttctacttctatccattttttaaattaaactttttattttattttgaaataattatcacactcacaag ctgtgggaagaataatagagatcctgtgtctctttcatccagttttcctcaagggtaacatcttacaaaactatagtac

aatagtggaatagaatatttggtgttccgctgcttctcatcgcatggccaccgcatttctcaggccaggcacattgagca ttctgttgagtactggtcggaacaagaggatcgtctgtagacaggctacagattgttttagattgaagtttcctgtcatg ttcactcatctttaaatcctcatagtaaaaaggatatgatcatcgtggcgcatgtattactcatccttttgggggccact gagatactgcaagctgacttacttcctgatgaaaagatttcacttctcccacctgtcaatttcaccattaaagttactgg tttggctcaagttcttttacaatggaaaccaaatcctgatcaagagcaaaggaatgttaatctagaatatcaagtgaaaa taaacgctccaaaagaagatgactatqaaaccagaatcactgaaagcaaatgtgtaaccatcctccacaaaggcttttca gcaagtgtgcggaccatcctgcagaacgaccactcactactggccagcagctgggcttctgctgaacttcatgccccacc agggtctcctggaacctcaattgtgaatttaacttgcaccacaaacactacagaagacaattattcacgtttaaggtcat 10 accaagtttcccttcactgcacctggcttgttggcacagatgcccctgaggacacgcagtattttctctactataggtat ggctcttggactgaagaatgccaagaatacagcaaagacacactggggagaaatatcgcatgctggtttcccaggacttt agctgtttgcccttcacgccattgatcaaataaatcctccactgaatgtcacagcagagattgaaggaactcgtctctct atccaatgggagaaaccagtgtctgcttttccaatccattgctttgattatgaagtaaaaatacacaatacaaggaatgg 15 atatttgcagatagaaaaattgatgaccaatgcattcatctcaataattgatgatctttctaagtacgatgttcaagtga cacaagcocttgagagagtggtttgtcattgtgattatggcaaccatctgcttcatcttgttaattctctcgcttatctg taaaatatgtcatttatggatcaagttgtttccaccaattccagcaccaaaaagtaatatcaaagatctctttgtaacca ctaactatgagaaagctgggtccagtgagacggaaattgaagtcatctgttatatagagaagcctggagttgagaccctg 20 gaggattctgigttttgactgtcactitggcatcctctgatgaactcacatgccicagtgcctcagtgaaaagaacag ggatgctggctcttggctaagaggtgttcagaatttaggcaacactcaatttacctgcgaagcaatacacccagacacac cagtettgtatetettaaaagtatggatgetteateeaaategeeteacetacageagggaagttgaeteeateeaageat tttgccatgttttttctccccatgccgtacagggtagcacctcctcacctgccaatctttgcaatttgcttgactcacct cagacttteattcacaacagacagcttttaaggctaacgtccagctgtatttacttctggctgtgccgtttggctgttta agctgccaattgtagcactcagctaccatctgaggaagaaagcattttgcatcagcctggagtgaaccatgaacttggattcaagactgtcttttctatagcaagtcttttgaaaggatctgccgctgcttctcatcgcatggccaccgcatttctcagg ccaggcacattgagcattggtcctgtgcctgacgctatgctaggatgtctggggttgcagccacgagcatagacacgacaga cacggtcctcgccatcttctgttgagtactggtcggaacaagaggatcgtctgtagacaggatatgatcatcgtggcgca 30 aatgttaatetaqaatateaagtgaaaataaaegetecaaaagaagatgactatgaaaeeagaateaetgaaagcaaatg gggcttctgctgaacttcatgccccaccagggtctcctggaacctcaattgtgaatttaacttgcaccacaaacactaca gaagacaattattcacgtttaaggtcataccaagtttcccttcactgcacctggcttgttggcacagatgcccctgagga 35 cacgcagtattttctctactataggtatggctcttggactgaagaatgccaagaatacagcaaagacacactggggagaa atategeatgetggtttcccaggacttttatcctcagcaaagggegtgactggcttgcggtgcttgttaaeggetccage agcagagattgaaggaactcgtctctctatccaatgggagaaaccagtgtctgcttttccaatccattgctttgattatg aagtaaaaatacacaatacaaggaatggatatttgcagatagaaaaattgatgaccaatgcattcatctcaataattgat tcaatcaggaatagatttgccatgaagccagtgaagtttttaagtgtctaggcttctcattagcgccaccggtcctcgcc 45 acttcatgccccaccagggtctcctggaacctcagttgtgaatttaacttgcaccacaaacactacagaagacaattatt 50 cacqtttaaqqtcataccaaqtttcccttcactqcacctqqcttqttqqcacaqatqcccctqaqqacacqcaqtatttt ctctactataggtatggctcttggactgaagaatgccaagaatacagcaaagacacactggggagaaatatcgcatgctg ggaactcgtctctctatccaatgggagaaaccagtgtctgcttttccaatccattgctttgattatgaagtaaaaataca 55 caatacaaggaatggatatttgcagatagaaaaattgatgaccaatgcattcatctcaataattgatgatctttctaagt gtgggaaatgatgaacacaagcccttgagagagtggtttgtcattgtgattatggcaaccatctgcttcatcttgttaat tctctcgcttatctgtaaaatatgtcatttatggatcaagttgtttccaccaattccagcaccaaaaagtaatatcaaag atctctttgtaaccactaactatgagaaagctgggtccagtgagacggaaattgaagtcatctgttatatagagaaagcct 60 ggagttgagaccctggaggattctgtgtttttgactgtcactttggcatcctctgatgaactcacacatgcctcagtgcct cagtgaaaagaacagggatgctggctcttggctaagaggtgttcagaatttaggcaacactcaatttacctgcgaagcaa tacacccagacaccagtcttgtatctcttaaaagtatggatgcttcatccaaatcgcctcacctacagcagggaagtt gactcatccaagcattttgccatgttttttctccccatgccgtacagggtagcacctcctcacctgccaatctttgcaat gcccgtttggctgtttaagctgccaattgtagcactcagctaccatctgaggaagaaagcattttgcatcagcctggagt
gaatcatgaacttggattcaagactgtcttttctatagcaagtgagagccacaaattcctcacccccctacattctagaa cagaaacagacaaacctttttggaaagcatttgaaaatggcattccccctccacagtgtgtttcacagtgtgggcaaattc 70 actgctctgtcgtactttctgaaaatgaagaactgttaCaccaaggtgaattatttataaattatgtacttgcccagaag cgaacagacttttactatcataagaacccttccttggtgtgtgctctttatctacagaatccaagacctttcaagaaaggtc ttggattetttetteaggacactaggacataaagccacettttatgatttgttgaaattteteactecatecettttg ctgatgatcatgggtcctcagaggtcagacttggtgtccttggataaagagcatgaagcaacagtggctgaaccagagtt 75 gtgcaccactttctggagcataaacataccttaactttacaacttgagtggccttgaatactgttcctatctggaatgtg ctgttctctttcatcttcctctattgaagccctctattcctcaatgccttgctccaactgcctttggaagattctgctc ttätgeeteeactggaattaatgtettagtaceacttgtetattetgetatätagteagteettaeattgetttettett ctgatagaccaaactetttaaggacaagtaeetagtettatetatttetägateeeeacattaeteagaaagttaetee 80 ataaatgtttgtggaactgatttctatgtgaagacatgtgcccttcactctgttaactagcattagaaaaacaaatctt

 ${\tt tatgccattaaaaagaaaatCatCcatgatcttgttctaacacctgccactctagtactatatctgtcacatggtctatga$ taaagttatctagaaataaaaaagcalacaatigataattcaccaaattgtgagcttcagtatittaaatgtatattaa aattaaattattitaaagatcaaagaaaactttcgtcatactccgtattigataaggaacaaataggaagtgtgatgact caggtttgccctgaggggatgggccatcagttgcaaatcgtggaatttcctctgacataatgaaaagatgagggtgcata agttetetagtagggtgatgatataaaaagecaeeggageaeteeataaggeaeaaeettteagagaeageagageaeae aagettetaggacaagagecaggaagaaaceaceggaaggaaceatteteactgtgtgtaaacatgacttecaagetgge cgtggctctctttggcagccttcctgatttctgcagctctgtgtgaaggtaagcacatctttctgacctacagcgttttcc tatgictaaatgigatccttagatagcaaagctaitcttgatgcttiggtaacaaacatccttittattcagaaacagaa 10 tcctattgagaaccacggttacctatattatgtattaatattgagttgagcaaggtaactcagacaattccactccttgt agtatttcattgacaagcctcagatttgtcattaattcctgtctggtttaaagataccctgattatagaccaggcatgta taacttatttatatatttctgttaattetttctgaaggcaatttetatgetggagagtettagettgectactataaata acactgtggtatcacagaggattatgcaatattgaccagataaaaataccatgaagatgttgatattgtacaaaaagaac $\verb|ctaggagatattcaggaatgagttcactagaaacatgatgccttccatagtctccaaataatcatattggaattagaaggaa$ aagtagctggcagagctgtgcctgttgataaaatcaatccttaatcactttttcccccaacaggtgcagttttgccaagg agtgctaaagaacttagatgtcagtgcataaagacatactccaaacctttccaccccaaatttatcaaagaactgagagt gattgagagtggaccacactgcgccaacacagaaattatgtaagtactttaaaaaagattagatattttgttttagcaaa cttaaaattaaggaaggtggaaatatttaggaaagttccaggtgttaggattacagtagtaaatgaaacaaaacaaaata 25 agaaagaccatacatagtttgcccaggaaattctgggtttaagcttgtgtcctatactcttagtaaagttctttgtcact CCCaqtagtqtcctattttagatgataatttctttgatctccctatttatagttgagaatatagagcatttctaacacat gaatgtcaaagactatattgacttttcaagaaccctactttccttcttattaaacatagctcatctttatattttaatt ttattttagggetgagaatteataaaaaaatteattetetgtggtateeaagaateagtgaagatgeeagtgaaaettea 30 agcaaatctacttcaacacttcatgtattgtgtgggtctgttgtagggttgccagatgcaatacaagattcctggttaaa tttgaatttcagtaaacaatgaatagtttttcattgtaccatgaaatatccagaacatacttatatgtaaagtattattt atttgaatctacaaaaacaacaacaataatttttaaatataaaggattttcctagatattgcacgggagaatatacaaatag caaaattgggccaagggccaagagaatatccgaactttaatttcaggaattgaatgggtttgctagaatgtgatatttga agcatcacataaaaatgatgggacaataaattttgccataaagtcaaatttagctggaaatcctggatttttttctgtta aatctggcaaccctagtctgctagccaggatccacaagtccttgttccactgtgccttggtttctcctttatttctaagt ggaaaaagtattagccaccatcttacctcacagtgatgttgtgaggacatgtggaagcactttaagtttttcatcataa tttggaaaaatagaagatgaatcattgattgaatagttataaagatgttatagtaaatttattttattttagatattaaa tgatgttttattagataaatttcaatcagggtttttagattaaacaacaacaattgggtacccagttaaattttcatt tcagatatacaacaaataattttttagtataagtacattattgtttatctgaaattttaattgaactaacaatcctagtt tgatactcccagtcttgtcattgccagctgtgttggtagtgctgtgttgaattacggaataatgagttagaactattaaa acagccaaaactccacagtcaatattagtaatttcttgctggttgaaacttgtttattatgtacaaatagaetcttataa tattattaaatgactgcatttttaaatacaaggctttatattttaactttagtgtttttatgtgctctccaaattttt tttactgtttctgattgtatggaaatataaaagtaaatatgaaacatttaaaatataatttgttgtcaaagtaatcaagt gtttgtctttttttagttttagcttattgggattctctttgtttatatttaaaattatactttgatttagaaaacataa atgcttccccttagcattttgttatggaaaattacaaacttttatttttagaaaacagaactcctttccagaaataggtt tcagatttcgattaaccggtttgtatgtctgtgcactttagcatagctggacattaaagaggaaagagagtacatattat aagttgcttatcagtaactgaggagtaaaactgataaatgtgaggcaaagaagtttaaaatatggttaaagcctaagcat aacaaattagacacagttgaaaataaaattagaaaactagaaaatagaacaaaagaaacttctggaattca (SEQ ID NO:11925) tattcatcaagtgccctctagctgttaagtcactctgatctctgactgcagctcctactgttggacacacctggccggtg cttcagttagatcaaaccattgctgaaactgaagaggacatgtcaaatattacagatccacagatgtgggattttgatga tctaaatttcactggcatgccacctgcagatgaagattacagcccctgtatgctagaaactgagacactcaacaagtatg 55 ttgtgatcatcgcctatgccctagtgttcctgctgatgctggtgaaactccctggtgatgctggtcatcttatacagc agggteggeegeteegteactgatgtetacetgetgaacetggeettggeegacetactetttgeectgacettgeeeat tctacagtggcatcctgctggttggcctgcatcagtgtggaccgttacctggccattgtccatgccacacgcacactgacc cagaagcgtcacttggtcaagtttgtttgtcttggctgctggggactgtctatgaatctgtccctgcccttcttcttt ccgccaggcttaccatccaaacaattccagtccagtttgctatgaggtcctgggaaatgacacagcaaaatggcggatgg tgttgcggatcctgcctcacacctttggcttcatcgctgttttgtcatgctgttctgctatcgtatctcctgcttcaccctgcgtacacctgttttaaggcccacatggggcagaagcaccgagccatgagggcatctttgctgtcgtcgtcgtcatcttctgctattct acaacatcgccaacatctggtcctgctggcagaccacctcatgaggaccacaggtgatccaggaggctgtgagcgccga acaacatcggccgggccctggatgccactgagattctgggatttctccatagctgctcaaccacatcatctacgccttca atcggccaaaattttcgccatggattcctcaagatcctggctatgcatggcctggtcagcaaggagttcttggcacgtca tcgtgttacctcctacacttcttcgtctgtcaatgtctcttccaacctctgaaaaccatcgatgaaggaatatctcttc ggggacgctataggatgtggggaagttaggaactggtgtcttcaggggccacaccaaccttctgaggagctgttgaggta cctccaaggaccggcctttgcacctccatggaaacgaagcaccatcattcccgttgaacgtcacatctttaacccactaa 70 ctqqctaattaqcatqqccacatctqaqccccqaatctqacattaqatqaqaqaacaqqqctqaaqctqtqtcctcatqa gggctggatgctctcgttgaccctcacaggagcatctcctcaactctgagtgttaagcgttgagccaccaagctggtggc tetgtgtgctetgateegageteaggggggtggtttteecateteaggtgtgtttgeagtgtetgetggagaeattgagge aggcactgccaaaacatcaacctgccagctggccttgtgaggagctggaaacacatgttccccttgggggtggatgg acaaagagaaagagggtttggaagccagatctatgccacaagaaccccctttacccccatgaccaacatcgcagacacat gtgctggccacetgctgagccccaagtggaacgagacaagcagcccttagcccttcccctctgcagcttccaggctggcg ccgtgct (SEQ ID NO:11926) cctacaggtgaaaagcccagcgacccagtcaggatttaagtttacctcaaaaatggaagattttaacatggagagtgaca gctttgaagatttctggaaaggtgaagatcttagtaattacagttacagctctaccctgcccccttttctactagatgcc gccccatgtgaaccagaatccctggaaatcaacaagtattttgtggtcattatctatgccctggtattcctgctgagcct gctgggaaactccctcgtgatgctggtcatcttatacagcagggtcggccgctccgtcactgatgtctacctgctgaacc tagecttggcegacetactetttgccetgacettgcccatetgggcegcetecaaggtgaatggetggatttttggcaca

```
ttcctgtgcaaggtggtctcactcctgaaggaagtcaacttctatagtggcatcctgctactggcctgcatcagtgtgga
      ccgttacctggccattgtccatgccacacgcacactgacccagaagcgctacttggtcaaattcatatgtctcagcatct
     ggggtctgtccttgctcctggccctgcctgtcttacttttccgaaggaccgtctactcatccaatgttagcccagcctgc
tatgaggacatgggcaacaatacagcaaactggcggatgctgttacggatcctgccccagtcctttggctcatcgtgc
     atgaggacccaggtgatccaggagacctgtgagcgccgcaatcacatcgaccgggctctggatgccaccgagattctggg
catccttcacagctgcctcaaccccctcatctacgccttcattggccagaagtttcgccatggactcctcaagattctag
      tocactactctctaagacctcctgcctaagtgcagocccgtggggttcctcccttctctcacagtcacattccaagcct
     catgtccactgttcttagatctcttgctaagtgtagtetetgtgggggtttttettetttettetetaagtetaatteteaagttet
catgtccactgttcttcttgtgtctcagtgtcaatgcagccccattgtgtcacaggaagcagaggaggccacgttctt
actagtttcccttgcatggtttagaaagcttgccctggtgctcaccccttgccataattactatgtcatttgctggagc
tctgcccatcctgcccctgagcccatggcactctatgttctaagaagtgaaaatctacactccagtgagacagctctgca
tactcattaggatggctagtatcaaaagaaagaaaatcagctggccaacgggatgaaaccctgtctctactaaaaatac
     ggatccaagtaggattgagtgtcctgtagttattatccacagggaacattttctacaaagtttttgggagactgtaatgtcat
gggaaatgcaagaatatgtgtccagcatggaagggaatcagtatggaagtcttttgataaattgtggcatttatcactaa
      cattgcctcaaaactttagactacctgccatatacaaattagaggtgaaaattacttccatgtaatatacaagccaacac
20
      aaagaatcctatcccagtttcttggatggataggcaagaatctgggtaaggtttattgtgcaataatcctctttctctt
      ctataggccaggatttaagtttacctcaaaaatggaaaattttggctgggaaaattacatgtgggaagacatcttcagtg
      gagattitagtaattacagtttcagctatgaccctaccccttttctactagattctgccccatgttggccagaatcccta
      gaaatcaattatgttttgatcatcatctatgccctgatgtttctactgaacgtgatgtgaaactccctgccgatgctggt
25
      catcttattcagctgagtcagccactgtcaccgatgtctacctgctgaccctggccttggccgacctgttctttccctg
      acattgcccatcttggctgcctccaagatgaatggctggatttttggcacaatctgtgccaggtggtctagctcctgaag
      gaagtcaacttctacggtggtattctactactggcctgccgcagcatggactgttacctggccattgtccatgccacacg
      cacactgacccagcagcgccacttggtcaagttcatatgtctgggtttgtggaacctgttcctgttactgtccctacgca
      tcttgcttttccgaaggaccttctacccatccaatgttagcccagtctgctatgaggacatgggcaacaatacagcaaac
30
      tggtggatgctgttacggatcctgccccagtcctttggcttcatcgtgccgctgcgatcatgctgttctgctacagattc
      accetgcatacgetgtttaaggcccatatggggcagaagcactggaccatgtgggtcatettttgctgttgtcctcatttt
      cctgctctgctggctgccctacaacctggtcctgctggcagacaccctcatgggaacccagatgaccaatgagacctgtg
      agegeegeaacgacateaaceaggeeetggatgeeactgagattetgggeateetteacagetaceteaateeeeteate
     tacgccttcattggccagaagttttgccatggacttctcaagattatagccatacacggcttgatcagcaaggactccct
gcccaaagacagcaggccttcctttgttggctcttcttcagggcacacttccactactctctaagacctcttgcctaagt
     tctatgttctaagaagtgaaaatctacactccagtgagacagctctgcatactcattaggatggttaatgtcagaagaaa
40
      gaaaatcataaaatagaaggtgtccacaaaggtgcagatgataagtg (SEQ ID NO:11928)
      gtcaggatttaagtttacctcaaaaatggaagattttaacatggagagtgacagctttgaagatttctggaaaggtgaag
      atcttagtaattacagttacagctctaccctgcccccttttctactagatgccgcccatgtgaaccagaatccctggaa
      atcaacaagtattttgtggtcattatctatgcctggtattcctgctgagcctgctgggaaactccctcgtgatgctggt
      catcttatacagcagggtcggccgctccgtcactgatgtctacctgctgaacctagccttggccgacctactctttgccc
45
      tgaccttgcccatctgggccgcctccaaggtgaatggctggatttttggcacattcctgtgcaaggtggtctcactcctg
      aaggaagtcaacttctatagtggcatcctgctactggcctgcatcagtgtggaccgttacctggccattgtccatgccac
      acgcacactgacccagaagcgctacttggtcaaattcatatgtctcagcatctggggtctgtccttgctcctggccctgc
      ctgtcttacttttccgaaggaccgtctactcatccaatgttagcccagcctgctatgaggacatgggcaacaatacagca
      aactggcggatgctgttacggatcctgccccagtcctttggcttcatcgtgccactgctgatcatgctgttctgctacgg
     aactggeggatgetgttaeggatectgeecagteetttggetteategtgeeatggtgateatgttgttetgttaegg
atteacectggtaegetgtttaaggeecacaggggeagaageacegggeeatgegggteatetttgetgteeteat
ettteetgetttgetggetgeectaeaaectggteetggtggagaeaeceteatgaggaeceaggtgatecaggagae
tgtgagegeegaattaeategaeegggetttggatgeeaeggagattetgggeateetteaeagetgeeteaaeceet
eattaegeetteattggeeagaagtttegeeatggaeteeteaagattetagetataeatggettgateageaggaet
ecetgeecaaagaeagaeggetteetttgttggetettetteteagggeaeaetteeaetaetetaaagaeeteetget
aagtgeageeegtggggtteeteeettetttataeagteaeatteaageteaatteeatgteeatteettettetteggetetaa
50
55
     tgtcaatgcagcccccattgtggtcacaggaaggaggaggagacgcttcttactagtttcccttgcatggtttagaagccttgccctggtgcctcaccccttgcatattactatgtcatttgctggagctctgcccatcgtccctgagcccatgg
      cactetatgttetaagaagtgaaaatetacactecagtgagacagetetgcatactcattaggatggetagtatcaaaaag
      60
      gggagaaacatagggaatagaaaataagtaagaaggggacacctgggaacaggtttgccttcttgcattttgcttaatgc
      tggcccttccctgaatgtctaagaccaacctggtcccacatccaaatgcacagacacagctgaggatggagaaggctaa
      agagggacagaggtagagacataggctgagaggaggcagttgtaggttgagctagggctaaggtgttttccccatattcc
      atcttacccacactcaggccaggccttagagttgtggaaggtggagaacactgggaagccaacctccgaagaagaccag
      gttggagtcaaaggaggaggaggagctctcattgccaaaccaacagggaagccaaggatatcccagtaactgctctcaca
65
      ctgaaactgaagaggacatgtcaaatattacagatccacagatgtgggattttgatgatctaaattttcactggcatgcca
      cctgcagatgaagattacagcccctgtatgctagaaactgagacactcaacaagtatgttgtgatcatcgcctatgccct
      agtgttcctgctgagcctgctgggaaactccctggtgatgctggtcatcttatacagcagggtcggccgctccgtcactg
      atgtetacetgetgaacetggcettggccgacetactetttgccctgacettgcccatetgggccgcctccaaggtgaat
70
      ggcctgcatcagtgtggaccgttacctggccattgtccatgccacacgcacactgacccagaagcgtcacttggtcaagt
      ttgtttgtcttggctgctggggactgtctatgaatctgtccctgcccttcttccttttccgccaggcttaccatccaaac
      aattccagtccagtttgctatgaggtcctgggaaatgacacagcaaaatggcggatggtgttgcggatcctgcctcacac
      ctttggcttcatcgtgccgctgtttgtcatgctgttctgctatggattcaccctgcgtacactgtttaaggcccacatgg
75
      ctgctggcagacaccctcatgaggacccaggtgatccaggagagctgtgagcgccgcaacaacatcggccgggccctggatgccactgagattctgggatttctccatagctgcctcaaccccatcatcacgccttcatcggccaaaattttcgccatg
```

 ${\tt tctgagccccgaatctgacattagatgagagaacagggctgaagctgtgtcctcatgagggctggatgctctcgttgaccetcatgagggctggatgctctcgttgaccetcatgagggctggatgctctcgttgaccetcatgagggctggatgctctcgttgaccetcatgagggctggatgctctcgttgaccetcatgagggctgaagctgtgatgctctcatgagggctggatgctctcgttgaccetcatgagggctgaagctgtgatgctctcatgagggctgaagctgtgatgctctcatgagggctgaagctgtgatgctctcatgagggctgaagctga$ ctcacaggagcatctcctcaactctgagtgttaagcgttgagccaccaagctggtggctctgtgtgctctgatccgagct tgccagctggccttgtgaggagctggaaacacatgttccccttgggggtggtggatgaacaaagagaaaagagggtttgga agccagatctatgccacaagaacccctttacccccatgaccaacatcgcagacacatgtgctggccacctgctgagccc caagt (SEQ ID NO:11930) tattcatcaagtgccctctagctgttaagtcactctgatctctgactgcagctcctactgttggacacacctggccggtg cttcagttagatcaaaccattgctgaaactgaagaggacatgtcaaatattacagatccacagatgtgggattttgatga tctaaatttcactggcatgccacctgcagatgaagattacagcccctgtatgctagaaactgagacactcaacaagtatg 10 ttgtgatcatcgcctatgccctagtgttcctgctgagcctgctgggaaactccctggtgatgctggtcatcttatacagc agggtcggccgctccgtcactgatgtctacctgctgaacctggccttggccgacctactcttttgccctgaccttgcccat tctacagtggcatcctgctgttggcctgcatcagtgtggaccgttacctggccattgtccatgccacacgcacactgacc cagaagcgtcacttggtcaagtttgtttgtcttggctgctggggactgtctatgaatctgtccctgcccttcttcctttt 15 ccgccaggettaccatccaaacaattccagtccagtttgctatgaggtcctgggaaatgacacagcaaaatggcggatgg tgttgcggatcctgcctcacacctttggcttcatcgtgccgctgtttgtcatgctgttctgctatggattcaccctgcgt acactgtttaaggcccacatggggcagaagcaccgagccatgagggtcatctttgctgtcgtcctcatcttcctgctttg ctggctgccctacaacctggtcctgctggcagacaccctcatgaggacccaggtgatccaggagagctgtgagcgccgca acaacatcggccgggccctggatgccactgagattctgggatttctccatagctgcctcaaccccatcatctacgccttc atcggccaaaattttcgccatggattcctcaagatcctggctatgcatggcctggtcagcaaggagttcttggcacgtca 20 tcgtgttacctcctacacttcttcgtctgtcaatgtctcttccaacctctgaaaaaccatcgatgaaggaatatctcttct cagaaggaaagaataaccaacaccctgaggttgtgtgtggaaggtgatttggctctggacaggcactattgggtttttgg ggggacgctataggatgtggggaagttaggaactggtgtcttcaggggccaccaccaaccttctgaggacgtgttgaggta cctccaaggaccggcctttgcacctccatggaaacgaagcaccatcattcccgttgaacgtcacatctttaacccactaa ctggctaattagcatggccacatctgagccccgaatctgacattagatgagagaacagggctgaagctgtgtcctcatga gggctggatgctctcgttgaccctcacaggagcatctcctcaactctgagtgttaagcgttgagccaccaagctggtggc tctqtqtqctctqatccgagctcaggggggtggttttcccatctcaggtgtgtttgcagtgtctgctggagacattgaggc aggcactgccaaaacatcaacctgccagctggccttgtgaggagctggaaacacatgttccccttgggggtggtggatga acaaaqaqaaaqaqqtttggaaqccaqatctatgccacaaqaaccccctttacccccatgaccaacatcgcagacacat 30 gtgctggccacctgctgagccccaagtggaacgagacaagcagcccttagcccttcccctctgcagcttccaggctggcg ccgtgctcctacaggtgaaaagcccagcgacccagtcaggatttaagtttacctcaaaaatggaagattttaacatggag agtgacagctttgaagatttctggaaaggtgaagatcttagtaattacagttacagctctaccctgcccccttttctact agatgccgcccatgtgaaccagaatccctggaaatcaacaagtattttgtggtcattatctatgccctggtattcctgc 35 tgagcctgctgggaaactccctcgtgatgctggtcatcttatacagcagggtcggccgctccgtcactgatgtctacctg ctgaacctagccttggccgacctactctttgccctgaccttgcccatctggccgcctccaaggtgaatggctggatttt agcctgctatgaggacatgggcaacaatacagcaaactggcggatgctgttacggatcctgccccagtcctttggcttcatgcgcactgctgttctgctacggattcaccctgcgtacgctgtttaaggcccacatggggcagaagcac 40 cascottos-sagatoutoutous surface control of the con 45 qcacacttccactactctctaagacctcctgcctaagtgcagccccgtggggttcctcccttctcttcacagtcacattc caagcctcatgtccactggttcttcttggtctcagtgtcaatgcagcccccattgtggtcacaggaagcagaggggca cqttcttactagtttcccttgcatggtttagaaagcttgccctggtgcctcaccccttgccataattactatgtcatttg ctggagctctgcccatcctgcccctgagcccatggcactctatgttctaagaagtgaaaatctacactccagtgagacag 50 aaaatacaaaaaaaaaaaaaattagccgggcgtggtggtgagtgcctgtaatcacagctacttgggaggctgagatg qqaqaatcacttgaacccgggaggcagaggttgcagtgagccgagattgtgcccctgcactccagcctgagcgacagtga gactctgtctcagtccatgaagatgtagaggagaaactggaactctcgagcgttgctgggggggattgtaaaatggtgga tocaagtaggattgagtgtcctgtagttattatccacagggaacattctacaaagttttgggagactgtaatgtcatggg 55 aaatgcaagaatatgtgtccagcatggaagggaatcagtatggaagtcttttgataaattgtggcatttatcactaacat tgcclcaaaactttagactacctgccatalacaaattagaggtgaaaattacttccatgtaatatacaagccaacacaa gaatootatoocagtttottggatggataggcaagaatotgggtaaggtttattgtgcaataatootottototottota taggccaggatttaagtttacctcaaaaatggaaaattttggctgggaaaattacatgtgggaagacatcttcagtgggag attttagtaattacagtttcagctatgaccctacccctttctactagattctgcccaatgttggccagaatccctagaa 60 atcaattatgttttgatcatcatctatgccctgatgtttctactgaacgtgatgtgaaactccctgccgatgctggtcat cttattcagctgagtcagccactgtcaccgatgtctacctgctgaccctggccttggccgacctgttcttttccctgaca ttgcccatcttggctgcctccaagatgaatggctggatttttggcacaatctgtgccaggtggtctagctcctgaaggaa gtcaacttctacggtggtattctactactggcctgccgcagcatggactgttacctggccattgtccatgccacacgcac actgacccagcagcgccacttggtcaagttcatatgtctgggtttgtgggaacctgttcctgttactgtccctacgcatct tgcttttccgaaggaccttctacccatccaatgttagcccagtctgctatgaggacatgggcaacaatacagcaaactgg tggatgctgttacggatcctgccccagtcctttggcttcatcgtgccgctgcgatcatgctgttctgctacagattcacc ctgcatacgctgtttaaggcccatatggggcagaagcactggaccatgtgggtcatctttgctgttgtcctcattttcct gctctgctggctgccctacaacctggtcctgctggcagacaccctcatgggaacccagatgaccaatgagacctgtgagc gccgcaacgacatcaaccaggccctggatgccactgagattctgggcatccttcacagctacctcaatccctcatctac 70 gccttcattggccagaagttttgccatggacttctcaagattatagccatacacggcttgatcagcaaggactccctgcc caaagacagcaggccttcctttgttggctcttcttcagggcacacttccactactctaagacctcttgcctaagtgca qtcccgtggggttcctcccttctcttcacagtcacattccaagcctcatgtccactagctcttcttggtctcagtgtcag tgcagcccccactgtggtcgcaggaagcagaggaggccacgttcttactagtttcccttgcatgatttagaaagcctgcc ctggtacctcaccccttgccataattactacatcacttgctggagctctgtccctcctgcccttgagctcatggcactct 75 aatcataaaatagaaggtgtccacaaaggtgcagatgataagtggtcaggatttaagtttacctcaaaaatggaagattt taacatggagagtgacagctttgaagatttctggaaaggtgaagatcttagtaattacagttacagctctaccctgcccc cttttctactagatgccgccccatgtgaaccagaatccctggaaatcaacaagtattttgtggtcattatctatgccctg gtattectgetgageetgetgggaaactecetegtgatgetggteatettataeageagggteggeegeteegteaetga 80 tgtctacctgctgaacctagccttggccgacctactctttgccctgaccttgcccatctgggccgcctccaaggtgaatg gcctgcatcagtgtggaccgttacctggccattgtccatgccacacgcacactgacccagaagcgctacttggtcaaatt

catatgtetcageatetggggtctgteettgeteetggeeetgcetgtettaetttteegaaggacegtetaeteatea atgttageceageetgetatgaggacatgggcaacaatacagcaaactggeggatgetgttaeggateetgeeceagtee tttggcttcatcgtgccactgctgatcatgctgttctgctacggattcaccctgcgtacgctgtttaaggcccacatggg tgctggcagacaccctcatgaggacccaggtgatccaggagacctgtgagcgccgcaatcacatcgaccgggctctggat gccaccgagattctgggcatccttcacagctgcctcaaccccctcatctacgccttcattggccagaagtttcgccatgg gtcacattccaagcctcatgtccactggttcttcttggtctcagtgtcaatgcagcccccattgtggtcacaggaagcag aggaggccacgttcttactagtttcccittgcatggtttagaaagcttgccctggtgcctcaccccttgccataattacta tgtcatttgctggagctctgcccatcctgcccctgagcccatggcactctatgttctaagaagtgaaaatctacactcca gaacaggtttgccttcttgcattttgcttaatgctggcccttccctgaatgtctaagaccaacctggtccccacatccaa atgcacagacacagctgaggatggagaaggctaaagaggacagaggtagagacataggctgagaggaggcagttgtagg ttgagctagggctaaggtgttttccccatattccatcttaccccacactcaggccaggccttagagttgtggaaggtgga 15 ggaagccaaggatatcccagtaactgctctcacatcattgatgagaatgccttgaatccgagctactaaatcacatttcc ttccttctaaccttccagttagatcaaaccattgctgaaactgaagaggacatgtcaaatattacagatccacagatgtg 20 ggattttgatgatctaaatttcactggcatgccacctgcagatgaagattacagcccctgtatgctagaaactgagacac tcaacaagtatgttgtgatcatcgcctatgccctagtgttcctgctgagcctgctgggaaactccctggtgatgctggtc atcttatacagcagggtcggccgctccgtcactgatgtctacctgctgaacctggccttggccgacctactctttgccct gacettgcccatctgggccgcctccaaggtgaatggctggatttttggcacattcctgtgcaaggtggtctcactcctga aggaagtcaacttctacagtggcatcctgctgttggcctgcatcagtgtggaccgttacctggccattgtccatgccaca 25 cttcttccttttccgccaggcttaccatccaaacaattccagtccagtttgctatgaggtcctgggaaatgacacagcaa aatggcggatggtgttgcggatcctgcctcacacctttggcttcatcgtgccgctgtttgtcatgctgttctgctatgga ttcaccctgcgtacactgtttaaggcccacatggggcagaagcaccgagccatgagggtcatctttgctgtcgtcctcat cttcctgctttgctggctgccctacaacctggtcctgctggcagacaccctcatgaggacccaggtgatccaggagagct 30 gtgagcgccgcaacaacatcggccgggccctggatgccactgagattctgggatttctccatagctgcctcaaccccatc atctacgccttcatcggccaaaattttcgccatggattcctcaagatcctggctatgcatggcctggtcagcaaggagtt cttggcacgtcatcgtgttacctcctacacttcttcgtctgtcaatgtctcttccaacctctgaaaaccatcgatgaagg aatatetetteteagaaggaaagaataaccaacaccetgaggttgtgtgtgtgggaaggtgatetggetetggacaggcacta tctgggttttggggggacgctataggatgtggggaagttaggaactggtgtcttcaggggccacaccaaccttctgagga 35 gctgttgaggtacctccaaggaccggcctttgcacctccatggaaacgaagcaccatcattcccgttgaacgtcacatct ttaacccactaactggctaattagcatggccacatctgagccccgaatctgacattagatgagagaacagggctgaagct gtgtcctcatgagggctggatgctctcgttgaccctcacaggagcatctcctcaactctgagtgttaagcgttgagccac caagctggtggctctgtgtgctctgatccgagctcagggggtggttttcccatctcaggtgtgtttccagtgtctgctgc agacattgaggcaggcactgccaaaacatcaacctgccagctggccttgtgaggagctggaaacacatgttccccttggg 40 ggtggtggatgaacaaagagaaagaggtttggaagccagatctatgccacaagaaccccctttacccccatgaccaacatcgcagacacatgtgctggccacctgctgagcccaagt(SEQIDNO:)ccgctgtcaagatgcttctggccatggtcct tacctctgccctgctcctgtgctccgtggcaggccaggggtgtccaaccttggcggggatcctggacatcaaccttcctcctcaccaggaatgtccaggatgtccaaccttggcgggatcctggacatcascttcctcctcatcaacaagatgcaggaagatccagcttccaagtgccactgcagtgctaatgtgaccagttgtctctgtttgggcattccc tctgacaactgcaccagaccatgcttcagtgagagactgtctcagatgaccaataccaccatgcaaacaagatacccact gattttcagtcgggtgaaaaaatcagttgaagtactaaagaacaacaagtgtccatatttttcctgtgaacagccatgca 50 a tatatatat g cata a tag tetet g t g taa eag taag t g g a t g cag taa e t g g t g ag g g caa e t t g g ag ag t g t g c t t g t g ag g g c a a e t t g g ag ag t g t g c t t g ag g c a a e t g g ag ag t g t g c t t g ag g c a a e t g ag g ag t g t g ag g ag t g t g ag g ag t ag t ag ag g ag t ag t ag ag g ag t ag ag g ag t ag ag aggaggcacagagatgctcagggctgcctggactgcctccatgatggtggcctgctctgtattaggtgagtgttcaggaaa ggccagactttgacactgaggccatggaatgggtggggctctgagaacagacccaagtgatcatgggctgaaggctatgt ccacagatccaaggcgggataggctgtactgggcagtgatgtcagccaggctccccagegggactgggggtgtcaggggc 55 agctctgtcccaggtggcagacactggtttcccctcctgctctcacaaccggcctgttaccaggtgttgtctgagctgtg głgaggctłccctggtgacattcaggagcagggagcctgcgagtaagggtgtatgcatctgccctgactgcctggccctg tggtcaaggatgggggaaggcagctctgcctgcagctccaccccatttataaagcactgtggtgccttctgctgggacat gtgctgagtggtgcctcgcaggcactgccctcgggaagttcacaggcttatgtggaagctggtgggaatgggccaagaag agaggtgtcaggagccaggtattgggcaggtcccaggtctctgagcctcagtttcttcatctgtaggagggtggtgaccc 60 tgccctgctcagcttaccaggtacagatgtaagttttcagtgcagaggaaaagcagagaaacttcccctcagatggccata ccccttgtcgctgtacccaactctccggtcctactttgtagctctcaggtgtcacatgtggatcctgccctaccatccc ccttgccctgtctagaaacgaggcctgctgagcttggaaccatcccactccctgctctcaagccgtctgctcctgggtta gcctgtggctgacctggcctgattctacatagatgtgggtgtttctccactgctggggcagcagttgtccattctggggcctgggtcagctctcagctgtggccgttgtgcctgtgcttccccaggtcctggtggtgactccaaccctgccctcacatat 65 ccaaqaqcaggctgactqccttccccattcccactttccaqtaactqctgcaagaacggacaqacactgctgcagaga acttgccacggtgtttcatgctgtggctgttgttccaggctgcacgctccattctaggaaagggtgaggcttcctgatc atcagtcttaacaggggactgtcctatgggtacctgtatacgctgccgggagtggggcagagtggggttagagtagtagtgcc tgctgcccattggggttgtgcggggttccttaagggctgtagtctgtgtgcgtgtctggttttttcctcctccttatcagt aatcagtcttgtataaccaggctggcctgcttcctgcctagggctatcggtgtaccatctqqaqttgcaaatggggtg 70 atagggogtcagcggccttcccacacccaagcacttcctgacacccagccctcatctctagccaacctctggctcccct agggateetggggeteaggeeteaegeteeageateegggggetttgccettetggtgttgetettetttgeaggtgeet tggaacaggggtgcaacagagttcagaaagtgccatctgttgcatggataccctgctgccaccctcgtccacctttctgg cctgtaatcccaacactttgggaggccaaggcaggtggatcccttgaggtcaggaggtcaagactagcctggccaacatg 75 tegggaggetgaggeaggataateaettgaaceeaggaggeggaggttgeagtgageeaagateaeaceactgeacteta gcctgggtgacagagggagactgtctcaaaaaaaaatttgcttagaatttgtctgtgtgtaccctgggcaagtcatttc ccctccttgggactcagttccttgcctgtgaacggggacagtgcttctcccttacagagctgttgtgagaattaaagtag aaaatgtacctatggtggttgttggtagtgaccagttcccccaaccctgactcccctgcaggatgggcctgggcccggg

aatgggggatgggctggcagaggatgactgtcccagagaggagtcttctccggcagatgtggagacctagctgagtcagag gccaggatctaagtttgagggtgttccttacaccctgcagccatgagtctttggctgagtcaaatggcctttctgagctc agttccttatcagtaaagcctggacagtggtccaggacgctggacactgtgtgagtgttaggacacaggacactgtgtg

 $\tt gtgcaggtggggacccatggagcactctgctggggagcaattcatggggagcacccctccagagagggatgatttgcaca$ gggccctcagcccagtcccttgcaggctggaccttggagagtgaggccctgaggcgagacatgggcacctggctcctggc ctgcatctgc (SEQ ID NO:11933) ggatccatgcccagaattattcacgaaattcacttaaaatagcatatatgcttgaacccaggagtctgaggctgcagcga gctatgatcatgtcactgcactccagcccagcctgggcgacagagcaagactctgtgtctaaagaaatgaaaataaaaaat aaataaaatagcatatacaggcaacaatccaaatgttcattgcagaaattatgattattattgtttttcttttagaggca gggtgtcactctgttgcccagactaatcttgacctcctgtgatcctcaagagatcctccggtctctgcttcccaaagttc ttggattacaggtgtgaggcactgggcctagacattgcagggattattaaaaccatggtgcatactaccattaaaggtatg aggtaggttttatatgctgacctagaaagatggtgcaacaccataggggaacaagaaggctgcaaagtggcagcacagca 10 ctoggtcaaaaaaaaaaaaaaaaaaaaaagacogggtgogaggtctctcgcotgtaatcccagcactttgggaggcctaggcag gaggatcacaaggtcaggagatcgagaccatcctggccaacatggtgaaaccccatctctactaaaatacaaaaattagc 15 ogggtgtgtgatggcacacgcctgtagtcccagctactcaggaggctgaggcaggggaatcgcttgaaaccaggaggtggag gctgcagtgagccgagatcacgccactgcactccagctagccagaggcaagagccacgactccatctcaaaaaaagaaaagaaaac aaacaaacaaacaaaatccccaaaaagcaaaagtgtctgcatggacttgtgcctaactactcacagtggctacttcttgg gggaggtgaaaggggaccctgttaaagaatttttcttctgtattgtttttcttcaactgagtctgcattaattttatatt 20 gtagaaggggacaagggcactgctctgcacctgcacaggttcttgcctcctggggtcagtttaatgaatctcagtggtgt tcgggagagcagctctgtaatgcgcttgtggtttcagatgtgggcggcctgtgtgtaacctgtcgtgcaaagctcacgtca 25 ccaactgctgcagttatctcctgaatcaggctgagggtctttgctgtgcacccagagatagttgggtgacaaatcacctc caggttqqqqatqcctcagacttqtqatqqqactqqqcagatqcatctqqqaaggtqagtctqtgctttqqqcttcccaa cctctcaagtcagcatgaaattcagaaggcagagagggacatgtgggcctccaactcggggcccaggggagccactgtggg atttgagagegecaccetagetttacetectetggtgtectggeettgtgtatetettagagatggeaaaatttgeagee ctgacctcaaggattacaaactaatttccagtcctgtaggggtcatgggttctgctgtggccagtgtggcactgagtttg 30 tcaggcagaatttctaattatggaaggaactctgcttcctcagtgattgaactgacctttgtgggggtgcctttgtgggg tgagaatgggcatacttgggcctcagttgtgatggccatggggtggagctgaggtctaggcccagggctgggaaagcttc 35 atgattaatagggttgtttgctttagggcagagcaggggagaggggtaccttttaccaagacagcaggaacacggacat aaggctgtgggaggggtgttttgggcagagcaggcgacgtgggtaccttttaccaagacagcaggaagacgcacggacat cattttcccgtctcacctccagactcccaggggactgtgccaatatcctcactggagccctgcccatggccactgctcaa cccttgggccctgtcagttcaggctgtgcagaaggaggagttgcctgtgctcaggctcagggttccgtccatgctcaagga atgtgcccttgtccacccaacacctctgcagtgccaagtccagccctgacttcttcctgagctgtggcccagcgttccca caggcatttacctcacggatgcagcactgccctcatcctcttctctgaaagtgtgtggggaaatgcttcttggtggccatc tctctcccaccctgccttccctgcaccttctctatgaggtgtctgttgttctctgtacttgcctccagctggcctttcaga ccccatccctccctgcctcctgcccatccctacccctgtcagcaccttacatactctgtgcccaacagcattggggattc ccactgtgctgaaggaagtcctcatgtggtccagagagggagctggccctgctcccattttccagcaccattttctggca accttgctggacaggtgtccacttcaatagtaacttctgaggctgccagcctcctgaatggtccagaagaaccagaccct tccccgccccattaaaaaagacaaaatatggccaggcatgttggctcatgcctgacatcccagcactttgggaggccaa agcaggtgaatcacttgaggccaggagtacgagaccagcctgacaaacatggtgaaaccctgtgtctactaaaaatacaa aaattagccaggcgtggtgactcatgcttgtaaatgcttgtaatcccagctacttgggaggctgaagcaggaggatcact 55 ccggcctgttaccaggtgttgtctgagctgtggtgaggcttccctggtgacattcaggagcagggagcctgtgagtaagg ataaagcactgtggtgctttctgctggggcatgtgctgagtggtgctccaggcatgccctgggaagttcacaggct tatgtggaagctggtgggaatgggccaagaagaggtgtcaggagccaggtattgggcaggtcccaggtctctgagcct 65 aaaagcagagaagttcccctcagatggccatacccccttgtcgctgtacccaactctccggtcctactttgtagctctca ggtgtcacatgtggatcctgcctaccatccccttccctgtctagaaacgaggcctgctgagcttggagccatcccact 70 ctgctggggcagcagttgtccattctggggcctgggtcagctctcagctgtggccgttgtgcctgtgcttccccaggtcc tggtggtgactccaaccctgccctcacatatcccaagagcaggctgactgccttccccattcccacctttccagtaactg ctgcaagaacggacagacattgctgcagagaacttgccacggtgtttcatgctgtggctggtggttccaggctgcacgct ccattctaggaaagggtgaggcttcctgatcatcagtcttaacaggggactgtcctatgggtacctgtatacgctgccgg gagtggggcagagtggggttagagtagtgcctgctgccattggggttgtgcggggttccttaagggctgtagtctgtgtg cgtgtctggttttttcctccttatcagtatcagtcttgtataaccaggctgccctgcttcctgctaggggctatcggtgtaccatctggagttgcaaatggggtgatagggcgtcagcggccttcccacacccaagcacttcctgacacccagcccctcatctctagccaacctctggctccctagggatcctggggctcaggcctcacgctccagcatcc 75 atgcatagaggctgggtctggtgtcacgcctgtaatcccaacactttgggaggccaaggcaggtggatcccttgaggtca

ggcgggagatgcctgtaatcccagctactcgggaggctgaggcaggataatcacttgaacccaggaggcggaggttgcag

gtctgtgtgaccetgggcaagtcatttcccctccttgggactcagttccttgcctgtgaacggggacagtgcttctccct tacagagetgttgtgagaattaaagtagaaaatgtacetatggtggttgttggtagtgaceagtteececaaacetgaet cagatgtggagacctagctgagtcagaggccaggatctaagtttgagggtgttccttacaccctgcagccatgagtcttt ggctgagtcaaatggcctttctgagctcagttccttatcagtaaagcctggacagtggtccaggacgctggacactgtgt gagtgttaggacacaggacactgtgtgagtgcaggtggggacccatggagcactctgctggggagcaattcatggggagc accoctccagagagggatgatttgcacagggccctcagcccagtcccttgcaggctggaccttggagagtgaggccctga ggcgagacatgggcacctggctcctggcctgcatctgcatctgcacctgtgtctgcttgggagtctctgtcacaggggaa atgtcaagcetetagggaaaggtttggcccaaactgtgctggggcatgtcctetaggggtcagcctggacctcagtetet agtetecetacttttacetecetacettcattccctggaccgactgtagtctcccttccttcactctcttgacgcctctc cagatetgaettgeeegtgtaccacaggteagageecateactteecaggeeteeeagtgetteeetggaeagattetgg tacttaccgtgggctcctgatggtcactgtctccagggccaaggtctagaaccttcacctgcctcaccaacaacattctc aggatcgattgccactggtctgccccagagctgggacagggctccagcccctggctcctcttcaccaggtgagcatggag ggccatgcccacctggacagggatgaggtgagttccccaggattgaagcagctatgccaggacagtgtagcagcccgt gcatgcctatgtgtatgagtgtatgtgagtgtggtgagttgcttctgtgcacacacttttgtttatgagtgtgcatgc tgttcaagagtgtgttatatgagcatataatgcatgtgtgtattctcgagggctgagggacccagcccaccttcaccac $\verb|ctgctaactgtccccaccaccagcaggacccaggatcacattgtcggggtgacctggcttatacttgaagcctggcttatacttgaagcctggcttatacttgaagcctggctgacctggcttatacttgaagcctggctgacctggcttatacttgaagcctggctgacctggctgacctggctatacttgaagcctggctgacctggctgacctggctgacctggctgacctggcttatacttgaagcccaccactggctgacctggctgacctggcttatacttgaagcccaccactggctgacctggcttatacttgaagcctggctgacctggcttatacttgaagcctgacctggctgacctggcttatacttgaagcctgacctggctgacctggctgacctggcttatacttgaagcctgacctggctgacctggctgacctggcttatacttgaagcctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctggctgacctgacctggctgacc$ tgtacatgtgtgagcgggcaagagtgtgcatgttagtgtatgtgtgcagatgtgtgactgtgtgcatgtgtgagtgtgt gtgggtgggcatcaagggccgcccttgtctggttcctcccctccccttccactgcctggtcctggacggggtgggctt ttcgagtctccaccctggtccagaagagggttctcaagttgccaggggagagcagggaaggggggtctgagggagaggct gaagataagggcagcttggtcccgaccagacccagagtcaccgagatcaagagccggaggtcctagtctcctgctctgg aggagettggtttgttcatttgttcacatgttctacgaaaggacagttggggcatctggtgtgctcaggaccctgttctc ggggccatgtcaggccgcagatgtgaggaagagggtgtggggagaggggtgttgggggtgtggggctaagtgggagggtgcttc gcttctccttggagcaaaggaaagtgtaaaactgtgtgacacaacctagtttatgttttgaggaatagattgctgggaca aggggacatggggacctgctggaggccaatgggggccagtgaggtgcccacagggagacgatttgcatgagccagtgaa atgagtggtgacccctgaggtggggaaatgggggacagccttgcagggaggttggtgaagtctatttggacctgttgggt tggagccccaggtgacatccttgtgggagggtcagtggatccttggcagcaagtctggtgctcagggagacactgggtgg tttttgttctcaggtctctagttccattgttgattgaaaaaatgtaaatttctcataacttatctctgtcccctctggtt tgcagetttetgcaeccaecatgtgceteaectectectetetgcgaaggtgtetgteetgtgcetgtgggaagggtetg tggtgtgtgtgtgctgcccttggggctctcactgcctctgggctcctgctctgcctggtcccctggtctccccggatcacat gatggcaccacagctgaggagtgggctctgcacttccccccttccacccatgttgggctcctacagcccaggcaccagt agggagagetecagtgagtggtetetggttttteeeeteagaeteetetetttgggeaaaggacaagaggcagtgaggg ttactatgcagaaaaatccttttctctctcaatgaggagcgtagttttcaagatttttgtccaaaaatalaatttgaacc atgaaccgggcatctggctcttggcagagtctccctctttccccaaggtggtagatgtgactgtcaggagcctgggcagc tgacgacaaggctgagcaggtcagattgtgactgtcccctggactgtcatcctgttgcgggcaccagctgttccctagag aactaggacacctgccacgggttatttagactgcgggtgaggatctggtgccataggttggtctccagggagcactgcag tgatggagggtgttgtgtgtgtgtgatgcatgggatggaggctcctggtcccaccaagggaacagcttccttttggaggcgg gggcctcctgtggccccacagaaggatccaggtctgctggccatagccgagtgctttgaaagtcaccagtcctgacagcg

gtgtgtatgtetgtgtgtgtgtftatgtgtgtgtgtgtctgtatgtgtttaagtetgtgtgtgtgtgtgtgtgtgtgtct tatgtttgtgtgtgtgtgtgtgtgtgtgtggggaatgcccagtctctgcagctgctgcaaaggccctgaggcacatgctgtca ggagctggctctgtcctgggcagatatcaccatctgtacctcggttcaggctgccgtgggcaccaggccctgtgctgggg 10 gagtgctgaggagcctgaagggactcagggtcccgtgatgaggctgggcacatggaggaaagacagaatgtccaag acacaggegetgettggeetetgggtgtggaeeteaggagggetteetggaggaggagggatgetgggettgeeagaaag gaggcagctgctcccaggatgagttctgaacatgctacctgagcccttccctcctcctgctgctctgttccagacttggat gggggcccacggggccggtgtgtgttgagccaggactgtggcaccccacagggagccttggagccctgcgtccagg aggecactgeactgeteacttgtggeccagegegteettggaaatetgtggecctggaggaaggaacaggagggecctggg 15 accaggeteceggggaacetgageteagaggatgtgetgecageagggtgtaeggagtggagggtacagaegettgeeta tctgccacaggaggactgggccccacgtccctgactaggccggctcccccagactcagagggcagcaggagcagcagca gcagcagcagcaacaacaacaactactgtgccttgggctgctatgggggatggcacctctcagccctcccaggaaac acacagagetetgggeceateceagecetggeetgtggeetttettgtgaceateagggeetggagacecageaaggagt tgcctgggtgctggtcatgccatgccagaggcctgggctgcatgaggacctccagggcatgttgctcccttctgtcctca gcaaggctcggtcctggacattctaggtccctgactcgccagatgcatcatgtccattttgggaaaaatggactgaagttt 20 aggetcececeteaaccetetgetcagtgctgtggggagcagcetetaccetcagcatectggccacaagttetect tecattgtccettttetttatccetgacctctctgagagaagtgggtgtggtctctcagctgttetgccctataccetta aagggccagcctgggcccagtggacacaggtaaggcaccatgaccacctggtgtgacctctctgtgccttactgaggcac 25 ctttctagagattaaaaggggcttgatggctgttcccaaagtgttgatggctggagaaggggccagaggaggagtgagg ggtggggtttgtccagccctgggctttccgggctctagagatagcatggtgtaggctcaatgacagttctggggacagca agttggaggttcaggggcagcttcaggacagcaggatggaggctcagggacaattcctgggaggccagtgccctcgttcc ccatccagcagtgatggtggcctgtgaagggtcctgcttctgtcctcagcctctcatggggtgggcttgtggaggagctg 30 ggttagcttagaaccacagagatttgttgtctcacaattctgaagtccagaagttggaaataaagatgttggcagtgttc ccaaccacatgttettgggeteccatgaaacagaagttgatattaggeeaaggaagetteccagaeaagaetttattaag tcttatgccccgaaagtttgggcagaagagagacggtgcaggaggaagaattcttggctgactccccaaggggaatgcat tgtggtgtcttaaggagggtgacatacataatttatgagctacatgagtgtcattgcacatatggggtggagcgaagggt 35 atcataagaccagggtcattctcctggccttgtgcacaagcaggtgatggagtcaactcccgtcagtaagacttatggcg ggatgctgcttatcttagtttatttcagacagttggcaaggtctggccagcgagtatggcacctggagggtggtgctgca aggtttagtggtcagcgggcacgtatggaacaatacgttagtgggggtgggccgagtcccatttatactctctcagcagg gccatgctccctctgaaggcactagggaaggattagtttcaggcctcttttcagcttctgttagtttcttggcttgtgac accaaagotgtaatotttettttgtttttgtttttgtaccaggagttttgctcttgttgctcaggctggagtgcaatggcac
aatotoggctcactgcaacctcctcctcctccaggtttaagcaattcttctgcctcagcctttggagtagctgtgattacaa
ggcacctgctaccacgcctggctagtttttgtatttttagtagagacggtgtttcgctatgttggccaggctggtctcaa 40 actectgatateaagtgatecgtetgtetetgeeteccaaagtgttgggattacaggeatgagecacegtgeetggeeaa agttccagtctttacagggatttttccttgtgtgcatttctgtgtccaaatttcccctttttaaaatcacaataatagtg 45 aattaaggctggccctaacgatttaatcttaacttgatcatctgcaaagacactatttccatataaggtcacattcacag ctactggggttaggacttcaacctagagggcctgacttctggcccaacacatcatggcccatcccagcatgcccatccc cttcctgggtgccccaggcagatcacaggagggcctgactgctgggctttgggctgacattgggatcatctgcctagtta gggctgtgaccagactgagataggaggtgggacctgactcctgaggcagggcttgaactctggaccagattacagactag ctgaaacaggcaaaagcacccctccataagacacacccactggtgccaagtgagtttgccgttctcatggtaacagctgg 50 aaattactgcccctttccatggcaatgacctgaaagttaccaccccttttctagaaatttctaaataacctcctccttaa tttgtatalagttacaagtgggtataaatatgtgtgcagaactgcctctgagctgctactctggggctgactgcctatggg cgactcgcccttgaattctttcctgggtgaagc (SEQ ID NO:11934) atatatatatgcataatagtctctgtgtaacagtaagtggatgcagtaactggtgtgagggcaacttggagagtgtgcttggagggcacagagatgctcagggctgcctggactgcctccatgatggtggcctgctctgtattaggtgagtgttcaggaaa ggccagactttgacactgaggccatggaatggggggctctgaagacccaagtgatcatggggctatgt ccacagatccaaggcggataggctgtactgggcagtgatgtcagcaggctccccagcgggactgggggtgtcagggg agctctgtcccaggtggcagacactggtttcccctcctgctctcacaaccggcctgttaccaggtgttgtctgagctgt gtgaggettceetggtgacattcaggagcagggagcetgcgagtaagggtgtatgcatetgcetgactgcetggecetg tggtcaaggatgggggaaggcagetetgcetgcagetccaceccatttataaagcactgtggtgcettetgctgggacat 60 gtgctgagtggtgcctcgcaggcactgccctcgggaagttcacaggcttatgtggaagctggtgggaatgggccaagaag agaggtgtcaggagccaggtattgggcaggtcccaggtctctgagcctcagtttcttcatctgtaggagggtggtgaccc tgccctgctcagcttaccaggtacagatgtaagttttcagtgcagaggaaaagcagagaacttcccttcagatggccata 65 ccccttgtcgctgtacccaactctccggtcctactttgtagctctcaggtgtcacatgtggatcctgccctaccatccc ccttgccctglctagaaacgaggcctgclgagcttggaaccatcccactccctgctctcaagccgtclgctcctgggtta gectgtggetgaectggectgattetaeatagatgtgggtgttteteeaetgetggggeageagttgteeattetgggge ctgggtcagctctcagctgtgggccgttgtgcctgtgcttccccaggtcctggtggtgactccaaccctgccctcacatat 70 acttgccacggtgtttcatgctgtggctggtggttccaggctgcacgctccattctaggaaagggtgaggcttcctgatc atcagtettaacaggggactgtectatgggtacetgtatacgetgcegggagtggggcagagtggggttagagtagtagec tgctgcccattggggttgtgcgggttccttaagggctgtagtctgtgtgcgtgtctggtttttttcctcctccttatcagt aatcagtettgtataaccaggetggecetgetteetgectaggggetateggtgtaccatetggagttgcaaatggggtg atagggcgtcagcggccttcccacacccaagcacttcctgacacccagcccctcatctctagccaacctctggctcccct 75 agggatcctggggctcaggcctcacgctccaggcatccgggggctttgcccttctggtgttgctcttctttgcaggtgcct cctgtaatcccaacactttgggaggccaaggcaggtggatcccttgaggtcaggaggtcaagactagcctggccaacatg ccctccttgggactcagttccttgcctgtgaacggggacagtgcttctcccttacagagctgttgtgagaattaaagtag

aatgggggatgggctggcagaggatgactgtcccagagaggagtcttctctcggcagatgtggagacctagctgagtcagag gccaggatctaagtttgagggtgttccttacaccctgcagccatgagtctttggctgagtcaaatggcctttctgagctc agttccttatcagtaaagcctggacagtggtccaggacgctggacactgtgtgagtgttaggacacaggacactgtgtga gtgcaggtggggacccatggagcactctgctggggagcaattcatggggagcacccctccagagagggatgatttgcaca gggccctcagcccagtcccttgcaggctggaccttggagagtgaggccctgaggcgagacatgggcacctggctcctggc ctgcatctgcggatccatgcccagaattattcacgaaattcacttaaaatagcatatatgcttgaacccaggagtctgag gctgcagcgagctatgatcatgtcactgcactccagcctgggcgacagagcaagactctgtgtctaaagaaatga aaataaaataaataaatagcatatacaggcaacaatccaaatgttcattgcagaaattatgattattattgtttttct 10 tttagaggcagggtgtcactctgttgcccagactaatcttgacctcctgtgatcctcaagagatcctccggtctctgctt cccaaagttcttggattacaggtgtgaggcactgggcctagacattgcagggattattaaaccatggtgcatactaccat taaaggtatgaggtaggttttatatgctgacctagaaagatggtgcaacaccataggggaacaagaaggctgcaaagtgg taatcccagcacttagggaggcttaggtgggcggatcacttgaggttaggagttcaagaccagcccagtcaacaccggtg aaaccccatctctactaaaaatacaaagaaattagctgggcttggtggcaggtggctgtaatcccagctactcaggagct gaggcaggagaatcatctgaacccgggaggccgaggttgcagtgagcctagatcgcaccactgcactccagcctgggtga cagagtaagactcggtcaaaaaaaaaaaaaaaaaaaagaccgggtgcgaggtctctcgcctgtaatcccagcactttgggag gcctaggcaggaggatcacaaggtcaggagatcgagaccatcctggccaacatggtgaaaccccatctctactaaaatac acatactaggaggaggaggaggaggagatgagattgagatcaggaggatattaggaggatgaggaggggaatgggaatggttgaaaca ggaggtggaggctgcagtgagcgagatcacgccattgagtcccagctactcaggaggctgaggcaggggaatcgcttgaaaca gaaagaaaacaaacaaacaaacaaatccccaaaaagcaaaagtgtctgcatggacttgtgcctaactactcacagtggc tacttcttgggggaggtgaaaggggaccctgttaaagaatttttcttctgtattgtttttcttcaactgagtctgcatta 20 attttatatttaatacteteeeeaceeetgatgeteacaggttgetttagetggtggaaggaggaacetgeacetetggtt ttggcaaagtgtagaaggggacaagggcactgctctgcacctgcacaggttcttgcctcctggggtcagtttaatgaatc 25 tcagctctgctcgggagagcagctctgtaatgcgcttgtggtttcagatgtgggggggcctgtgtgaacctgtcgtgcaaa gctcacgtcaccaactgctgcagttatctcctgaatcaggctgagggtctttgctgtgcacccagagatagttgggtgac aaatcacctccaggttggggatgcctcagacttgtgatgggactgggcagatgcatctgggaaggtgagtctgtgctttg 30 ggcttcccaacctctcaagtcagcatgaaattcagaaggcagagagggacatgtggccctccaactcggggcccagggag ccactgtggcatttgagagcgccaccctagctttacctcctggtgtcctggccttgtgtatctcttagagatggcaaa atttgcagccctgacctcaaggattacaaactaatttccagtcctgtaggggtcatgggttctgctgtggccagtgtggc actgagtitgtcaggcagaatitctaattatggaaggaactctgcttcctcagtgattgaactgactttgtgggggtgc ctttgtggggtgagaatgggcatacttgggcctcagttgtgatggccatggggtggagctgaggtctaggcccagggctg 35 ggaaagcttctaccaaccccgaggcatttgggtgttttagggcagaagaggagccaggaggatgggtatgcccactgga tttgtttttggaaagaacatcaccctctcagtttcctggggtctggatagcctgttcttgtgatgagctggaggatgtggg ccctgottggatcctcctctcccctccctgccccattttctcttcctgtgatttatgctgttctgggctcaccctcttc 40 45 cactgctcaaccottgggccctgtcagttcagggctgtgcagaaggagagttgcctgtgctcaggctcagggttccgtc tgccctgggtatgtgcccttgtccacccaacacctctgcagtgccaagtccagccctgacttettcctgagctgtggccc agegtteecacaggeatttaceteacggatgcagcactgccctcatectettetetgaaagtgtgtgggaaatgettet 50 gcctttcagaccccatccctccctgcctcctgcccatccctacccctgtcagcaccttacatactctgtgcccaacagca ttggggattcccactgtgctgaaggaagtcctcatgtggtccagagagggagctggcccctgctcccatttccagcacca ttttctggcacaggctccatgtccccaggctccagctgcttctggggtaccaaggtctgcatttcttcctcttcccccag cagacagaagacettgctggacaggtgtccacttcaatagtaacttctgaggctgccagcctcctgaatggtccagaaga 55 accagacccttccccgccccattaaaaaagacaaaatatggccaggcatgttggctcatgcctgacatcccagcacttt gggaggccaaagcaggtgaatcacttgaggccaggagtacgagaccagcctgacaaacatggtgaaaccctgtgtctact aaaaatacaaaaattagccaggcgtggtgactcatgcttgtaaatgcttgtaatcccagctacttgggaggctgaagcag gaggatcacttgaactcgggaggcagaggttgcagtgagccgagatcacgccactgtgttccagcctgagcgacagagcg ggatgcagtaactggtgtgagggcaacttggagagtgtgcttggaggcacagagatgctcagggctgcctggactgcctc 65 caccccatttataaagcactgtggtgccttctgctggtgggcatgtgctgagtggtgcctcgcaggcactgcctcggggaag ttcacaggcttatgtggaagctggtgggaatgggccaagaagagaggtgtcaggagccaggtattgggcaggtcccaggt ctctgagcctcagtttcttcatctgtaggagggtggtgacctgccctgctcagcttaccaggtacagatgtaagttttc 70 agtgcagaggaaaagcagagaagttcccctcagatggccatacccccttgtcgctgtacccaactctccggtcctacttt gtagctctcaggtgtcacatgtggatcctgccctaccatccccttccctgtctagaaacgaggcctgctgagcttggag ccatcccactcctgctctcaagccgtctgctcctgggttagcctgtggcctggcctgattctacatagatgtggg tgtttctccactgctggggcagcagttgtccattctggggcctgggtcagctctcagctgtggccgttgtgcctgtgctt ccccaggtcctggtggtgactccaaccetgccetcacatatcccaagagcaggctgactgccttccccattcccaccttt 75 ccagtaactgctgcaagaacggacagacactgctgcagagaacttgccacggtgtttcatgctgtggctggttgctaag gctgcacgctccattctaggaaagggtgaggcttcctgatcatcagtcttaacaggggactgtcctatgggtacctgtat acgctgccgggagtggggcagagtggggttagagtagtgcctgctgcccattggggttgtgcgggttccttaagggctgt agtetgtgtgegtgtetggtttttteeteeteettateagtaateagtettgtataaceaggetggeeetgetteetgee taggggctatcggtgtaccatctggagttgcaaatggggtgataggggtcatgggctttcccaacccaagcacttcctgacacccagccactcatctctggctaccctagggatcctggggtcagggctcaggcctcacgctccagcatccgg gggctttgccttctggtgttgctcttctttgcaggtgccttggaacaggggtgcaacagagttcagaaagtgccatctgt

qqqaqaqaqatqcataqaqqctqqqtctqqtqtcacqcctqtaatcccaacactttqqqaqqccaaqqcaggtggatcc agctgggcatggcgggagatgcctgtaatcccagctactcgggaggctgaggcaggataatcacttgaacccaggaggcg cttagaatttgtctgtgtgaccctgggcaagtcatttcccctcttgggactcagttccttgcctgtgacggggacagt gcttctcccttacagagctgttgtgagaattaaagtagaaaatgtacctatggtggttgttggtagtgaccagttccccc gtcttctcggcagatgtggagacctagctgagtcagaggccaggatctaagtttgagggtgttccttacaccctgcagcc atgagtetttggetgagteaaatggeetttetgageteagtteettateagtaaageetggaeagtggteeaggaegetg 10 qacactqtqttqaqtqttaqqacacaqqacactqtqtqaqtqcaqgtqqqqacccatqqaqcactctqctqgggagcaatt catggggagcacccctccagagagggatgatttgcacagggccctcagcccagtcccttgcaggctggaccttggagagt gaggccctgaggcgagacatgggcacctggctcctggcctgcatctgcatctgcacctgtgtctgcttgggagtctctgt gggttgtccgatgtcaagcctctagggaaaggtttggcccaaactgtgctggggcatgtcctctaggggtcagcctggac gacgcctctccagatctgacttgcccgtgtaccacaggtcagagcccatcacttcccaggcctcccagtgcttccctgga cagattotgggatcatttactggtgactgccctgctagggtgtcagctgtcagatcctccccaacccccgagctcagctc caacattetcaggatcgattgccactggtetgccccagagctgggacagggctccagcccttggctcctcttcaccaggt 20 gagcatggagggccatgcccacctggacaggatgaggtgagttccccaggattgaagcagctatgccaggacagtgta gcagccccgtggtgctgacaaatgccctttccagcaaccaggctcctggcggcacacataagtgcatcttgcggggcagt gagtgcaccgtcgtgctgccacctgaggcagtgctcgtgccatctgacaatttcaccatcactttccaccactgcatgtc tgggagggagcaggtcagcctggtggacccggagtacctgccccggagcaccggtgagcagcagctataggtctggggcg 25 aqcqqqtqtqtqtqtqcacacacacatqctqqcatqcaqatqtgtatgctttatgtgtgtgtatgggagtagggtgagtgc 35 gtgcacatgggcatgcctatgtgtatgagtgtgtatgtgagtgtggtgagttgcttctgtgcacacacttttgtttatga 40 aacacaagtgtgttcaagagtgtgttatatgagcatataatgcatgtgtgtattctcgagggctgagggacccagccca ccttcaccaectgctaactgtccccacccccacagcaggcccagcacagggatcacattgtcggggtgacctggcttata cttgaagcetttgagctggaccetggetttatecatgaggccaggetgcgtgtecagatggccacactggaggatgatgt ggcactgctgtggctgctgcacttccagcggagtctgggctgggcgtcttctcccctgttcacctcagccctgcaccctt 45 tcaccctcctgtaagcccctccccgaggcagccatgcctcagttgacccccttcctctgaaggtctgaggtctgtaggga tgagtgtgtggtgggtgggccatcaagggccgccttgtctggttcctcccctcccctttccactgcctggtcctggacg 55 ggcagaggctgaagataagggcagcttggtcccgaccagacccagagtcaccgagatcaagagccggaggtcctagtctc ctgcctctggaggagcttggtttgttcatttgttcacatgttctacgaaaggacagttggggcatctggtgtgctcagga acagggtgcagggccatgtcaggccgcagatgtgaggaagagggtgtggggagaggggtgttggggctaagtggg 60 agggtgcttcgcttctccttggagcaaaggaaagtgtaaaactgtgtgacacaacctagtttatgttttgaggaatagat tgctgggacaaggggacatgggggacetgctggaggccaatgggggccagtgaggtgcccacaggggagacgatttgcatg agccagtgaaagaagtggagatagagaaaaagtggagagaattgcagggtctcatgaggggaaatagaagggacatgtggg tggatgagatatgagtggtgacccctgaggtggggaaatgggggacagccttgcagggaggttggtgaagtctatttgga cctgttgggttggagccccaggtgacatccttgtgggagggtcagtggatccttggcagcaagtctggtgctcagggaga cactgggtggggtgggagccacagaccttctgctgatggcaaagacagggttcctggaggtgctggctccctctgtgatc tgaggacccagctagtaactccccgttctgaacccgccatcgcagctcacgctgtaaaggacgcgcgcctcagtataaat cagttctatgcggccgttaggcaaggaggcccagttgggtcctgccctgagagtgggttggaatgtgatgagatgggaga gaagggtctgtggtgtgtgtgctgcccttggggctctcactgctcttgggctctctgctctgctctggtcccctggtctcccctggtctcccccggatcacatgatggcaccacagctgaggagtgggctctgcacttcccccccttccacccatgttgggctctacagccc aatttgaaccatgaaccgggcatctggctcttggcagagtctccctctttccccaaggtggtagatgtgactgtcaggag cctqggcagctgacgacaaggctgagcaggtcagattgtgactgtcccctggactgtcatcctgttgcgggcaccagctg

ttccctagagaactaggacacctgccacgggttatttagactgcgggtgaggatctggtgccataggttggtctccaggg agcactgcagtgatggagggtgttgtgtgtgtgtgatgcatgggatggaggctcctggtcccaccaagggaacagcttcctt ttggaggcgggggcctcctgtggccccacagaaggatccaggtctgctggccatagccgagtgctttgaaagtcaccagt 10 catgetgtcaggagetggetetgtcetgggcagatatcaccatetgtaceteggttcaggetgccgtgggcaccaggece 15 agacttggatggaggaggtggttcaggttggttgttgagccaggactgggtgtgtggtgggaaattgggtgtggtagcacccaaagggagccttggagcac tgogtccaggaggacaactgcactgctaattgtggccagcggttccttggaaatctgtgctggccctggaggagcacttggagcac gggccctgggaccaggctcccggggaacctgagctcagaggatgtgctgccagcagggtgtacggagtggagggtacaga cgcttgcctatctgccacaggaggactgggccccacgtccctgactaggccggctccccagactcagagggcagcagg agcagcagcagcagcagcagcaacaacaacaactactgtgccttgggctgctatgggggatggcacctctcagccct 20 cccaggaaacacacagagctctgggcccatcccagccctggcctgtggcctttcttgtgaccatcagggcctggagaccc agcaaggagttgcctgggtgctggctggtcactgccagaggcctgggctgcatgaggacctccagggcatgttgctccct tctgtcctcagcaaggctcggtcctggacattctaggtccctgactcgccagatgcatcatgtccatttttgggaaaatgg actgaagtttctggagcccttgtctgagactgaacctcctgagaaggggcccctagcagcggtcagaggtcctgtctgga 25 tggaggetggaggeteccccctcaacccctctgctcagtgcctgtggggagcagcctctaccctcagcatcctggccaca agttcttccttccattgtcccttttctttatccctgacctctctgagaagtggggtgtggtctctcagctgttctgccct cataccettaaagggccagcetgggcccagtggacacaggtaaggcaccatgaccacetggtgtgacetetetgtgcett actgaggcacctttctagagattaaaaggggcttgatggctgttcccaaagtgttgatggctggggagaaggggccagagg aggagtgaggggtggggtttgtccagccctgggctttccgggctctagagatagcatggtgtaggctcaatgacagttct 30 ggggacagcaagttggaggttcaggggcagcttcaggacagcaggatggaggctcagggacaattcctgggaggccagtg gccacaaaatggttagcttagaaccacagagatttgttgtctcacaattctgaagtccagaagttggaaataaagatgtt ggcagtgttcccaaccacatgttcttgggctcccatgaaacagaagttgatattaggccaaggaagcttcccagacaaga ctttattaagtettatgecegaaagtttgggeagaagagagegggeagaagaattettggetgacteceaag gggaatgeattgtggtgtettaaggaggtgacatacataatttatgagetacatgagtgtcattgcacatatggggtgg agegaagggtgeteagacgeatgetaacacatacgttgeatgatcagaaaatggeagataagcecetecetgggtgagga ctttagtattatgcctagatgctuscuscuscus control of the c 40 tqqtqctqcaaqqtctagtgqtcagcgggcacgtatggaacaatacgttagtgggggtgggccgagtcccatttatactc tctcagcagggccatgctcctctgaaggcactagggaaggattagtttcaggcctctcttcagcttctgttagtttctt gcaatggcacaatctcggctcactgcaacctcctcctcccaggtttaagcaattcttctgcctcagcctttggagtagct 45 gtgattacaaggcacctgctaccacgcctggctagtttttgtatttttagtagagacggtgtttcgctatgttggccagg ctggtctcaaactcctgatatcaagtgatccgtctgtctctgcctcccaaagtgtttgggattacaggcatgagccaccgt gcctggccaaagttccagtctttacagggatttttccttgtgtgcatttctgtgtgccaaatttcccctttttaaaatcac aataatagtgaattaaggctggccctaacgatttaatcttaacttgatcatctgcaaagacactatttccatataaggtc acattcacagctactggggttaggacttcaacctagagggcctgacttctggcccaacacatcatggcccatcccagcat gcccatccccttcctgggtgccaggactaaccaggagggcctgactgctggggctttaggcctatctgggctgacattgggatcatc
tgcctagttagggctgtgacagactgagatcaccaggagggcctgactgctggggctttgaactctggaccagat
tacagactagctgaaacaggcaaaagcacccctccataagacacccactggtgccaagtgagtttgccgttctcatgg
taacagctggaaattactgcccctttccatggcaatgacctgaaagttaccaccccttttctagaaatttctaaataacc 50 cgtctctggatggccagtgactcgcagccccttccccgataggaagggcctgcgcgtccggggacccttcgcttcccct tetgetgegegacetecetggececteggagatetecatggegacgegegegececacaacaggaaageettaggeg 60 qcqcqqcttqqtqctcqqaqacttaaqaqtacccaqccctcqacqtgqtggatqtcqaqtcttqgggtcacacqcacaq gcggtggccaagcaaacacccgctcatatttagtgcatgagcctgggttcgagttgccggagcctcgcgcagtagggcagg gggctcggcgcgtagggatcacgcagcttccttcctttttttctgggagctgtaaagacgcctccgccaacgccgaaagggg 65 gtctcagtttaccgctttgtgaaatggacacaataacagtctccactctccggggaagttggcagtatttaaaagtactt 70 aataaacgccttagcgcggtgtagaccgtgattcaagcttagcctggccgggaaacgggaggcgtggaggccgggagcag ccccggggtcatcgccctgccaccgccgattgctttagcttggaaattccggagctgaagcggccagcgagggag 75 cgggaaacgttatagcggccacctggcagggtatcttggcccagcgcagcacctggccccaggactcgatcatgatggtt tgggaacttggctctgtgccaacccaacaaggcttaagggacccccaccccctcaagatgtatattctgttcctcatcc tctctgccctggggaagtccagggctgcttctacttggggg (SEQ ID NO:11936)

gegeeceagtegaegetgageteetetgetaeteagagttgeaaceteageetegetatggeteecageageeceeggee egegetgeeegeaeteetggteetgeteggggetetgtteecaggaeetggeaatgeecagaeatetgtgteeeeeteaa aagtcatcctgccccggggaggctccgtgctggtgacatgcagcacctcctgtgaccagcccaagttgttgggcatagag acccegttgcctaaaaaggagttgctcctgcctgggaacaaccggaaggtgtatgaactgagcaatgtgcaagaagatag ccaaccaatgtgctattcaaactgccctgatgggcagtcaacagctaaaaccttcctcaccgtgtactggactccagaac gggtggaactggcacccctcccctcttggcagccagtgggcaagaaccttaccctacgctgccaggtggaggtggggca ccccgggccaacctcaccgtggtgctgctccgtggggagaaggagctgaaacgggagccagctgtgggggagcccgctga ggtcacgaccacggtgctggtgaggagagatcaccatggagccaatttctcgtgcgcactgaactggacctgcggcccc aagggctggagctgtttgagaacacctcggccccctaccagctccagacctttgtcctgccagcgactcccccacaactt 10 gtcagccccgggtcctagaggtggacacgcaggggaccgtggtctgttccctggacgggctgttcccagtctcggaggc ccaggtccacctggcactgggggaccagaggttgaaccccacagtcacctatggcaacgactccttctcggccaaggcct cagtcagtgtgaccgcagaggacgagggcacccagcggctgacgtgtgcagtaatactggggaaccagagccaggagaca ctgcagacagtgaccatctacagctttccggcgcccaacgtgattctgacgaagccagaggtctcagaagggaccgaggt gacagtgaagtgtgaggcccaccctagagccaaggtgacgctgaatggggttccagcccagccactgggcccgagggccc 15 ageteetgetgaaggecaccccagaggacaacgggcgcagetteteetgetetgeaccctggaggtggccggccagett atacacaagaaccagacccgggagettcgtgtcctgtatggcccccgactggacgagagggattgtccggggaaactggac gtggccagaaaattcccagcagactccaatgtgccaggcttgggggaacccattgcccgagctcaagtgtctaaaggatg 20 25 ttcatttgttattttaccagctatttattgagtgtcttttatgtaggctaaatgaacataggtctcttggcctcacggagc
tcccagtccatgtcacattcaaggtcaccaggtacagttgtacaggttgtacactgcaggagagtgcctggcaaaaagat 30 caaatggggctgggacttctcattggccaacctgcctttccccagaaggagtgatttttctatcggcacaaaagcactat atggactggtaatggttcacaggttcagagattacccagtgaggccttattcctcccttcccccaaaactgacaccttt gttagccacctccccacccacatacatttctgccagtgttcacaatgacactcagcggtcatgtctggacatgagtgccc agggaatatgcccaagctatgccttgtcctcttgtcctgtttgcattttcactgggagcttgcactattgcagctccagtt 35 catccgcgtgtgtgtgtgtgtgtatgtgtagacaagctctcgctctgtcacccaggctggagtgcagtggtagcaatcatg gttcactgcagtcttgaccttttgggctcaagtgatcctcccacctcagcctcctgagtagctgggaccataggctcaca tagttaataaagctttctcaactgcc (SEQ ID NO:11937) gctataaggateacgegeceeagtegacgetgageteetetgetaeteagagttgeaaceteageetegetatggeteee agcagececeggecegegetgecegeactecetggteetgeteggggetetgtteeeaggacetggeaatgeeeagacate ggacctgcggccccaagggctggagctgtttgagaacacctcggccccctaccagctccagacctttgtcctgccagcga ctcccccacaacttgtcagcccccgggtcctagaggtggacacgcaggggaccgtggtctgttccctggacgggctgttc ccagtctcggaggcccaggtccacctggcactggggaccagaggttgaaccccacagtcacctatggcaacgactcctt 50 ctcggccaaggcctcagtcagtgtgaccgcagaggacgagggcacccagcggctgacgtgtgcagtaatactggggaacc agagecaggagacaetgcagacagtgaecatetacagettteeggegeecaaegtgattetgaegaagecagaggtetea gggcccgagggcccagctcctgctgaaggccaccccagaggacaacgggcgcagcttctcctgctctgcaaccctggagg tggccggccagcttatacacaagaaccagacccgggagcttcgtgtcctgtatggcccccgactggacgagagggattgt 55 ccgggaaactggacgtggccagaaaattcccagcagactccaatgtgccaggcttgggggaacccattgcccgagctcaa głcgggccaggagcactcaaggggaggtcacccgcaaggtgaccgtgaatgtgctctccccccggtatgagattgtcatc ggacagggcctcttcctcggccttcccatattggtgcagtggtgccacactgaacaaggtggaagacatatgccatgca gctacaacctaccggccctgggacgccggaggacaagggcattgtcccagtcagatacaacagcatttggggccatggtac 65 gcctggcaaaaagatcaaatggggctgggacttctcattggccaacctgcctttccccagaaggagtgatttttctatcg gcacaaaagcactatatggactggtaatggttcacaggttcagagattacccagtgaggccttattcctcccttccccc 70 tggacatgagtgcccagggaatatgcccaagctatgccttgtcctcttgtcctgtttgcatttcactgggagcttgcact cagetttaggaageeteateegegtgtgtgtgtgtgtgtatgtgtagaeaagetetegetetgteaeeeaggetggagt gcagtggtgcaatcatggttcactgcagtcttgaccttttgggctcaagtgatcctcccacctcagcctcctgagtagct 75 ccagacttcctttgtgttagttaataaagctttctcaactgcc (SEQ ID NO:11938) ctcagcctcgctatggctcccagcagccccgggccgcgctgcccgcactcctggtcctgctcggggctctgttcccagg acctggcaatgcccagacatctgtgtccccctcaaaagtcatcctgccccggggaggctccgtgctggtgacatgcagca taaaaccttcctcaccgtgtactggactccagaacgggtggaactggcacccctcccctcttggcagccagtgggcaaga acettaccetacgetgccaggtggagggtggggcaccccgggccaacetcaccgtggtgctgctccgtggggagaaggag

ctgaaacgggagccagctgtgggggagcccgctgaggtcacgaccacggtgctggtgaggaggatcaccatggagccaa tttctcgtgccgcactgaactggacctgcggccccaagggctggagctgttttgagaacacctcggccccctaccagctcc agacetttgteetgeeagegaeteeeceacaaettgteageeeegggteetagaggtggaeaegcagggggaeegtggte tgttccctggacgggctgttcccagtctcggaggcccaggtccacctggcactgggggaccagaggttgaaccccacagt gtgcagtaatactggggaaccagagccaggagacactgcagacagtgaccatctacagctttccggcgcccaacgtgatt ctgacgaagccagaggtctcagaagggaccgaggtgacagtgaagtgtgaggcccaccctagagccaaggtgacgctgaa tggggttccagccagccactgggcccgagggcccagctcctgctgaaggccaccccagaggacaacgggcgcagcttct cctgctctgcaaccctggaggtggccggccagcttatacacaagaaccagacccgggagcttcgtgtcctgtatggcccc 10 cgactggacgagaggattgtccgggaaactggacgtggccagaaaattccccagcagactccaatgtgccaggcttgggg gaacccattgcccgagctcaagtgtctaaaggatggcactttcccactgcccatcggggaatcagtgactgtcactcgag atettgagggeacetacetetgtegggeeaggageacteaaggggaggteacecgegaggtgaeegtgaatgtgetetee ccccggtatgagattgtcatcatcactgtggtagcagccgcagtcataatgggcactgcaggcctcagcacgtacctcta taaccgccagcggaagatcaagaaatacagactacaacaggcccaaaaagggaccccatgaaaccgaacacacaagcca 15 ggaagg (SEQ ID NO:11939) aattcagaactcctcagccccccaagaaaaaaatatccccgtggaaattcctttttaatgaccgaggcgggggaaatatg 20 cytctctggatggccagtgactcgcagcccccttccccgataggaagggcctgcgcgtccgggacccttcgcttcccct gegeggettggtgeteggagaettaagagtacecageeeetegaegtggtggatgtegagtettggggteacaegeacag gcgglggccaagcaaacacccgctcatatttagtgcatgagcctgggttcgagttgccggagcctcgcgcgtagggcagg 25 Cgagegteeeeteeeteeetegteaagateeaagetagetgeetaagttteeeegeggageetgggaegeeageggag gggctcggcgcgtagggatcacgcagcttccttcctttttctgggagctgtaaagacgcctccgccaacgccgaaagggg 30 gtctcagtttaccgctttgtgaaatggacacaataacagtctccactctccggggaagttggcagtatttaaaagtactt aataaacgccttagcgcggtgtagaccgtgattcaagcttagcctggccgggaaacgggaggcgtggaggccgggagcag 35 cgcctccctgaacctatcccgggacagggcctcttcctcggccttcccatattggtggcagtggtgccacactgaacaga 40 cagcatttggggccatggtacctgcacacctaaaacactaggccacgcatctgatctgtagtcacatgactaagccaaga ggaagg (SEQ ID NO:11940) gaatteetgeeaetetteetgeaaeggeeeaggageteagageteeaeatetgaeettetagteatgaeeaggaeeagg cagcactectectettcacagcettagcaacttetetaggttteaactteggacacagaggagetgacageetteegtgtg 45 gacagogotgggtttggagacagogtggtocagtatgccaactootgggtggtggttggagoccoccaaaagataacago tgccaaccaaacgggtggcctctaccagtgtggctacagcactggtgcctgtgagcccatcgggcctgcaggtgcccccgg aggeegtgaacatgteeetgggeetgteeetggegtetaceaceageeetteeeagetgetggeetgeggeeeeacegtg ggtgtccaggcaggagtgcccaagacaggagcaggacattgtgttcctgatcgatggctcaggcagcatctcctcccgca 50 actttgccacgatgatgaacttcgtgagagctgtgataagccagttccagagacccagcacccagttttccctgatgcagtctccaacaacttccaaacaccttcactttcgaggaattcaggcgcacgtcaaaccccctcagcctgttggcttctgt tcaccagetgcaagggtttacatacacggccaccgccatccaaaatgtcgtgcaccgattgttccatgcctcatatgggg 55 agaattaaatgacattgcatcgaagccctcccaggaacacatatttaaagtggaggactttgatgctctgaaagatattc aaaaccaactgaaggagaagatctttgccattgagggtacggagaccacaagcagtagctccttcgaattggagatggcacaggagggcttcagcgctgtgttcacacctgatggccccgttctgggggctgtggggagcttcacctggtctggaggtgccttcctgtacccccaaatatgagccctaccttcatcaacatgtctcaggagaatgtggacatgagggactcttacctgg gttactccaccgagctggccctctggaaaggggtgcagagcctggtcctggggccccccgctaccagcacaccgggaag 60 gctgtcatcttcacccaggtgtccaggcaatggaggatgaaggccgaagtcacggggactcagatcggctcctacttcgg ggeeteeetetgeteegtggaegtagaeeegaeggeageacegaeetggteeteategggeeeeeeattaetaegagg agaccegagggggccaggtgtctgtgtgtcccttgcccagggggtggagaaggtggtggtgtgatgctgttctctacggg gagcagggccacccctggggtcgctttggggcggctctgacagtgctgggggatgtgaatggggacaagctgacagacgt ggtcatcggggccccaggagagagagaaccggggtgctgtctacctgtttcacggagtcttgggacccagcatcagcc 65 cctcccacagccageggatcgegggctcccagctctcctccaggctgeagtattttgggcaggcactgagcgggggtcaa gacctcacccaggatggactggtggacctggctgtgggggcccggggccaggtgctcctgctcaggaccagacctgtgct ctgggtgggggtgagcatgcagttcatacctgccgagatccccaggtctgcgtttgagtgtcgggagcaggtggtctctg agcagaccetggtacagtccaacatetgcetttacattgacaaacgttetaagaacctgettgggagccgtgacctccaa agetetgtgacettggacetggeeetcgaceetggeegeetgagteecegtgeeacetteeaggaaacaaagaaceggag tetgagcegagtcegagtcetegggetgaaggcacactgtgaaaacttcaacetgctgetgetceggagetgegtggaggactetgtgacececattacettgegtctgaacttcaegetggtgggcaagecectcettgeetteagaaacetgeggectatg ctggccgcactggctcagagatacttcacggcctccctaccctttgagaagaactgtggagccgaccatatctgccagga 75 aacccatcccttcggtgctcctcagagaaaatcgcaccccagcatctgacttcctggcgcacattcagaagaatcccgt gctggactgctccattgctggctgcctgcggttccgctgtgacgtcccctccttcagcgtccaggaggagctggatttca

acgttcgacacatccgtgtactcccagcttccaggacaggaggcatttatgagagctcagacgacaacggtgctggagaa gtacaaggtccacaaccccaccccctcatcgtaggcagctccattgggggtctgttgctgctgcagcactcatcacagcgg tactgtacaaagttggcttcttcaagcgtcagtacaaggaaatgatggaggaggcaaatggacaaattgccccagaaaac gggacacagacccccagcccagtgagaaatgatccctctttgccttggacttcttctcccgcgattttccccactt acttaccctcacctgtcaggctgacggggaggaaccactgcaccaccgagagagggctggggatgggcctgcttcctgtctt tgggagaaaacgtcttgcttgggaaggggcctttgtcttgtcaaggttccaactggaaacccttaggacagggtccctgc tcgctctgtcacccaggctggagtgcaatggcgtgatctcggctcgctgcaacctccgcctcccgggttcaagtaattctgctgtctcagcctcctgcgtagctgggactacaggcacctcgcccggcccgatcttcttctaaaatacagttctg gaattcctgccactcttcctgcaacggcccaggagctcagagctccacatctgaccttctagtcatgaccaggaccaggg 20 Cagcactcctcctgttcacagccttagcaacttctctaggtttcaacttggacacagaggagctgacagccttccgtgtg tgccaaccaaacgggtggcctctaccagtgtggctacagcactggtgcctgtgagcccatcggcctgcaggtgcccccgg aggoogtgaacatgtccctgggcctgtccctggcgtctaccaccagcccttcccagctgctggcctgcggcccaccgtg 25 ggtgtccaggcaggagtgcccaagacaggagcaggacattgtgttcctgatcgatggctcaggcagcatctcctcccgca actttgccacgatgatgaacttcgtgagagctgtgataagccagttccagagacccagcacccagttttccctgatgcag ttctccaacaaattccaaacacacttcactttcgaggaattcaggcgcacgtcaaaccccctcagcctgttggcttctgt tcaccagctgcaagggtttacatacacggccaccgccatccaaaatgtcgtgcaccgattgttccatgcctcatatgggg atccccatggctgatgcagcaggcatcatccgctatgcaattggggttggattagcttttcaaaacagaaattcttggaa agaattaaatgacattgcatcgaagccctcccaggaacacatatttaaagtggaggactttgatgctctgaaagatattc agaattaaatgacattgategategaageeteecaggaacacatatttaaagegaaggatettgatgeteetgaaagatatte
aaaacaaactgaaggaagatetttgccattgagggtacggaagaccacaagcagtageteettgatggagatgtc
caggagggettecagegetgttecacacetgatggeccegttectgggggettgtggggagetteacetggaggtg
ctteetgtacececcaaatatgageeetacetteatcaacatgteteaggagatgtggagatettacetgggggetettacetgg
gttactecacegagetggecetetggaaagggtgeagageetggteetgggggeceeeegetaceagcacacegggaag
getgteatetteacecaggtgtecaggcaatggaggatgaaggeegaagteacggggaetcagateggeteetaettegg
ggceteeetetggteggaegtagacacegaeggeageacegaeetggteeteateggggeceeecattactacgage agacccgaggggccaggtgtctgtgtgtcccttgccagggggtggagaaggtggtgtgtgatgcttctctacaggg gagcagggccacccctggggtcgctttggggcggctctgacagtgctggggatgtgaatggggacaagctgacagacgt 40 ggtcatcggggccccaggagaggaggagcaccggggtgctgtctacctgtttcacggagtcttgggacccagcatcagcc gacctcacccaggatggactggtggacctggtgtggggcccggggccaggtgctcctgctcaggaccagacctgtgct ctgggtgggggtgagcatgcagttcatacctgccgagatccccaggtctgcgtttgagtgtcgggagcaggtggtctctg agcagaccetggtacagtccaacatctgcctttacattgacaaacgttctaagaacctgcttgggagccgtgacctccaa agctctgtgaccttggacctggccctcgaccctggccgcctgagtccccgtgccaccttccaggaaacaaagaaccggag tctgagccgagtccgagtcctcgggctgaaggcacactgtgaaaacttcaacctgctgctcccgagctgcgtggaggact ctgtgacccccattaccttgcgtctgaacttcacgctggtgggcaagcccctccttgccttcagaaacctgcggcctatg ctggccgcactggctcagagatacttcacggcctccctaccctttgagaagaactgtggagccgaccatatctgccagga caatctoggcatctccttcagcttcccaggcttgaagtccctgctggtggggagtaacctggagctgaacgcagaagtgatggtggggagtgtagggggaggactcctacggaaccaccatcaccttctcccaccccgcaggactgtcctaccgctacgtg gcagagggccagaaacaagggcagctgcgttccctgcacctgaacatgtgacagcgccccagttgggagccagggccactg gagcaccagctgcagaatcaaccacctcatcttccgtggcggcgcccagatcaccttcttggctacctttgacgtctccc ccaaggctgtcctgggagaccggctgcttctgacagccaatgtgagcagtgagaacaacactcccaggaccagcaagaccaccacttccagctggagctcccggtgaagtatgctgtctacactgtggttagcagccacgaacaattcaccaaatacctcaa 55 aacccatcccttcggtgctcctcagagaaaatcgcaccccagcatctgacttcctggcgcacattcagaagaatcccgt 60 acgttcgacacatccgtgtactcccagcttccaggacaggaggcatttatgagagctcagacgacaacggtgctggagaa gtacaaggtccacaaccccaccccctcatcgtaggcagctccattgggggtctgttgctgctggcactcatcacagcgg tactgtacaaagttggcttcttcaagcgtcagtacaaggaaatgatggaggaggcaaatggacaaattgccccagaaaac gggacacagaccccagcccagtgagaaatgatccctctttgccttggacttcttctccccgcgattttccccactt 65 acttaccctcacctgtcaggctgacggggaggaaccactgcaccaccgagagaggctgggatgggcctgcttcctgtctt tgggagaaaacgtcttgcttgggaaggggcctttgtcttgtcaaggttccaactggaaacccttaggacagggtccctgc tgtgttccccaaaaggacttgacttgcaatttctacctagaaatacatggacaatacccccaggcctcagtctcccttct gttaatacacattaaaacatcgcacaaaaacgatgcatctaccgctccttgggaaataatctgaaaggtctaaaaataaa aaagccttctgtgg (SEQ ID NO:11942) ctcgccctggtggggctgctctccctcgggtgcgtcctctctcaggagtgcacgaagttcaaggtcagcagctgccgggaatgcatcatcgatgcagctgccagaagctgaacttcacagggccgggggatcctgactccattcgct gcgacacceggecacagetgeteatgaggggetgtgeggetgacgacateatggaccceacaageetegetgaaacceag gaagaccacaatgggggccagaagcagctgtccccacaaaaagtgacgctttacctgcgaccaggccaggcagcagcgtt

acctcaggaatgtcaagaagctaggtggcgacctgctccgggccctcaacgagatcaccgagtccggccgcattgqcttc gggtccttcgtggacaagaccgtgctgccgttcgtgaacacgcacctgataagctgcgaaacccatgccccaacaagga gaaagagtgcccgccccgtttgccttcaggcacgtgctgaagctgaccaacactccaaccagtttcagaccgaggtcg ggaagcagctgatttccggaaacctggatgcacccgagggtgggctggacgccatgatgcaggtcgccgcctgcccggag gaaaleggetggegeaaegteaegeggetgetggtgtttgeeaetgatgaeggetteeatttegegggegaeggaaaget gggcgccatcctgacccccaacgacggccgctgtcacctggaggacaacttgtacaagaggagcaacgaattcgactacc categgtgggccagetggegeacaagetggetgaaaacaacatecageecatettegeggtgaecagtaggatggtgaag acctacgagaaactcaccgagatcatccccaagtcagccgtgggggagctgtctgaggactccagcaatgtggtccatct cattaagaatgcttacaataaactctcctccagggtcttcctggatcacaacgccctccccgacaccctgaaagtcacct acgactecttetgeageaatggagtgaegeaeaggaaceageeeaggtgaetgtgatggegtgeagateaatgteeeg atcaccttccaggtgaaggtcacggccacagagtgcatccaggagcagtcgtttgtcatccgggcgctgggcttcacgga catagtgaccgtgcaggtccttccccagtgtgagtgccggtgccgggaccagagcagagaccgcagcagcctctgccatggca agggettettggagtgeggeatetgeaggtgtgacaetggetacattgggaaaaaaetgtgagtgeeagacacagggeegg agcagccaggagctggaaggaagctgccggaaggacaacactccatcatctgctcagggctgggggactgtgtgtctgcgg gcagtgcctgtgccacaccagcgacgtccccggcaagctgatatacgggcagtactgcgagtgtgacaccatcaactgtg agegetacaacggecaggtetgeggeggeceggggagggggetetgettetgegggaagtgeegetgecaceegggettt gagggctcagcgtgccagtgcgagaggaccactgagggctgcctgaacccgcggcgtgtttgagtgtagtggtcgtggccg gtgccgctgcaacgtatgcgagtgccattcaggctaccagctgcctctgtgccaggagtgccccggctgccctcaccct gtggcaagtacatctcctgcgccgagtgcctgaagttcgaaaagggcccctttgggaagaactgcagcgcggcgtgtccg gcctgcagctgtcgaccacccgggtgtctgaagtccgaagggcctctctgggaagtactgcagcggggtgtgtcg gcctgcagctgtcgaacaacccgtgaagggcaggacctgcaaggagggactcaagagggctgctggggtggctacac gctggagcagcaggagggaccggtgaccgctacctcatctatgtggatgagagccgagagtgtgtggcaggcccaacatcg ccgcatcgtcgggggcaccgtggcaggcatcgtgctgatcggcattctcctgttgtctgtgtatctggaaggctctgatccac ctgagcgacctccgggagtaccaggcgtttgagaaggagaagctcaagtcccagtggaacaatgataatccccttttcaa gagcgccaccacgacggtcatgaaccccaagtttgctgagagttaggagca (SEQ ID NO:11943) gaattcctgccactcttcctgcaacggcccaggagctcaagactcacatctgaccttctagtcatgaccaggaccaggg gacagcgctgggtttggagacagcgtggtccagtatgccaactcctgggtgtggtggttggagcccccaaaaagataacagc tgccaaccaaacgggtggcctctaccagtgtggctacagcactgtgtgctgtgagcccatcggcctgcaggtgccccgg 30 aggccgtgaacatgtccctgggcctgtccctggcgtctaccaccagcccttcccagctgctggcctgcggcccaccgtg ggtgtccaggcaggagtgcccaagacaggagcaggacattgtgttcctgatcgatggctcaggcagcatctccccgca actttgccacgatgatgaacttcgtgagagctgtgataagccagttccagagacccagcacccagttttccctgatgcag ttctccaacaattccaaacacattcactttcgaggaattcaggcgcacgtcaaaccccctcagcctgttggcttctgt tcaccagetg caagggtttacatacaeggccaccgccatecaaaatgtegtgcaccgattgttccatgcctcatatggggatccccatggctgatgcagcaggcatcatccgctatgcaattggggttggattagcttttcaaaacagaaattcttggaa agaattaaatgacattgcatcgaagccctcccaggaacacatatttaaagtggaggactttgatgctctgaaagatattc aaaaccaactgaaggagaagatctttgccattgagggtacggagaccacaagcagtagctccttcgaattggagatggca caggagggettcagcgctgtgttcacacctgatggcccgttctggggggctgtgggggagcttcacctggtctggaggtgc cttcctgtaccccccaaatatgagccctaccttcatcaacatgtctcaggagaatgtggacatgagggactcttacctgg gttactccaccgagctggccctctggaaaggggtgcagagcctggtcctgggggccccccgctaccagcacaccgggaaa gacctcacccaggatggactggtggacctggctgtgggggcccggggccaggtgctcctgctcaggaccagacctgtgct 50 ctgggtgggggtgagcatgcagttcatacctgccgagatccccaggtctgcgtttgagtgtcgggagcaggtggtctctg agcagaccctggtacagtccaacatctgcctttacattgacaaacgttctaagaacctgcttgggagccgtgacctccaa agctctgtgaccttggaccttggccctcgaccctggccgcctgagtccccgtgccaccttccaggaaacaaagaaccggag tctgagccgagtccgagtcctcgggctgaaggcacactgtgaaaacttcaacctgctgctcccgagctgcgtggaggact ctgtgacccccattaccttgcgtctgaacttcacgctggtgggcaagccctccttgccttcagaaacctgcggcctatg 55 ctggccgcactggctcagagatacttcacggcctccctaccctttgagaagaactgtggagccgaccatatctgccagga caatcteggcatctccttcagcttcccaggcttgaagtccctgctggtggggagtaacctggagctgaacgcagaagtga tggtgtggaatgacggggaagactcctacggaaccaccatcaccttctcccaccccgcaggactgtcctaccgctacgtg gcagagggccagaaacaagggcagctgcgttccctgcacctgacatgtgacagcgccccagttgggagccagggcacctg gagcaccagctgcagaatcaaccacctcatcttccgtggcggcgcccagatcaccttcttggctacctttgacgtctccc gggacacagacccccagccccagtgagaaatgatccctctttgccttggacttcttctcccgcgattttccccactt acttaccotcacctgtcaggctgacggggaggaaccactgcaccaccgagagagggctgggatgggcctgcttcctgtctt tgggagaaaacgtcttgcttgggaaggggcctttgtcttgtcaaggttccaactggaaacccttaggacagggtccctgc tgtgttccccaaaaggacttgacttgcaatttctacctagaaatacatggacaatacccccaggcctcagtctcccttct tcgctctgtcacccaggctggagtgcaatggcgtgatctcggctcgctgcaacctccgcctcccgggttcaagtaattct gctgtctcagcctcctgcgtagctgggactacaggcacacgccacctcgcccggcccgatctttctaaaatacagttctg aatatgctgctcatccccacctgtcttcaacagctccccattaccctcaggacaatgtctgaactctccagcttcgcgtg agaagtccccttccatcccagagggtgggcttcagggcgcacagcatgagagcctctgtgcccccatcaccctcgtttcc agtgaattagtgtcatgtcagcatcagctcagggcttcatcgtggggctctcagttccgattccccaggctgaattggga gtgagatgcctgcatgctgggttctgcacagctggcctcccgcggttgggtcaacattgctggcctggaagggaggagcg ccctctagggagggacatggccccggtgcggctgcagctcaccagcccaggggcagaagaagacccaaccacttcctatt
ttttgaggctatgaatatagtacctgaaaaaatgccaagcactagattattttttaaaaagcgtactttaaatgtttgt

gttaatacacattaaaacatcgcacaaaaacgatgcatctaccgctccttgggaaataatctgaaaggtctaaaaataaa tectgcaacggcccaggagctcagagctccacatctgaccttctagtcatgaccaggaccagggcagcactcctctqtt cacagecttagcaacttctctaggtttcaacttggacacagaggagctgacagccttccgtgtggacagcgctgggtttg cctgggcctgtccctggcgtctaccaccagcccttcccagctgctgccgcggcccaccctgggcctgcaccacgagtgcaggaggagaacatgtacctcaccggactctgcttcctcctgggcccaccagctcacccagaggctcccggtgtaccacgagtgcaggag tgcccaagacaggagcaggacattgtttcctgatcgatggctcaggcatctcctcccgcaactttgccacgatgat gaacttcgtgagagctgtgataagccagttccagagacccagcaccagttttccctgatgatgcagttctccaacaacttc 10 aaacacacttcactttcgaggaattcaggcgcacgtcaaaccccctcagcctgttggcttctgttcaccagctgcaaggg tttacatacacggccaccgccatccaaaatgtcgtgcaccgattgttccatgcctcatatggggcccgtagggatgccac caaaatteteattgteatcactgatgggaagaaagaaggcgacageetggattataaggatgteatecccatggetgatg cagcaggcatcatcgctatgcaattggggttggattagcttttcaaaacagaaattcttggaaagaattaaatgacatt
gcatcgaagcctcccaggaacacatatttaagtggaggactttgatgctctgaaagatattcaaaaccaactgaagga gaagatetttgecattgagggtacggagaccacaagcagtageteettegaattggagatggcacaggagggettcagcg ctgtqttcacacctqatqqcccgttctgqgqqctqtgqgqagcttcacctggtctggaggtgccttcctgtaccccca aatatgagcctaccttcatcaacatgtctcaggagaatgtggacatgagggactcttacctgggttactccaccgagct ggccctctggaaagggtgcagagcctggtcctgggggccccccgctaccagcacaccgggaaggctgtcatcttcaccc 20 gtggacgtagacaccgacggcagcaccgacctggtcctcatcggggccccccattactacgagcagacccgagggggcca ggtgtctgtgtgtcccttgcccagggggtggagaaggtggtggtgtgtgatgctgttctctacggggagcagggccacccct ggggtcgctttggggcggctctgacagtgctgggggatgtgaatggggacaagctgacagacgtggtcatcggggcccca 25 atgcagttcatacctgccgagatccccaggtctgcgtttgagtgtcgggagcaggtggtctctgagcagaccctggtaca gtccaacatctgcctttacattgacaaacgttctaagaacctgcttgggagccgtgacctccaaagctctgtgaccttgg acctggccctcgaccctggccgcctgagtccccgtgccaccttccaggaaacaaagaaccggagtctgagccgagtccga gtoctogggetgaaggcacactgtgaaaacttcaacctgctgctcccgagctgcgtggaggactctgtgaccccattac cttgcgtctgaacttcacgctggtgggcaagccctccttgccttcagaaacctgcggcctatgctggccgcactggctc agagatacttcacggcctccctaccctttgagaagaactgtggagccgaccatatctgccaggacaatctcggcatctcc ttcagcttcccaggcttgaagtccctgctggtggggagtaacctggagctgaacgcagaagtgatggtgtggaatgacgg ggaagactcctacggaaccaccatcaccttctcccaccccgcaggactgtcctaccgctacgtggcagagggccagaaac 35 aagggcagctgcgttccctgcacctgacatgtgacagcgccccagttgggagccagggcacctggagcaccagctgcaga atcaaccacctcatcttccgtggcgcccagatcaccttcttggctacctttgacgtctcccccaaggctgtcctggg agaccggctgcttctgacagccaatgtgagcagtgagaacaacactcccaggaccagcaagaccaccttccagctggagc tcccggtgaagtatgctgtctacactgtggttagcagccacgaacaattcaccaaatacctcaacttctcagagtctgag 40 getecteagagaaaategeaceeeageatetgaetteetggegeacatteagaagaateeegtgetggaetgeteeatt getggetgeetgeggtteegetgtgaegteeeeteetteagegteeaggaggagetggattteaeeetgaagggeaaeet tgtactcccagcttccaggacaggaggcatttatgagagctcagacgacaacggtgctggagaagtacaaggtccacaac cccaccccctcatcgtaggcagctccattgggggtctgttgctgctggcactcatcacagcggtactgtacaaagttgg cttcttcaagcgtcagtacaaggaaatgatggaggcaaatggacacaattgccccagaaaacgggacacagaccccca caggctgacggggaggaaccactgcaccaccgagagaggctgggatgggcctgcttcctgtctttgggagaaaacgtctt gcttgggaaggggcctttgtcttgtcaaggttccaactggaaacccttaggacagggtccctgctgtgttccccaaaagg 50 acttgacttgcaatttctacctagaaatacatggacaatacccccaggcctcagtctcccttctcccatgaggcacgaat gctggagtgcaatggcgtgatctcggctcgctgcaacctccgccttcccgggttcaagtaattctgctgtctcagcctcct gcgtagctgggactacaggcacacgccacctcgcccggcccgatctttctaaaatacagttctgaatatgctgctcatcc ccacctgtcttcaacagctccccattaccctcaggacaatgtctgaactctccagcttcgcgtgagaagtccccttccat 55 cccagagggtgggcttcagggcgcacagcatgagagcctctgtgcccccatcaccctcgtttccagtgaattagtgtcat gtcagcatcagctcagggcttcatcgtggggctctcagttccgattccccaggctgaattgggagtgagatgcctgcatg atggcccggtgcggctgcagctcaccagcccaggggcagaagagacccaaccacttcctattttttgaggctatgaat atagtacctgaaaaaatgccaagcactagattatttttttaaaaagcgtactttaaatgtttgtgttaatacacattaaa 60 acatcgcacaaaaacgatgcatctaccgctccttgggaaataatctgaaaggtctaaaaataaaaaagccttctgtggct cgccctggtggggctgctctccctcgggtgcgtcctctctcaggagtgcacgaagttcaaggtcagcagctgccgggaat gcatcgagtcggggcccggctgcacctggtgccagaagctgaacttcacagggccgggggatcctgactccattcgctgc gacacccggccacagctgctcatgaggggctgtgcggctgacgacatcatggaccccacaagcctcgctgaaacccagga agaccacaatgggggccagaagcagctgtccccacaaaaagtgacgctttacctgcgaccaggccaggcagcagcgttca 65 acgtgaccttccggcgggccaagggctaccccatcgacctgtactatctgatggacctctcctactccatgcttgatgac ctcaggaatgtcaagaagctaggtggcgacctgctccgggccctcaacgagatcaccgagtccggccgcattggcttcgg gtccttcgtggacaagaccgtgctgccgttcgtgaacacgcaccctgataagctgcgaaacccatgccccaacaaggaga aagagtgcccgccccgtttgccttcaggcacgtgctgaagctgaccaacaactccaaccagtttcagaccgaggtcggg aagcagctgatttccggaaacctggatgcacccgagggtgggctggacgccatgatgcaggtcgccgcctgcccggagga aatcggctggcgcaacgtcacgcggctgctggtgtttgccactgatgacggcttccatttcgcgggcgacggaaagctgg gcgccatcctgacccccaacgacggccgctgtcacctggaggacaacttgtacaagaggagcaacgaattcgactaccca tcggtgggccagctggcgcacaagctggctgaaaacaacatccagcccatcttcgcggtgaccagtaggatggtgaagac cagccaggagctggaaggaagctgccggaaggacaacaactccatcatctgctcagggctggggactgtgtctgcgggg agtgcctgtgccacaccagcgacgtccccggcaagctgatatacgggcagtactgcgagtgtgacaccatcaactgtgag cgctacaacggccaggtctgcggccggggaggggggctctgcttctgcgggaagtgccgctgccacccgggctttga gggetcagegtgecagtgegagaggaccactgagggetgectgaaccegeggegtgttgagtgtagtggegtgtegtggeeggt

gccgctgcaacgtatgcgagtgccattcaggctaccagctgcctctgtgccaggagtgccccggctgcccctcaccctgt ggcaaglacatctcctgcgccgagtgcctgaagttcgaaagggcccctttgggaagaactgcagcgcggcgtgtccggg cctgcagctgtcgaacaaccccgtgaagggcaggacctgcaaggagagggactcagagggctgctgggtggcctacacgc
tggagcagcaggacgggatggaccgctacctcatctatgtggatgagagccgagagtgtgtgggcaggcccaacatcgc gccatcgtcgggggcaccgtggcaggcatcgtgctgatcggcattctcctgctggtcatctggaaggctctgatccacct gagogacctccgggagtacaggcgctttgagaaggagaagctcaagtcccagtggaacaatgataatccccttttcaaga gcgccaccacgacggtcatgaaccccaagtttgctgagagttaggagca (SEQ ID NO:11944) ccacaccgacggtaccatgaaggacgaggtagctctactggctgctgtcaccctcctgggagtcctgctgcaagcctact tetecetgeaggtgateteggegegeagggeetteegegtgtegeegeegeteaceaceggeceaecegagttegagege gtctaccgagcccaggtgaactgcagcgagtacttcccgctgttcctcgccacgctctgggtcgccggcatcttctttca tgaagggggggggcctgtgcggcctggtctacctgttcgcgcgcctccgctacttccagggctacgcgctccgcgc cacttecteccggccgcgctgcgccgcgctcctcggacggctcccggacgctgctgccgtgggcctgagaccaaggccc 15 gagctcacagagcccccagctggggcatatctggtttccgggggcaggggggatacccagaggaggaagaagaggattctg atgoggocogaccottgcagcacggoctgtggoctcccccagctectgcccgtgcttctgggtcagtctggactttgcca 20 ggagtcctcgggtgccacctttcctccacctggcctgcgtgggctctgtcctcagggtggcccgccgtagtcccctcccactctgagttcctgtcccaaagtcctaaggaagtttccagaactacatctcaccatcttgagtcagccttggctc agtqtccatctcacaggcctggaaggggcaggagtcagcactgtccagaccacagggcctgagtgtggggagggcagccg tctaggaaggtggtggagggttgttaccttgaggcaagagggctgcggggcagaaagacacagcaggtgactgttgtggg aggcccaagagaggcctgggagagggatggcccacaagggctgaccctcccgccacccagggggccttggacaggtttcctcctggcagggtggcccttgtgcatggaacccctacaacgactaaggctggcagggatgaggtttcctgaaggagaaaga gcttgtggggcccagtgtggctggggggcgctgggactccattctgaagccaaaggcactgggaagggcttccgcagag 30 35 ggtaccatgaaggacgaggtagctctactggctgttgtcaccctcctgggagtcctgctgcaaggtgggctggttcctat ctaggaagagggtgggccttagatccctacagcttgccctctgccccttaggcccaggtggagggcagaggtggggactc cagcccaggeccaagctggaagaggtggggactttcagggaactgggggcacctggctgtgagagctgtaggacttgg gggtggcaagggtgccaggacaaatggtaggatagccatgggcttggggaagctgatctctgctctttccagctgtcccc tetetgggegteccagcaageggeeeeeattecetggetetgetteaaaggeaeeteeataetgggaeeaegtggageag 40 ggtagaggtgggactccttcctccagccccctaaaaagagcctgcttaatgcctttctcagactggccctaaaggacaca ttocttggccagatatcettgecacetaagagacaceactactecacagtgtgtgggetaggataaggcacagcetgggg ${\tt agggggctctgaaggggctgaacagacaggccagcctgacctccagctgctcctgcactgagctggatggccaccctgtg}$ 50 tctctgcgccccaggcttcagccctgcctcctcgctgaatgtcagggacacagggcaggccagggatgggtgagacgag atccetcccactcccatctctggggcttcgggtgtccagacctgactcccgctccccctcctcccccagcctacttctcc ctgcaggtgatctcggcgcagggccttccgcgtgtcgccgctcaccaccaggcccacccgagttcgagcgctcta 55 ccggcgcgctcatcccacccgcccaccgcagggtgaactgcagcgagtacttcccgctgttcctcgccacgctctgggtc gccggcatcttctttcatgaaggtcgggtgtggggcaggggcacgcgctggacccccgggacccgcgcagggcgctc accaggecegtgegtacetetegeagggggggggeetgtgggeetggtetacetgttegegegeeteegetaettee 60 ccctggcggcggccagaggaagtccccgtggggccagggttgcggcggggaagaagcggggctcctcgcgccacctccc getgacegeegeegeaggetggeacegetgtacgegagegegegeeetetggetggtggtggegetggetgeteg geetgetegeeeaetteeteeeggeegegetgegegegeteeteggaeggeteeggaegetgetgetgeegtgggeetga catcctagtctctatcattaaagttctagtgaccgagacccgggctgcgttctctgggtccgcgggggtggcgcaccgcg ggctacggagcctggaggggccagccggagtcggatcggtcttcactcctactcctactcagcgtggagggttactagtggagagtggagtggctgcgagagctgcagcccactcctactcagccactcctactcagcctcggggtc 75 tctccctgcaggtgatctcggcgcgcagggccttccgcgtgtcgccgctcaccaccggcccacccgagttcgagcgc gtctaccgagcccaggtgaactgcaggtacttcccgctgttcctcgccacgctcttgggtcgccggcatcttcttttattgaaggggcggcggcggcctgtgctctggtcacctgttcgcgcgcctccacgtcacggcctccgcgc ctatcattaaagttctagtgaccgagagctcacagagcccccagctggggcatatctggtttccgggggcagggcgata cccagaggaggaagaagggattctgagagagcccaacaggctccgagcctcaggctggagctgagcttggggcagcaagg

aaqqaccaqqtqcqaqqqcaqaaccatqcqqcccqacccctqcaqcacqqcctqtqqcctcccccaqctcctqcccqtqc ttctggqtcagtctggactttgccacttctgaccaaaagccaccgcaaacccactcaagccaaaagaggaagtgaccgtt aggagacacccagaactccaggcaggagtcctcgggtgccacctttcctctccacctggccctgcgtgggctctgtcct cagggtggcccgccgtagtccccctccccactctgagtttcctgtcccaaagtcctaaggaagtttccagaactacatct caccatcttgagtcagccttggctcagtgtccatctcacaggcctggaagggcaggagtcagcactgtccagaccacag ggcctgagtgtggggaggcagccgtctaggaaggtggtggtggtgttacttctacttgaggcaagagggctgcggggcagaa agacacagcaggtgactgttgtgggaggcccaagagaggcccttgtgcatggaatggcccacaaaggctgaccctcccgcca cccagggggccttggacaggtttcctcctggcagggtggcccttgtgcatggaacccctacaacgactaaggctggcagg 10 ggcactgggaagggcttccgcagaggagggtttggcaggggttgccaggaacagcttggatggggacagggaacagataa ggtgggtggaggagttagccgggagcctggggctggctccagcatgatgtgggggtctgcaaggccctggagaaagtggg gtggtgcagcagggggcacacccacagctggagctgacccagatggacagcttgggctctgccacgcgggactaggcaag 15 tgctggcttggcctggctccctggctctgtgtgtggtatggtcacacccccgtgcaccccctccactgagatggggcgggga gagcaccgaggctgctcttcctctcctgggccgtcctctgagcagcagacggggctaagcgttccccagctcgccttcac acacagecegtgecaceacacegaeggtaccatgaaggaegaggtagetetaetggetgetgteacectectgggagtee tgotgoaaggtgggctggttcctatctaggaagaggtgggccttagatccctacagcttgccctctgccccctaggccc aggtggagggcagaggtggggactccagcccaggccaagctggaagaggtggggactttcaggggaactggggggcacc 20 tggctgtgagagctgtaggacttgggggtggcaagggtgccaggacaaatggtaggatagccatgggcttggggaagctg atctctgctetttccagctgtcccctctctgggcgtcccagcaagcggccccattccctggctctgcttcaaaggcacc tetcagactggceetaaaggacacatteettggeeagatateettgeeacetaagagacaccactacteeacagtgtgtg ggetaggataaggeacageetggggaggggetetgaaggggetgaacagaeaggeeageetgaeeteeagetgeteetg 25 cactgagetggatggecaccetgtgacacceatetgcagagggeccagaaccaaaggtgecagggetgcaggactcaggg accaagagaagggctcctgcccacagagaaactttagggccagcccacctttgcaactacccaagccctggggtcctgg atgcaggaacagagaaactgaggtttggaggcacagggacgcaggctttagtgatcccggcctgaggcagggtcagaggg ccctgctggtgggggctggtaggtggtgacagggactgttagctacagggagtgtgcttccttgcacctgggaggatg cagccagctctgccctcagactcccgaggcacttcctggccagggacctgaaagctgcatttgcctgtgttttgagagtg 30 35 gccaagtgaagggccagattgcaggatccctcccatcccatctctggggcttcgggtgtccagacctgactcccgctcc ccctcctccccagcctacttctccctgcaggtgatctcggcgcgcagggccttccgcgtgtcgccgccgctcaccaccg ggtccgggtcgcaggaccatcccggccggcgctcatcccacccgcccaccgcagggtgaactgcagcgagtacttccc getgtteetegecacgetetgggtegeeggeatettetteatgaaggteggggtgtggggeagggegeagegetgga 40 cccccgggacccgcgcagggcgctcaccaggcccgtgcgtacctctcgcaggggcggcggccctgtgcggcctggtctac ggccggggaaagatcgcgggcggggggggctcctggggagcggaccgaagctgggggcggggcgacgggccggagcccag cgcctttggggattcggtgggcgagcctggcggcggccagaggaagtccccgtggggccagggttgcggcgagggaagaa 45 ctgctggtggcgctggctcggcctgctcgcccacttcctccggccgcgctgegcgccgcgctcctcggacggct ccccgggqaggggccccgctcccatcctagtctctatcattaaagttctagtgaccgagacccgggctgcgttctct ctagtggcggcgtgagagtggctgcgaaggaacgagcctccccctggggcgggactggatccgtcttcacctcctaccccactccctactcaccccactcctactcaccccactccagcgctcaccagcctcagcgggtcacaagcggtcaccagccccagtcctggggttcaccctcctagcggctcaaccgggttcaccagcggtctcacccctag 50 aggtgttcagggcagccctccgaggtccgcagagctgcgggcaccatgggaacgaagtgagtcagtgacaggcggtctca aggaaatgtccagaagccttggggatccaggggaggcccacagaaacaaagaagtgacttttagccaagtatgcaggaga 55 aacggaggag (SEQ ID NO:11947) gccattctctcacatcccgtgcggtcaggaagcccttcctgaactctgacttcagttcttgctgcggtttctgcccattt ttttcatatcctctgacagctgcgaggtcatctctgctctggcttttctccaagcagaacaagtgggggctctggaaagg ttaagggacctcagtggccaccattatactttgcatctttcctgagaagtgagagttgaaagggaagcaggaaggcccat 60 gcagtggtgcgatctcagctcactgcagcctccacttcctgggttcacatgattctcctgcctcagcctcccaagtagct gagactacaggcacatgccactacacccagctaacttttgtatttttagtagagacggggtttcaccatgttggccaggc tggtctcaaactgctaacatcaagtgatctgctcccctcagcctcccaaagtgctgggattaccggtatgaaccaccaca acctgccaggaattttttagttttttagctttttgcaggagacttcaaggaaaggagacattcctctgtccaggaaacgggta aggggaccatttctgcattgctggtttcccctcttggcagggtgggcatgaggcatcactgttcctgctccctcactcct 65 gctcctcatgctcagcctgccagctcggcctcaactttgtgtgtctaaagtggaactgaatagtagctgtgagaagatag gaaagaggtagtgccaatctccttgcccagatcataaatccagactcagcagggtaaccacatgggcaagcacaaggtag gtgcttggggaaagggaagtaattggcattctgtgtgataccaaggagaccatttggatttttggcttctaccaaagga ccaccacctagatcatagcttgaactgaagccaaggacagagtgctgccccttcggcatttactgatgtgccctcttta aatcatgatgttatctaacccaaacccagacccaggacctagtcacagctccaacctacacttcctattaatcttaaaac 70 aaagcgaaacaaacaaaaagatatcagcattgtagcctccaatctgagcccatttcccttctctggctaccatacctc cttctcctatatgataccattcactactttgttcaattatccagtctagacctgcatcttgaggccacacccagccttctcactcccacaccccacacccctctttcctcatctggtctcttctcatctggccccacctctaaggagtcctcc tgccttctgggttgccttggaaaacagactatccccctcctagtgaagggagtgggtaggggtttcagcccaccctca 75 qqaagatgcgtcttccctgtcctctgctctgtggtacttcctctctggctgatttagcaaacagcacctagacctggggc cagttcctgccaaagcttgtaagtcctcccgacggccatgaacactacatcttctgcagcacccccctcactaggtgtag agtatcctgaaaaggatgcagaagcgctctgtcactgccctgatggtgctgaacctggccctggccgacctggccgtatt ጸበ atgtctgcggagtcagcatgtacgccagcgtcctgcttatcacggccatgagtctagaccgctcactggcggtggcccgc

- .

ggccacacccgtcctcgcgtaccgcacagtagtgccctggaaaacgaacatgagcctgtgcttcccgcgggtaccccagcg aagggcaccgggccttccatctaatcttcgaggctgtcacgggcttcctgctgcccttcctggctgtggtggccagctac teggacatagggegteggetacaggeceggegetteegeegeageegeegeaeeggeegeetggtggtgeteateateet ggttagggctcgtggggaagcggctgagcctggcccgcaacgtgctcatcgcattgccttcctgagcagcagcgtgaac gggttccgaggcgtccagcacgcgcggggggcagcctgggccagaccgctaggagcggccccgccgctctggagcccg gcccttccgagagcctcactgcctccagccctctcaagttaaacgaactgaactaggcctggtggaaggaggcgcacttt cctcctggcagaatgctagctctgagccagttcagtacctggaggaggagcaggggggtggagggcgtggagggcgtgga agcgtgggaggegggagtggaagtggaagaagaagaggagagatggagcaaagtgagggccgagtgagagcgtgctccagcct ggctcccacaggcagctttaaccattaaaactgaagtctgaa (SEQ ID NO:11948) ctacttctggctcttctatttggggcagtttctgctcttcatctaaggtctgagacttccacctttgagacccctttggg tgetaagaegetgeetgaggatgaggagaeaecagageaggagatggaggagaeeeettgeagggagetggaggaagagg 15 aaaaaccttacgtgtcctgaggaagaggacacagtaaaagtggtggcatccctgggtgccagacctgccgctacctcct ${\tt acttcaatattaattatcgaatccagtgttctgtcagcgcgctcaaccagggtcaagtctggattggaggcaggatcacagggtcaagtctggattggaggcaggatcacagggtcaagtctggattggaggcaggatcacagggtcaagtctggattggaggcaggatcacagggtcaagtctggattggaggcaggatcacagggtcaagtctggattggaggcaggatcacagggtcaagtctggattggaggcaggatcacagggtcaagtctggattggattggaggcaggatcacagggtcaagtctggattggattggaggcaggatcacagggtcaaggattg$ ggctcgggtcgctgcagacgctttcagtgggttgacggcagccgctggaactttgcgtactgggctgctcaccagccctg 20 ctacttctggctcttctatttggggcagtttctgctcttcatctaaggtctgagacttccacctttgagacccctttggg 25 30 ggetegggtegetgeagaegettteagtgggttgaeggeageegetggaaetttgegtaetgggetgeteaeeageeetg gtecegeggtggteactgegtggeeetgtgtaceegaggaggetactggegtegageeeactgeeteagaagaetteett tcatctgttcctactgagctggtcccagccagctcagagctgccctctcctgggcagctgcctcccctcctctgctt gccatccctccctccacctcctgcaataaaatgggttttactgaaaa (SEQ ID NO:11950) 35 ctacttctggctcttctatttggggcagtttctgctcttcatctaaggtctgagacttccacctttgagacccctttggg tgctaagacgctgcctgaggatgagacaccagagcaggagatggaggagaccccttgcagggagctggaggaagagg aaaaaccttacgtgtcctgaggaagaggacacagtaaaagtggtgggcatccctgggtgccagacctgccgctacctcct cagagcaggagatggaggagaccccttgcagggagctggaggaagagaggagtggggctctggaagtgaagatgcctcc aagaaagatggggctgttgagtctatctcagtgccagatatggtggacaaaaaaccttacgtgtcctgaggaagaggacac agtaaaagtggtgggcatccctgggtgccagacctgccgctacctcctggtgagaagtcttcagacgtttagtcaagctt gtcagcgcgctcaaccagggtcaagtctggattggaggcaggatcacaggctcgggtcgctgcagacgctttcagtgggt tgacggcagccgctggaactttgcgtactgggctgctcaccagccctggtcccgcggtggtcactgcgtggccctgtgta tgggttttactgaaaa (SEQ ID NO:11951) agcagagggctgagaccaaaccagaaacctccaattctcatgtggaagcccatgccctcaccctccaacatgaaagcct ctgcagcacttctgtgtctgctgctcacagcagctgctttcagcccccagggggcttgctcagccagttgggattaatact tcaactacctgctgctacagatttatcaataagaaatccctaagcagaggctggagagctacagaaggaccaccagtag $\verb|ccactgtccccgggaagctgtaatcttcaagaccaaactggacaaggagatctgtgctgaccccacacagaagtgggtcc||$ aggactttatgaagcacctggacaagaaaacccaaactccaaagctttgaacattcatgactgaactaaaaaccaagccat gacttgagaaacaaataatttgtaatcatgtctttctcagagtggttctgagattattttaatctaattctaaggaat atgagctttatgtagattattttaatcttaatctctaaggaat 65 ttgtaaaaaa (SEQ ID NO:11952) ttaaactttegtttattgctaaaggttaatcactgctgtttcccgtggggggtgtggctaggctaagcgttttgagctgca ttgctgcgtgcttgatgcttgtcccttttgatcgtggtgatttagagggtgaactcactggaatggggatgcttgcatgt 70 gtaatcttactaagagctaatagaaaggctaggaccaaaccagaaacctccaattctcatgtggaagcccatgccctcac cctccaacatgaaagcetetgcagcacttetgtgtetgctgctcacagcagetgettteagcecccaggggettgetcag ccagttgggattaatacttcaactacctgctgctacagatttatcaataagaaaatccctaagcagaggctggagagcta cagaaggaccaccagtagccactgtoccogggaagctgtaatcttcaagaccaaactggacaaggagatctgtgctgacc ccacacagaagtgggtccaggactttatgaagcacctggacaagaaaacccaaactccaaagctttgaacattcatgact 75 gaactgaaaacaagccatgacttgagaaacaaataatttgtataccctgtcctttctcagagttggttctgagattatttt aatctaattctaaggaatatgagctttatgtaataatgtgaatcatggtttttcttagtagattttaaaagttattaata ttttaatttaatcttccatggattttggtgggttttgaacataaagccttggatgtatatgtcatctcagtgctgtaaaa actgtgggatgctcctcccttctctacctcatgggggtattgtataagtccttgcaagaatcagtgcaaagatttgcttt

ttgctqcqtqcttgatgcttgtcccttttgatcqtqqtqatttaqaqqqtqaactcactqgaatgqqqatqcttgcatgt gtaatcttactaagagctaatagaaaggctaggaccaaaccagaaacctccaattctcatgtggaagcccatgcctcac cctccaacatgaaagcctctgcagcacttctgtgtctgctgctcacagcagctgctttcagcccccaggggcttgctcag ccagttgggattaatacttcaactacctgctgctacagatttatcaataagaaaatccctaagcagaggctggagagcta cagaaggaccaccagtagccactgtccccgggaagctgtaatcttcaagaccaaactggacaaggagatctgtgctgacc ccacacagaagtgggtccaggactttatgaagcacctggacaagaaaacccaaactccaaagctttgaacattcatgact gaactgaaaacaagccatgacttgagaaacaaataatttgtataccctgtcctttctcagagttggttctgagattatttt aatctaattctaaggaatatgagctttatgtaataatgtgaatcatggtttttcttagtagattttaaaagttattaata ttttaatttaatcttccatggattttggtgggttttgaacataaagccttggatgtatatgtcatctcagtgctgtaaaa 10 actgtgggatgctcctcccttctctacctcatgggggtattgtataagtccttgcaagaatcagtgcaaagatttgcttt 15 cccagaccccagacactgaatgaaggccttgtgatatagtcaagagcaaaaaaacccagaagattgttattgttttaagt cactgttttcagatagattgctatgcagcaatagattattgaaatagacactacaattttaggtactattattctaagaa tattgaattttatttttctgctaatgttctattattttacttttctctgggttttagaaagccaccaggatttaagacag tgaagaatetttgagteetttgtagagttgaaccaaagtttgaatgtetetttgtggaetegtgteetagggataccaet 20 tcatttcagagaaactggtctcttgataatagccatagattacatactgtggtcttcctctacatagaccctacctcacc taccactcctggtcttagctgaaaaacaggctagcctcgactcatactgtcatttcctatcctcccactgaagtgcactg gctcagcagatttattactccatagatttattactccattctatgattcatcctctctgcttcctataaaaggcagagac agagettecagaggageagaggggetgagaccaaaccagaaacctecaattetcatgtggaageccatgccetcaccte caacatgaaagcctctgcagcacttctgtgtctgctgctcacagcagctgctttcagcccccaggggcttgctcagccag 25 gtaaggtccctctctcttctccttgaagcacattgccccctctctgggttatcctggaccaatcaagaagacctgatac ocacagtctcaetttaacagctactttteeaagataaggtaaettagaaaaaggataagggtgageecaaceacage tgctgttgggtagagcctgaactagaattccagctgtgaaccccaaatccagctccttctaggattccagctctgggaac acceteagtgeagttaceactecagettecageagaatttgggateagggtgateaaagacaggaggettetggggatgggtgttecagaatacaggaggatetetggggat gcagaggtggtacgtatcagggaaactcatgaccaagcattgaatgctcagagcctaaaaggggatccatagttggggta cccttgctctaaggaattggattattatattagccctcctagcaatgcccagagtagccatcaattcctcttccgtctt tcaactqqtqatqqtqcatccctatttcacagtccataaaagtgaaagggagtttatgaaatgcctcaaagggcagagac attgggtttgggatgggcagcttttccctccacctcttcctttcttctgattccttcttcttaccattccctgttttac aaacaqaaaqacccaggacacaccctcaatggacttttcttcttgttgtttcattgcagttgggattaatacttcaacta 35 cctgctgctacagatttatcaataagaaaatccctaagcagaggctggagagctacagaaggaccaccagtagccactgt cccegggaagetgtaatgtatgtggacgatgaccaccacccctcacacctcagtcctaggttettecctgggcagggaa taggactagtatcagaatgagttggagtcaaatactgtgatgcatacagcatctctaaccttatcccagacatttgccag 40 tetteetteateeetgaggeateeecateagetaggetgatgggetagaeagattteecatagaettggteaeaeteeea ggctgaaccctcaaggtgttccatctgactgtctcctttctgctccacagcttcaagaccaaactggacaaggagatctg tgctgaccccacacagaagtgggtccaggactttatgaagcacctggacaagaaaacccaaactccaaagctttgaacat tcatgactgaactgaaacaagccatgacttgagaaacaaataatttgtataccctgtcctttctcagagtggttctgag attattttaatctaattctaaggaatatgagctttatgtaataatgtgaatcatggtttttcttagtagattttaaaagt tattaatattttaatttaatcttccatggattttggtgggttttgaacataaagccttggatgtatatgtcatctcagtg ctgtaaaaactgtgggatgctcctcccttctctacctcatgggggtattgtataagtccttgcaagaatcagtgcaaaga gggta (SEQ ID NO:11955) 50 agcagaggggctgagaccaaaccagaaacctccaattctcatgtggaagcccatgccctcaccctccaacatgaaagcct ctgcagcacttctgtgtctgctgctcacagcagctgctttcagcccccaggggcttgctcagccagttgggattaatact tcaactacctgctgctacagatttatcaataagaaaatccctaagcagaggctggagagctacagaaggaccaccagtag ccactgtccccgggaagctgtaatcttcaagaccaaactggacaaggagatctgtgctgaccccacacagaagtgggtcc aggactttatgaagcacctggacaagaaaacccaaactccaaagctttgaacattcatgactgaactaaaaacaagccat 55 gacttgagaaacaaataatttgtataccctgtcctttctcagagtggttctgagattattttaatctaattctaaggaat atgagctttatgtaataatgtgaatcatggtttttcttagtagattttaaaagttattaatattttaattttaatcttcca tggattttggtgggttttgaacataaagccttggatgtatatgtcatctcagtgctgtaaaaactgtgggatgctcctcc cttctctacctcatgggggtattgtataagtccttgcaagaatcagtgcaaagatttgctttaattgttaagatatgatg 60 tatagettagttaaactttegttattgetaaaggttaateaetgetgtteeegtgggggtgtgggetaggetaagegtt ttgagctgcattgctgcgtgcttgatgcttgtcccttttgatcgtggtgatttagagggtgaactcactggaatggggat gcttgcatgtgtaatcttactaagagctaatagaaaggctaggaccaaaccagaaacctccaattctcatgtggaagccc atgccctcaccctccaacatgaaagcctctgcagcacttctgtgtctgctcacagcagctgctttcagccccaggg gcttgctcagccagttgggattaatacttcaactacctgctgctacagatttatcaataagaaaatccctaagcagaggc tggagagctacagaaggaccaccagtagccactgtccccgggaagctgtaatcttcaagaccaaactggacaaggagatctgtgctgaccccacacagaagtgggtccaggactttatgaagcactggacaagaaaacccaaaactccaaagcttgaac attcatgactgaactgaaacaagccatgacttgagaaacaaataatttgtataccctgtcctttctcagagtggttctg agattattttaatctaattctaaggaatatgagctttatgtaataatgtgaatcatggtttttcttagtagattttaaaa gttattaatattttaattttaatcttocatggattttggtgggttttgaacataaagccttggatgtatatgtcatctcag tgctgtaaaaactgtgggatgctcccccttctctacctcatgggggtattgtataagtccttgcaagaatcagtgcaaa 70 tgtgaccgcggtggctggcacgaaattgaccaaccctggggttagtatagcttagttaaactttcgtttattgctaaagg 75 ttttgatcgtggtgatttagagggtgaactcactggaatggggatgcttgcatgtgtaatcttactaagagctaatagaa aqqctaggaccaaaccagaaacctccaattctcatgtggaagccatgcctcaccctccaacatgaaagcctctgcagc acttotgtgtotgctgctcacagcagctgctttcagcccccaggggcttgctcagccagttgggattaatacttcaacta cctgctgctacagatttatcaataagaaaatccctaagcagaggctggagagctacagaaggaccaccagtagccactgt ccccgggaagctgtaatcttcaagaccaaactggacaaggagatctgtgctgaccccacacagaagtgggtccaggactt tatgaagcacctggacaagaaaacccaaactccaaagctttgaacattcatgactgaactgaaaacaagccatgacttga gaaacaaataatttgtataccctgtcctttctcagagtggttctgagattattttaatctaattctaaggaatatgagct

ttatgtaataatgtgaatcatggtttttcttagtagattttaaaagttattaatatttaatttaatcttccatggattt tggtgggttttgaacataaagccttggatgtatatgtcatctcagtgctgtaaaaactgtgggatgctcctcccttctct acctcatgggggtattgtataagtccttgcaagaatcagtgcaaagatttgctttaattgttaagatatgatgtccctat acaaaaaaaaaaaaaaaaggatccttaagccatcatgcaaaatatctagccatgtggagggaccactggaaagatcac agattgttattgttttaagtcactgttttcagatagattgctatgcagcaatagattattgaaatagacactacaatttt aggtactattattctaagaatattgaattttatttttctgctaatgttctattatttttacttttctctgggttttagaaa 10 gccaccaggatttaagacagtgaagaatctttgagtcctttgtagagttgaaccaaagtttgaatgtctctttgtggact cgtgtcctagggataccactccaaagggaaaaggggaatatcccttacatatctttgactttggtatccctgattccttc ctttttctatagaatgtgtctcatttcagagaaactggtctcttgataatagccatagattacatactgtggtcttcctc tacatagaccctacctcacctaccactcctggtcttagctgaaaaacaggctagcctcgactcatactgtcatttcctat cctcccactgaagtgcactggctcagcagatttattactccatagatttattactccattctatgattcatcctctctgc 15 ttcctataaaaaggcagagacagagcttccagaggagcagaggggctgagaccaaaccagaaacctccaattctcatgtgg aagcccatgccctcaccctccaacatgaaagcctctgcagcacttctgtgtctgctgctcacagcagctgctttcagccc ccaggggcttgctcagccaggtaaggtccctctctcttctccttgaagcacattgccccctctctgggttatcctggac caatcaagaagacctgatacccacagtctcactttaacagctacttttccaagataaggtaacttagaaaaaggataagg ggtgagcccaaccacacagctgctgttgggtagagcctgaactagaattccagctgtgaaccccaaatccagctccttct aggattccagctctgggaacaccctcagtgcagttaccactccagctgcttccagcagaatttgggatcagggtgatcaa 20 agacaggaggcttctggggatgggtgttccaggataccaggaaacccagaatctggtctgtggaagcccag
cttccagaaaacagcagctctgcagaggtggtacgtatcagggaaactcatgaccaagcattgaatgctcagagcctaaaa ggggatccatagttggggtacccttgctctaaggaattggattattatattagcccctcctagcaatgcccagagtagccatcaattcctcttccgtctttcaactggtgatggtgcatccctatttcacagtccataaaagtgaaagggagtttatgaa cttaccattccctgttttacaaacagaaagacccaggacaccctcaatggacttttcttcttgttgtttcattgcagt tgggattaatacttcaactacctgctgctacagatttatcaataagaaaatccttaagcagaggctggagagctacagaa ğttettecetgggcagggaataggactagtatcagaatgagttggagtcaaatactgtgatgcatacagcatetetaacc 30 ttatoccagacatttgccagtgagaacaatacaagtaaagaaagtggcttctcactctcagctccctttccagctatca ttttacatctcaqttcqttccttcatcctggaaccaagagagattcacttgggctaccaaaaagagctgcttctctgagt ccccttcctttgttttatcttcttccttcatccctgaggcatccccatcagctaggctgatgggctagacagatttccca tagacttggtcacactcccaggctgaaccctcaaggtgttccatctgactgtctcctttctgctccacagcttcaagacc aaactggacaaggagatctgtgctgaccccacacagaagtgggtccaggactttatgaagcacctggacaagaaaaccca 35 aactccaaagctttgaacattcatgactgaactgaaacaagccatgacttgagaaacaaataatttgtataccctgtcc tttctcagagtggttctgagattattttaatctaattctaaggaatatgagctttatgtaataatgtgaatcatggtttt tcttagtagattttaaaagttattaatatttaattttaatcttccatggattttggtgggttttgaacataaagccttgg atgtatatgtcatctcagtgctgtaaaaactgtgggatgctcctcccttctctacctcatgggggtattgtataagtcct tgcaagaatcagtgcaaagatttgctttaattgttaagatatgatgtccctatggaagcatattgttattatataattac 40 atatttgcatatgtatgactcccaaattttcacataaaatagatttttgtataacagctgccattcatggttttttaaag gataagtaataaagctggtggggta (SEQ ID NO:11956) aaccgagaggctgagactaacccagaaagatccaattctcaaactgaagctcgcactctcgcctccagcatgaaagtctc cagtcacctgctgttataacttcaccaataggaagatctcagtgcagaggctcgcgagctatagaagaatcaccagcagcagcagtgtcccaaagaagctgtgatcttcaagaccattgtggccaaagagagtctgtgcccaagcagcagaagtgggttca atgccttaagtaatgttaattcttatttaagttattgatgttttaagttatctttcatggtactagtgttttttagata cagagacttggggaaattgcttttcctcttgaaccacagttctacccctgggatgttttgagggtctttgcaagaatcat taatacaaagaatttttttttaacattccaatgcattgctaaaatattattgtggaaatgaatattttgtaactattacac 50 caaataaatatattttgtac (SEQ ID NO:11957) agcccatgtcctctttttcaggtgatgactttcccctgaggaagccctgtagcgtgcctggaggaaggggctctccaac cccagcccacctagccaccatgaacacttcagccccacctgctgtcagcccaacatcaccgtcctggcaccaggaaag ggtccctggcaagtggccttcattgggatcaccacgggcctcctgtcgctagccacagtgacaggcaacctgctggtact 55 catctctttcaaggtcaacacggagctcaagacagtcaataactacttcctgctgagcctggcctgtgctgacctcatca toggtacottotocatgaacototataccacgtacotgotoatgggccactgggctotgggcacgctggcttgtgacoto tggctggccctggactatgtggccagcaatgcctccgtcatgaatctgctgctcatcagctttgaccgctacttctccgt ttgtgctctgggccccagccatcctcttctggcagtacctggtaggggagcggacgatgctagctgggcagtgctacatc cagttcctctcccagcccatcatcacctttggcacagccatggctgccttctacctccctgtcacagtcatgtgcacgct 60 cagaagccccgtggaaaggagcagctggccaagcggaagaccttctcgctggtcaaggagaagaaggcggctcggaccct gagbgccatcctcctggccttcatcctcacctggacaccgtacaacatcatggtgctggtgctggtgctactctctcgctggcaggtgctggacact gtgttcccgagaccctgtgggagctgggctactggctgtgctacgtcaacagcaccatcaaccccatgtgctacgcactc tgcaacaaaqcettccqqqacacetttcqcctgctgcttqctttqccgctgggacaagagacgctggcgcaagatccccaa 70 gcgcctggctccgtgcaccgcactccctcccgccaatgctgatagtcccctctcctgcatcctccaccccagtccccg gg (SEQ ID NO:11958)
attttaaaccaatgtttatattatgtttgttaattttattctatttcttgcaggtttaaatgtttatttgctacttggc tactgattagagaacgcaaaatgaataactcaacaaactcctctaacaatagcctggctcttacaagtccttataagaca tttqaagtggtgtttattgtcctggtggctggatccctcagtttggtgaccattatcgggaacatcctagtcatggtttc 75 cattaaagtcaaccgccacctccagaccgtcaacaattactttttattcagcttggcctgtgctgaccttatcataggtg ttttctccatgaacttgtacaccctctacactgtgattggttactggcctttgggacctgtggtgtgtgaccttttggcta gccctggactatgtggtcagcaatgcctcagttatgaatctgctcatcatcagctttgacaggtacttctgtgtcacaaa acetetgacetacecagteaageggaceacaaaaatggeaggtatgatgattgeagetgeetgggteetetettteatee tctgggctccagccattctcttctggcagttcattgtaggggtgagaactgtgggaggatggggggtgctacattcagttt ttttccaatgctgctgtcacctttggtacggctattgcagccttctatttgccagtgatcatcatgactgtgctatattg gtctggtacaaggaaggatagtgaagccaaacaataacaacatgcccagcagtgacgatggcctggagcacaacaaaatc

ctcagtcagtgctgttgcctctaatatgagagatgatgaaataacccaggatgaaaacacagtttccacttccctgggcc caagaagacctttaaacaccttctcatgtgtcattataagaacataggcgctacaaggtaaaatatctttgaaaaagata gaaggtgggcaaggggagcttgagaagaataaaagggataaacgagctc (SEQ ID NO:11959)

tccagtgtacctccagatgactcccccattccctctgtagttcatgcttttctctccccttcctcccagacacggcct acceaccectggcaaceaacatggccaacttcacacctgtcaatggcagctcgggcaatcagtccgtgcgcctggtcacg teateateceacaategetatgagaeggtggaaatggtetteattgcacaggtaaataggtetegtgtgaetggt egtgggcaacatectggtgatgetgtecateaaggteaacaggcagetgcagacagtcaacaactacttectetteagec tggegtgtgetgateteateataaggegeettetecatgaacetetacacegtgtacateateateatggeceetg ggegccgtggtctgcgacctgtggccctggactacgtgtgagcaacqcctccgtcatgaaccttctcatcatcat gctttgaccgctacttctgcgtcaccaagcctctcacctaccctgcccggcgcaccaccaagatggcaggcctcatgattg ctgctgctgggtactgtccttcgtgctctgggcgcctgccatcttgttctggcagtttgtgggtaagcggacggtgcccgacaaccagtgcttcatccagttcctgtccaacccagcagtgacctttggcacagccattgctgccttctacctgcc tgtggtcatcatgacggtgctgtacatccacatctccctggccagtcgcagccgagtccacaaagcaccggcccgagggcc cgaaggagaagaagccaagacgctggccttcctcaagagcccactaatgaagcagagcgtcaagaagcccccggg gaggccgccgggaggagctgcgcaatggcaagctggaggaggcccccccgccagcgctgccaccgccaccgccccgt ggctgataaggacacttccaatgagtccagctcaggcagtgccacccagaacaccaaggaacgcccagccacagagctgt ccaccacagaggccaccacgccatgcccgccctcccctgcagccgcgggccctcaacccagcctccagatggtcc gggagcgcaaagtgacacgaacgatctttgccattctgctagccttcatcctcacctggacgccctacaacgtcatggtc ctggtgaacaccttctgccagagctgcatccctgacacggtgtggtccattggctactggctctgctacgtcaacagcac

20

25

catcaaccctgcctgctatgctctgtgcaacgccacctttaaaaagaccttccggcacctgctgctgtgccagtatcgga 30 ggctgcattcagagaccagatct (SEQ ID NO:11960)

ctacatcatcatgaatcgatcgagccttagggaacttggcctgtgacctctggcttgccattgactacgtagcagcatg cctctgttatgaatcttctggtcatcagctttgacagatacttttccatcacgaggccgctcacgtaccgagccaaacga acaacaagagagccggtgtgatgatcggtctggcttgggtcatctcctttgtcctttgggctcctgccatcttgttctg

gcacagccatcgctgctttttatatgcctgtcaccattatgactattttatactggaggatctataaggaaactgaaaag cgtaccaaagagettgetggeetgcaageetetgggacagaggeagagaeagaaaaetttgteeaeeeaegggeagtte tcgaagctgcagctacgaacttcaacagcaaagcatgaaacgctccaacaggaggaagtatggccgctgccacttct ggttcacaaccaagagctggaaacccagctccgagcagatggaccaagaccacagcagcagtgacagttggaacaacaat gatgctgctgctccctggagaactccgcctcctccgacgaggaggacattggctccgagacgagagccatctactccat cgtgctcaagcttccgggtcacagcaccatcctcaactccaccaagttaccctcatcggacaacctgcaggtgcctgagg

cccagccacctagccacctagaccacttcagcacactgctgtcagcccaacatcaccggcaccaggaaag
ggtccctggcaagtggccttcattgggatcaccagggcctcctgtcgctagccacagtgacaggcaacctgctggtact catctctttcaaggtcaacacggagctcaagacagtcaataactacttcctgctgagcctggcctgtgctgacctcatca teggtacettetecatgaacetetataceaegtacetgeteatgggeeactgggetetggggaaegetggettgtgacete tggctggccctggactatgtggccagcaatgcctccgtcatgaatctgctgctcatcagctttgaccgctacttctccgt cagttecteteccageccateateacetttggcacagecatggetgeettetacetecetgteacagtcatgtgcacget ctactggcgcatctaccgggagacagagaaccgagcacgggagctggcagcccttcagggctccgagacgccaggcaaag

ggggtggcagcagcagcagctcagagaggtctcagccaggggctgagggctcaccagagactcctccaggccgctgctgt cctcacatcctcagagggagaggagcctggctccgaagtggtgatcaagatgccaatggtggaccccgaggcacaggccc ccaccaagcagcccccacggagctccccaaatacagtcaagaggccgactaagaaagggcgtgatcgagctggcaagggc

aaacctctgacctacccagtcaagcggaccacaaaaatggcaggtatgatgattgcagctgcctgggtcctctctttcat

 ${\tt cctctgggctccagccattctcttctggcagttcattgtaggggtgagaactgtggaggatgggagtgctacattcagttttttccaatgctgctgctgtcacctttggtacggctattgcagccttctatttgccagtgatcatcatgactgtgctatat$ aagtctggtacaaggaaggatagtgaagccaaacaataacaacatgcccagcagtgacgatggcctggagcacaacaaaa 10 ctgtgtggacaattggttactggcttgttacatcaacagcactatcaaccctgctgctgtatgcactttgaatgccact ttcaagaagacctttaaacaccttctcatgtgtcattataagaacataggcgctacaaggtaaaatatctttgaaaaaga tagaaqqtqqqcaaqqqqaqcttqaqaaqaataaaaqqqataaacgagctctccaqtqtacctccaqatqactcccccat ttcacacctqtcaatgqcaqctcqqqcaatcaqtccqtqcgcctggtcacqtcatcatcccacaatcqctatgagacggt ggaaatggtcttcattgccacagtgacaggctccctgagcctggtgactgtcgtgggcaacatcctggtgatgctgtcca tcaaggtcaacaggcagctgcagacagtcaacaactacttcctcttcagcctggcgtgtgctgatctcatcataggcgcc cctggactacgtggtgagcaacgcctccgtcatgaaccttctcatcatcatcatcatcgctttgaccgctacttctgcgtcaccaagc 20 ctctcacctaccctgcccggcgcaccaccaagatggcaggcctcatgattgctgctgcctgggtactgtccttcgtgctc tgggcgcctgccatcttgttetggcagtttgtggtgggtaagcggacggtgcccgacaaccagtgcttcatccagttcct acatcteeetggccagtegcageegagtecacaagcaceggcccgagggcccgaaggagaagaaagccaagacgetggcc 25 caagctggaggaggccccccgccagcgctgccaccgccaccgcgccccgtggctgataaggacacttccaatgagtcca cccgcccttcccttgcagccgcgggccttcaacccagcttccagatggtccaagatccagattgtgacgaagcagacagg caatgagtgtgtgacagccattgagattgtgcctgccacgccggctggcatgcgccctgcggccaacgtggcccgcaagt acgccacctttaaaaagaccttccggcacctgctgctgctgccagtatcggaacatcggcactgccaggtaggcaggagtgccctaggaggtgctggtgttgcgtgctggggggaccacacggctcacttgctgtggggaagagttgcagg Caccattctgcgttcacgtttgctgaggaggaagttcagaagaggctctgtggctgcattcagaaccagatcttctttt aacgtatgtaatgcaaagaccaaacaaataaaggcagaaatttttctaacctgtctcttctctcttttcccccagactat 35 gtcagagagtcacaatgaccttgcacaataacagtacaacctcgcctttgtttccaaacatcagctcctcctggatacac agccctccgatgcagggctgcccccgggaaccgtcactcatttcggcagctacaatgtttctcgagcagctggcaattt ctcctctccagacggtaccaccgatgacctctgggaggtcataccgtctggcaagtggtcttcatcgctttcttaacgg gcatcctggccttggtgaccatcatcggcaacatcctggtaattgtgtcatttaaggtcaacaagcagctgaagacggtc 40 aacaactactteetettaageetggeetgtgeegatetgattateggggteattteaatgaatetgtttaegaeetaeat catcatgaatcgatgggccttagggaacttggcctgtgacctctggcttggccattgactacgtagccagcaatgcctctg ttatgaatettetggteateagetttgacagataettttecateaegaggeegeteaegtaeegageeaaaegaaeaaea aagagagccggtgtgatgatcggtctggcttgggtcatctcctttgtcctttgggctcctgccatcttgttctggcaata 45 ccatcgctgctttttatatgcctgtcaccattatgactattttatactggaggatctataaggaaactgaaaagcgtacc aaagagettgetggeetgcaageetetgggacagaggcagagacagaaaactttgtccaccccacgggcagttctcgaag ctgcagcagttacgaacttcaacagcaaagcatgaaacgctccaacaggaggaagtatggccgctgccacttctggttca caaccaagagctggaaacccagctccgagcagatggaccaagaccacagcagcagtgacagttggaacaacaatgatgct getgeeteeetegagagaaeteegeeteeteegaegaggaggaeattggeteegagaegagaggeeatetaeteeategtgeteaagetteegggteacageaceateeteaaeteeaeeagetaeeeteateggaeaaeetgeaggtgeetgaggaggage tggggatggtggacttggagggaaagccgacaagctgcaggcccagaagaggtggacgatggaggcagttttccaaaa agcttctccaagcttccactctagtgggtaa gagcacggccactctacctctgtcctcaagaagccactctggccaagaagtcagatca ctaagcggaaaaggatgtccctggtcaaggagaagaaagcggcccagaccttcagtgcgatettgcttgccttcatcatc 55 acttggaccccatacaacatcatggttctggtgaacaccttttgtgacagctgcatacccaaaaccttttggaatctggg ctactggctgtgctacatcaacagcaccgtgaaccccgtgtgctatgctctgtgcaacaaaacattcagaaccactttca agatgctgctgctgtgccagtgtgacaaaaaaaaagaggcgcaagcagtaccagcagagacagtcggtcatttttcac aagcgcgcacccgagcaggccttgtagaatgaggttgtatcaatagcagtgacaaaacgacacatca (SEQ ID NO:11962) atggataacgtcctcccggtggactcagacctctccccaaacatctccactaacacctcggaacccaatcagttcgtgca 60 accagectggeaaattgteetttgggeagetgettacaeggteattgtggtgacetetgtggtggeaaegtggtagtga tgtggatcatcttagcccacaaaagaatgaggacagtgacgaactattttctggtgaacctggccttcgcggaggcctcc atggctgcattcaatacagtggtgaacttcacctatgctgtccacaacgaatggtactacggcctgttctactgcaagtt ccacaacttcttccccatcgccgcttgcttcgccagtatctactccatgacggctgtggcctttgataggtacatggcca tcatacatcccctccagccccggctgtcagccacaagccaccaaagtggtcatctgtgtcatctgggtcctggctctcctg 65 ctggccttcccccagggctactactcaaccacagagaccatgccagcagagtcgtgtgcatgatcgaatggccagagca tccgaacaagatttatgagaaagtgtaccacatctgtgtgactgtgatctacttcctccccctgctggtgattggct atgcatacaccatagtgggaatcacactatgggccagtgagatccccggggactcctctgaccgctaccacgagcaagtc cttcctcctgcctacatcaacccagatctctacctgaagaagtttatccagcaggtctacctggccatcatgtggctgg ccatgagctccaccatgtacaaccccatcatctactgctgcctcaatgacaggttccgtctgggcttcaagcatgcctccggtgttcatcatcatcatgaggctgacatgaaatccacccggtatctccagacccagggcag ctattgcagtatctttcagcttccagtcttatctgaagaccccggcaccaaagtgaccaggaggcagagaagaacttcag gctctggtccctggcgtatggtgtggtggtggcagtggcagttttgggaaatctcatcgtcatctqqatcatcctggccc acaagegcatgaggactgtcaccaactacttccttgtgaacctggctttctccgacgcctccatggccgccttcaacacg ttqqtcaatttcatctacgcgcttcatagcgagtggtactttggcgccaactactgccgcttccagaacttctttcctat

cacagetqtgttegeeageatetaeteeatgaeggeeattgeggtggaeaggtatatggetattattgateeettgaaac

ccagactgtctgctacagcaaccaagattgtcattggaagtatttggattctagcatttctacttgccttccctcagtgt ctttattccaaaaccaaagtcatgccaggccgtactctctgctttgtgcaatggccagaaggtcccaaacaacatttcac ccatcatctactgctgtctgaataaaagatttcgagctggcttcaagagagcatttcgctggtgtcctttcatcaaagtt tccagctatgatgagctagagctcaagaccaccaggtttcatccaaaccggcaaagcagtatgtacaccgtgaccagaat 10 ggagtccatgacagtcgtgtttgaccccaacgatgcagacaccaccaggtccagtcggaagaaaagagcaacgccaagag acccaagtttcaatggctgctctcgcaggaattccaaatctgcctccgccacttcaagtttcataagctcaccctatacc tctgtggatgaatattcttaattccatttcctgaggtaaaagattagtgtgagaccatcatggtgccagtctaggacccc attctcctatttatcagtcctgtcctatataccctctagaaacagaaagcaatttttaggcagctatggtcaaattgaga aaggtagtgtataaatgtgacaaagacactaataacatgttagcctccacccaaaataaaatgggctttaaattt (SEQ ID NO:11964) 15 atggggacctgtgacattgtgactgaagccaatatctcatctggccctgagagcaacaccacgggcatcacagccttctc catgcccagctggcagctggcactgtgggcaccagcctacctggccctggtgctggtggccgtgacgggtaatgccatcg gccctggcctcccctcagtgcttctactccaccgtcaccatggaccagggtgccaccaagtgcgtggtggcctggcccga agacageggggcaagacgeteeteetgtaceacetegtggtgategeeeteatetaetteetgeegetegeggtgatgt ttgtagcctacagcgtcatcggcctcacgctctggaggcgcagtgcccggacatcaggcgcacggtgccaacctccgc gcetteegetgetgecatgggteacacceaccaaggaagataagetegagetgaeteccacgacetecetecacgag agtcaacaggtgtcacactaaggagactttgttcatggctggggacacagccccctccgaggctaccagtggggaggcgg 30 (SBQ ID NO:11965) atggataacqtcctcccggtggactcagacctctccccaaacatctccactaacacctcggaacccaatcagttcgtgca accagcetggcaaattgtcctttgggcagctgcttacacggtcattgtggtgacctctgtggtgggcaacgtggtagtga tgtggatcatcttagcccacaaaagaatgaggacagtgacgaactattttctggtgaacctggccttcgcggaggcctcc atggctgcattcaatacagtggtgaacttcacctatgctgtccacaacgaatggtactacggcctgttctactgcaagtt 35 ccacaacttetteceeategeegettgettegeeagtatetaeteeatgaeggetgtggeetttgataggtaeatggeea tcatacatcccctccagccccggctgtcagccacaagccaccaaagtggtcatctgtgtcatctgggtcctggctctcctg ctggccttcccccagggctactactcaaccacagagaccatgcccagcagagtcgtgtgcatgatcgaatggccagagca tecgaacaagatttatgagaaagtgtaccacatetgtgtgactgtgctgatetacttectecceetgetggtgatttgget atgcatacaccatagtgggaatcacactatgggccagtgagatccccgggggactcctctgaccgctaccacgagcaagtc aggccacaccctcgtccctggacctgacctccaactgctcttcacgaagtgactccaagaccatgacagagagcttcagc 45 ttotcotccaatqtqctctcctaqqqatccctattqcaqtatctttcaqctttccaqtcttatctqaaqaccccggcacca aagtgaccaggaggcagaagaacttcagaggagtctcgtcttgggctgcccgtgggtgagtgggagggtccggggactg cagaccggtggcgatggccactctcccagcagcagaaacctggatagacgggggtggaggcgtgggtgcagacgccgtga acctgaccgcctcgctagctgccggggcgccacgggggcagttgagactgggtggctgcaactgctggaccaagctggc 50 aacctctcctcctcccttccgcgctgggactgcctgtggcttcccccgcgccctcccagccctgggccaacctcaccaa ccagttcgtgcagccgtcctggcgcatcgcgctctggtccctggcgtatggtggtggtggtggcagtttttgggaa atctcatcgtcatctggatcatcctggcccacaagcgcatgaggactgtcaccaactacttccttgtgaacctggctttc tecgacgeetecatggeegeetteaacacgttggteaattteatetacgegetteatagegagtggtactttggegeeaa ctactgccgcttccagaacttctttcctatcacagctgtgttcgccagcatctactccatgacggccattgcggtggaca 55 ggtatatggctattattgatcccttgaaacccagactgtctgctacagcaaccaagattgtcattggaagtatttggatt ctagcattictacttgccttccctcagtgtctttattccaaaaccaaagtcatgccaggccgtactctctgctttgtgca atggccagaaggtcccaaacaatttcacttaccatattatcgtcattatactggtgtactgtttcccattgctcatca tatttacttcattctcactgcaatctatcaacaactaaatagatggaaatacatccagcaggtctacctggctagctttt ggctggcaatgagctcaaccatgtacaatcccatcatctactgctgtctgaataaaagatttcgagctggcttcaagaga gcatttcgctggtgtcctttcatcaaagtttccagctatgatgagctagagctcaagaccaccaggtttcatccaaaccg gcaaagcagtatgtacaccgtgaccagaatggagtccatgacagtcgtgtttgacccaacgatgcagacaccaccaggt ccagtcggaagaaaagagcaacgccaagagacccaagtttcaatggctgctctcgcaggaattccaaatctgcctccgcc acttcaagtttcataagctcaccctatacctctgtggatgaatattcttaattccatttcctgaggtaaaagattagtgt 65 gagaccatcatggtgccagtctaggaccccattctcctatttatcagtcctgtcctatataccctctagaaacagaaagc aatttttaggcagctatggtcaaattgagaaaggtagtgtataaatgtgacaaagacactaataacatgttagcctccac ccaaaataaaatgggctttaaatttatggggacctgtgacattgtgactgaagccaatatctcatctggccctgagagca acaccacqqqcatcacagccttctccatgcccagctggcagctggcactgtggcaccagcctacctggccctggtgctg 70 gtggccgtgacgggtaatgccatcgtcatctggatcatcctggcccatcggaggatgcgcacagtcaccaactacttcat ggtactttggccgtgccttctgctacttccagaacctcttccccatcacagccatgtttgtcagcatctactccatgacc gccattgctgccgacaggtacatggccatcgtccaccccttccagcctcggctttcagctcccagcaccaaggcggttat tgctggcatctggctggtggctctcgccctggcctcccctcagtgcttctactccaccgtcaccatggaccagggtgcca 75 ccaagtgcgtggtggcctggcccgaagacagcgggggcaagacgtcctcctgtaccacctcgtggtgatcgcctcatc tacttcctgccgctcgcggtgatgtttgtagcctacagcgtcatcggcctcacgctctggaggcgcgcagtgcccggaca tcaggcgcacggtgccaacctccgccatctgcaggccaagaagaagtttgtgaagaccatggtgctggtggtgctgacgt ttgccatctgctgctgccctaccacctctacttcatcctgggcagcttccaggaggacatctactgccacaagttcatc cagcaagtetacetggcactettetggttggccatgagetetaceatgtacaateccatetetactgetgtetcaacca

caaaactcatgttgaaatttga (SEQ ID NO:11966) ctccataaggcacaaactttcagagacagcagagcacacaagcttctaggacaagagccaggaagaaaccaccggaagga accatctcactgtgtgtaaacatgacttccaagctggccgtggctctctttggcagccttcctgatttctgcagctctgtg tgaaggtgcagttttgccaaggagtgctaaagaacttagatgtcagtgcataaagacatactccaaacctttccaccca aatttatcaaagaactgagagtgattgagagtggaccacactgcgccaacacagaaattattgtaaagctttctgatgga agagagetetgtetggaeeeeaaggaaaaetgggtgeagagggttgtgagaagtttttgaagagggetgagaatteata aaaaaattcattctctgtggtatccaagaatcagtgaagatgccagtgaaacttcaagcaaatctacttcaacacttcat gtattgtgtgggtctgttgtagggttgccagatgcaatacaagattcctggttaaatttgaatttcagtaaacaatgaat 10 ataatttttaaatataaggattttcctagatattgcacgggagaatatacaaatagcaaaattgggccaagggccaagag aatatccgaactttaatttcaggaattgaatgggtttgctagaatgtgatatttgaagcatcacataaaaatgatgggac ccaggatccacaagtccttgttccactgtgccttggtttctcctttatttctaagtggaaaaagtattagccaccatctt acctcacagtgatgttgtgaggacatgtggaagcactttaagttttttcatcataacataaattattttcaagtgtaact 15 tattaacctatttattattatgtatttatttaagcatcaaatatttgtgcaagaatttggaaaaatagaagatgaatca atcagggtttttagattaaacaaacaaattgggtacccagttaaattttcatttcagatatacaacaataattttt tagtataagtacattattgtttatctgaaattttaattgaactaacaatcctagtttgatactcccagtcttgtcattgc cagctgtgttggtagtgctgtgttgaattacggaataatgagttagaactattaaaacagccaaaactccacagtcaata 20 ttagtaattteetgetggttgaaacttgtttattattatgtacaaatagattettataatattattaaaatgactgeatttt aaatacaaggetttatatttttaaetttaaaaaaaaeegg (SEQ ID NO:11967) gaattetetetecageageeetgeeagatgeeegeeeageeeetgeeteaggegggagggetteagggaageteaeeaa 25 30 agtccctcaggtctaggttttggcaggttttggcaaaaacacagcaacgctcggttaaatctgaattttcgggtaagtatatc ctgggcctcatttggaagagacttagattaaaaaaaaacgtcgagaccagccggccaacacggtgaaaccccgtctct cacccgaggtcagatgttcaagaccagcctggccgacagggcgaaacactgtctctactacaaatacaaaaattagccgg 35 gagtggtggcaggtgcctgtaatctcagctattcaggaggctgaggcaggagatcacttgaacctgggaggcggaggtt acccacattgattatctgacatttgaatgegattgtgcatectgaattttgtctggaggeeecaceegageeaateeage 40 agttttattetgagttattattagtttgggtttggattetggcttgttettttagttgttgtttgttattetet tettttgagcettaatttetteateagtaaaaagtaatatteaceteetagggttgtgggaggaggagaataagaaetteta aagtacecgaacetagcaactaggacactatatttgcaggcaagatgaagagggttggggaagtaataggaaccaa aategagagccataatagtetetetttaettagtgecagtgcaggcetgtgattetgttettaaaaaacgtetggggcaag etgcaggaaggacccgagatagettatgttetaccataagcettaagggaggaggactccaggcagggagacttaccatg 45 cgctgcctctagagttgttcaggtggaaattggaaggctatagaggaattcggcagcatacagtggctcacgtctgtaat ccaaaatccaagcattttggaaggccaaagtaggaggatcacttaagcccaggagtttaagaccagcctaggcaaccgag 50 tgagatccatctccactaaaaaattttaaaatttgccaggtatggtggtgtgcacctgtagccccagctactcaggagag tcagagaatcggcgcaccccggagttcgaggttgcagtgagccatgatcacgccactgtactccagcctgggtgacagag attttagaaggcggaggcagcggatcacctgaggtcaggagttcgggaccagcctgaccaacgtggtgaaaccccaactc tactaaaaatacataaattaggcggggcgtggtggtggccgcctgtaatcccagctactcggtaggctgcagcaggagaa tggtttgaacccgggaggcagaggttgcagtgagccaaaatcccctcactgcattccagcctgagactaaaaaaagagg cgatttcccacatcggtggaaatttgagctgtttaaactctggatgcctttttcagttctaatattccagatctccttgg tggataaacacttcatttcccttctcctgagcagagctcctgagccctggcccgctggaacctgtcacttctaaaaaagt 60 cgagtcgctccgggttggctgccaggtccaggttaaactttcagccaatgaaaaagggcgcgagggctgacgcacggaa 65 ggtgcactggtgcctgcacccacacccttcacgcacaaactcaagatacgctcacccgtgtctgtacatcaagacaggcg 70 ctgacacacacacacactgagaagctcgggattcacctatctacacacatgctcgcttgcacactcatgttgacgccatg gacacacaacatgcaaccaagcactacagccgaaacacattgtggagctgtgatggagacacactcttgtattaggtgg ggggggggggggagcgtgcagagatctccctgtcgcctgcgcccagaaccggtgcggtgtgggaccagctgctgttgt gaggtttgggagagagagaaaaagagcccactccgaggaggagacacttttcccgcagccccagaatcgcgttctcgggg cagaaccccggggcctcccacaggaaagagcccgcctacaggctgttcgaaggggaggccgtccgacagcaggaatgtc 75 ggagcgggaggcggacttggccccagactgccagcctcctcccggccgtgaaagaccctcctgttccctgccctggaggg aggagggggcttaacccaccggggcttcccggattctcctagacctctgcccgctgaaaagcagcgggacgccgtagact teccettggtattttcgggactttectaagetgetetaaettteetgeeeetteeegecaageeeaacteeggateteg ctctccaccggatctcacccgccacacccggacaggcggctggaggtcggaccctcccccaaatctgggcccccatt gaagcagaacctggccggagccactagacagagccgggcctagcccagagacatggagagttgctacaacccagtgagtc

tgggtctgaggaggagggggggtgaccactgaagacttggaagatgggaggtggggctagtgtgggggtgctgagagt cggatgccaccccagtctgtctccaaaccagggtctggatggtattattgaatatgatgatttcaaattgaactcctcc agcatgtgeeetetetetgggggaggggtetgggagategtgtgeteageaaggtetetetgteeeeagetgatggeee aatggggtagtgtagctggctggcatggaggagcattgccgaagaggcccacaggggattggatggtcactgctgctgat cagagtgctgtagttttggttcagggctactaccagcgactcgggtcactgctggcctgggtcgttccctgatcacaa tgctactatgcccttgaccttcagagaggcttccgatttcgatatggctgtgaaggcccctcccatggaggactgcccgg tgcctccagtgagaagggccgaaagacctatcccactgtcaaggtgakccaggatggtgtgtggmgggtgggctaagtgga cagcatgcccaaggccctgacgtgacagtcccttgcctctcctagatctgtaactacgagggaccagccaagatcgaggt gegeegtttetgtggggeeeaaggaeatgaetgeeeagtaggtgeeettettaegeettggeeeeeactggtatgeeskt cwtgccagtcccaggccccagccacctccatatgatgttagcatctgaccaaggggaaangatgtaggttggccccaaac ccaagggcctaagtagaaactccaatggcttccttgaggaagtaaggctgagctgagcctggcaatgggaaaggtgcctg gcaatgggaaaggtgcctcaggaagaactgcatggccaaaggctcccgattctctcttctcagatttaacaacctg ggtgtcctgcatgtgactaagaagaacatgatggggactatgatacaaaaacttcagaggcagcggctccgctctaggcc 20 cctggtsgsagaggtggcatgaggtgacctcaagctgtgcagtcaaacaagacccaggtttcagaacctgcsctgccacatgtsgtgagtgatcctgaggagtgacctgagcaagtcatttcccccc (SEQ ID NO:11969) 25 ctcggcctgcacgcaccggccccgctcccggagcccagcgccgaggccgcagccgccggccagtaaggcggc gccgcccgcggccaccgcgggccctgccgttccctccgccgcgctgcgcatggcgcggcgctgactggcctggcccggc cggcaggcccgccgcttaggagggagagcccacccgcgccaggaggccgaacgcggactcgccacccggcttcagaatg 30 gcagaagatgatccatatttgggaaggcctgaacaaatgtttcatttggatccttctttgactcatacaatatttaatcc agaagtatttcaaccacagatggcactgccaacagatggcccataccttcaaatattagagcaacctaaacagagaggat ttcgtttccgttatgtatgtgaaggcccatcccatggtggactacctggtgcctctagtgaaaagaacaagaagtcttac cctcaggtcaaaatctgcaactatgtgggaccagcaaaggttattgttcagttggtcacaaatggaaaaaatatccacct gcatgcccacagcctggtgggaaaccactgtgaggatgggatctgcactgtaactgctggacccaaggacatggtggtcg 35 gcttcgcaaacctgggtatacttcatgtgacaaagaaaaaagtatttgaaacactggaagcacgaatgacagaggcgtgt ataaggggctataatcctggactcttggtgcaccctgaccttgcctatttgcaagcagaaggtggaggggaccggcagct gggagatcgggaaaaagagctaatccgccaagcagctctgcagcagaccaaggagatggacctcagcgtggtgcggctca 40 aaggatttggagatttttcccccacagatgttcatagacaatttgccattgtcttcaaaactccaaagtataaagatatt aatattacaaaaccagcctctgtgtttgtccagcttcggaggaaatctgacttggaaactagtgaaccaaaacctttcct ctactatcctgaaatcaaagataaagaagtgcagaggaaacgtcagaagctcatgcccaatttttcggatagtttcg gcggtggtagtggtgccggagctggaggcggaggcatgtttggtagtggcggtggaggagggggcactggaagtacaggt ccagggtatagcttcccacactatggatttcctacttatggtgggattactttccatcctggaactactaaatctaatgc tgggatgaagcatggaaccatggacactgaatctaaaaaggaccctgaaggttgtgacaaaagtgatgacaaaaacactg taaacctctttgggaaagttattgaaaccacagagcaagatcaggagcccagcgaggccaccgttgggaatggtgaggtc actetaacgtatgeaacaggaacaaaagaagagtgetggagtteaggataacetetttetagagaaaggetatgeaget tgcaaagaggcatgccaatgcccttttcgactacgcggtgacaggagacgtgaagatgctgctgccgtccagcgccatc 50 tcactgctgtgcaggatgagaatggggacagtgtcttacacttagcaatcatccaccttcattctcaacttgtgagggat ctactagaagtcacatctggtttgatttctgatgacattatcaacatgagaaatgatctgtaccagacgcccttgcactt ggcagtgatcactaagcaggaagatgtggtggaggatttgctgagggctggggccgacctgagccttctggaccgcttgg gtaactetgttttgeacetagetgeeaaaggacatgataaagtteteagtatettaeteaageacaaaaaggeagea ctacttcttgaccaccccaacggggacggtctgaatgccattcatctagccatgatgagcaatagcctgccatgtttgct getgetggtggccgetgggggetgacgtcaatgetcaggagcagaagtccggggcgcacagcactgcacctggetgtggagc ttactagcacaaggagacatgaaacagctggctgaagatgtgaagctgcagctgtattagttactagaaattcctgatcc agacaaaaactgggctactctggcgcagaaattaggtctggggatacttaataatgccttccggctgagtcctgctcctt 60 ccaaaacacttatggacaactatgaggtctctgggggtacagtcagagaggtggtggaggccctgagacaaatgggctacaccgaagcaattgaagtgatccaggcagcctccagcccagtgaagaccacctctcaggccactcgctgctctctcgcc tgcctccacaaggcagcaatagacgagctccgagacagtgacagtgtctgcgacacgggcgtggagacatccttccgca 65 aactcagctttaccgagtctctgaccagtggtgcctcactgctaactctcaacaaaatgccccatgattatgggcaggaa ggacctctagaaggcaaaatttagcctgctgacaatttcccacaccgtgtaaaccaaagccctaaaattccactgcgttg tccacaagacagaagctgaagtgcatccaaaggtgctcagagagccggcccgcctgaatcattctcgatttaactcgaga ccttttcaactiggcttcctttcttggttcataaatgaattttagtttggttcacttacagatagtatctagcaatcaca acactggctgagcggatgcatctggggatgaggttgcttactaagctttgccagctgctgctggatcacagctgctttct 70 gttgtcattgctgttgtccctctgc (SEQ ID NO:11970) actitectgeceetteceeggecaageeeaacteeggatetegetetecaeeggateteaceegeeeacaeeeggacagge ggctggaggaggcggcgtctaaaattctgggaagcagaacctggccggagccactagacagagccgggcctagcccaga gacatggagagttgctacaacccaggtctggatggtattattgaatatgatgattcaaattgaactcctccattgtgga acccaaggagccagccccagaaacagctgatggcccctacctggtgatcgtggaacagcctaagcagagaggcttccgat ttcgatatggctgtgaaggcccctcccatggaggactgcccggtgcctccagtgagaagggccgaaagacctatcccact gtcaagatetgtaaetaegaggaeeageeaagategaggtggaeetggtaaeaeagatgaeeeaeetegtgeteatgeeeaegeegtetgtggggeeaageaatgetegggggatetgegeegtttetgtggggeeeaaggaeatgaetgeeeaat ttaacaacctgggtgtcctgcatgtgactaagaagaacatgatggggactatgatacaaaacttcagaggcagcggctc 80 cctcccagcccatccatgatagcaaatctccgggggcatcaaacctgaagatttctcgaatggacaagacaggctct gtgcggggtggagatgaagtttatctgctttgtgacaaggtgcagaaagatgacattgaggttcggttctatgaggatga

tgagaatggatggcaggcctttggggacttctctcccacagatgtgcataaacagtatgccattgtgttccggacacccc cctatcacaagatgaagattgagcggcctgtaacagtgtttctgcaactgaaacgcaagcgagggggacgtgtctgat tccaaacagttcacctattaccctctggtggaagacaaggaagaggtgcagcggaagcggaaggccttgcccacctt ctcccagcccttcgggggtggctcccacatgggtggaggctctgggggtgcagccgggggctacggaggagctggaggag gtgaggggtactgatggagggaggggtaaaggtaagagaagctgtggaggaaaaaaatctgggggaggccgggcgtggc ttgcacgcctgtaatccagcctttgggaggccaaggcagttacctgagatcaggagttcaagaccagcttggccaa cagcgtgaaacctcgtctctactaaaaatacaaacattagctgggcatggtggcaggcgctgtaatcccagctactcgg gaggctgaggcaggagaatcgcttgaaccctgggagacaagaggttgcagtaagctgagatcacaccactgcactccagg cacggtgagtggctggattcagacccctgggtggccgggacaagagaaaaagaggaggaggaggaggacatttagcggacagcgcc tggggctggagagcagcagctgcacacagccggaaagggcgcgcaggcgacgacactcggatccacgtcgacaccgttgt acaaagatacgcggacccgcgggcgtctaaaattctgggaagcagaacctggccggagccactagacagagccgggccta gcccagagacatggagagttgctacaacccaggtctggatggtattattgaatatgatgatttcaaattgaactcctcca ttgtggaacccaaggagccagcccagaaacagctgatggcccctacctggtgatcgtggaacagcctaagcagagaggc ttccgatttcgatatggctgtgaaggcccctcccatggaggactgcccggtgcctccagtgagaagggccgaaagaccta teccactgteaagatetgtaactacgagggaccagecaagategaggtggacetggtaacacacaagtgacccacetegtg ctcatgcccacagtctggtgggcaagcaatgctcggagctggggatctgcgcgtttctgtggggcccaaggacatgact gcccaatttaacaacctgggtgtcctgcatgtgactaaggagaacatgatggggactatgatacaaaaacttcagaggca gcggctccgctctaggccccagggccttacggaggccgagcagcgggagctggagcaagaggccaaagaactgaagaagg 25 ctacccgggaggcgggggcggggcgcagatggccgcacggtgcccagcagggactccggggaggaagccgcgggagccgcgcccctccaggacccccagtgcgacgcgcaggccccggagatgctgcagcgagctcgagagtacaacgcgcgcctg 30 gegecacetgetgaeggegeaggaegagaaeggagaeacaceaetgeaectagecateatecaegggeagaecagtgtea ttgagcagatagtetatgtcatccaccacgcccaggacetcggcgttgtcaacctcaccaaccacctgcaccagacgccc ctgcacctggcggtgatcacggggcagacgagtgtggtgagctttctgctgcgggtaggtgcagacccagctctgctgga teggcatggagactcagccatgcatetggegetgegggcaggcetggtgctectgagetgctgctgcgtgcactgcttcaga gtggagctcctgctgttgccccagctgttgcatatgcctgactttgagggactgtatccagtacacctggcggtccgagcc cgaagccctgagtgcctggatctgctggtggacagtggggctgaagtggaggccacagagcggcagggggacgaacagc cttgcatctagccacagagatggaggagctggggttggtcacccatctggtcaccaagctccgggccaacgtgaacgctc gcacctttgcgggaaacacacccctgcacctggcagctggactggggtacccgaccctcacccgcctccttctgaaggct ggtgctgacatccatgctgaaaacgaggagcccctgtgcccactgccttcaccccctacctctgatagcgactcggactc tgaagggcctgagaaggacacccgaagcagcttccggggccacacgcctcttgacctcacttgcagcaccaaggtgaaga cctgccccagccccttcccggacccctgtacagcgtcccacctatttcaaatcttatttaacaccccacacccacc agetteateetggagteaacagattgggtttgaateetggetetgteeetttetagetgtgtgtttggttgttacteeac ctctctgagccttaatttcttcatcagtaaaagtaatattcacctcctagggttgttggggaggagaataagaacttcta aagtacccgaacctagcaactaggacactatatttgcaggcaagatgaagaggggtggggaagtaataggaaacagccca aatcgagagccataatagtctctctttacttagtgccagtgcaggcctgtgattctgttcttaaaaacgtctggggcaag cgctgcctctagagttgttcaggtggaaattggaaggctatagaggaattcggcagcatacagtggctcacgtctgtaat ccaaaatccaagcattttggaaggccaaagtaggaggatcacttaagcccaggagtttaagaccagcctaggcaaccgag tgagatccatctccactaaaaaattttaaaatttgccaggtatggtgtgtgcacctgtagccccagctactcaggagag tcagagaatcggcgcaccccggagttcgaggttgcagtgagccatgatcacgccactgtactccagcctgggtgacagag attttagaaggcggagcagcggatcacctgaggtcaggagttcgggaccagcctgaccaacgtggtgaaaccccaactc tactaaaaatacataaattaggcggggcgtggtggtggtcggcctgtaatcccagctactcggtaggctgcagcaggagaa tggtttgaacccgggaggcagaggttgcagtgagccaaaatcccctcactgcattccagcctgagactaaaaaaagagg 65 cgttagcgcagccaaagccggaggcagcgaagctccggcccggggtggcgctgggtcagggtaccttctcggcggtcccc 70 cgagtcgctccgggttggctgccaggtccagagttaaactttcagccaatgaaaaagggcgcgagggctgacgcacggaa acgteatgggaattecccctccggggggccgagaaggggctttcccggccctgagccctgctgcaggcgaggtgtcgc gaccggtcccaggtgggtcgggcgcggagagaagccgcaaccagagccgccacggtgagtggctggattcagacccc tgggtggccgggacaagagaaaagagggaggaggaggctttagcggacagcgcctggggctggagagcagcagctgcacac 75 cctgtacctgtgctggcgcacacacggcagcgtccgtgcagtcgcactcgcacacatgcacacggagacgtgcccacc ggtgcactggtgcctgcacccacacccttcacgcacaactcaagatacgctcacccgtgtctgtacatcaagacaggcg ctgacacacacccacactgagaagetegggatteacetatetacacacatgetegettgcacacteatgttgacgecatg gacacacaacatgcaaccaagcactacagccgaaacacttgtggagctgtgatggagacacactcttgtattaggtgg ggggggggggggagcgtgcagagatctccctgtcgcctgcgcgcccagaaccggtgcggtgtgggaccagctgctgttgt gaggtttgggagagagagaaaaagagcccactccgaggaggagacacttttcccgcagccccagaatcgcgttctcgggg cagaaccccggggcctcccacaggaaagagccccgcctacaggctgttcgaaggggaggccgtccgacagcaggaatgtc

ggaggggggggacttggcccagactgccagcctcctcccggccgtgaaagaccctcctgttccctgccctggaggg aggagggggcttaacccaccggggcttcccggattctcctagacctctgcccgctgaaaagcagcgggacgccgtagact teccettggtattttegggaetttectaagetgetetaaettteetgeeeetteeeegeeaageeeaaeteeggateteg ctctccaccggatctcacccgccacacccggacaggcggctggaggatggaccctccccaaatctgggcccccatt gaagcagaacctggccggagccactagacagagccgggcctagcccagagacatggagagttgctacaacccagtgagtc 10 tgggtctgaggaggagggggagtgacactgaagacttggaagatgggaggtggggctagtgggggtgctgagagt cggatgccaccccagtctgtctccaaaccagggtctggatggtattattgaatatgatgatttcaaattgaactcctcc attgtggaacccaaggagccagcccagaaacaggtcagcaagttcactaacctcccctagtctaaagcgggggaggag agcatgtgccctctctctgggggaggggtctgggagatcgtgtgtccagcaaggtctctctgtccccagctgatggcccc 15 aatggggtagtgtagctggctggcatggaggagcattgccgaagaggcccacaggggattggatggtcactgctgctgat cagagtgctgtagttttggttcagggctactaccagcgactcgggtcactgctgggtcgtcttccctgatcacaa tgctactatgcccttgaccttcagagaggcttccgatttcgatatggctgtgaaggcccctcccatggaggactgcccgg tgcctccagtgagaagggccgaaagacctatcccactgtcaaggtgakccaggatggtgctggmgggtgggctaagtgga cagcatgcccaaggccctgacgtgacagtcccttgcctctcctagatctgtaactacgagggaccagccaagatcgaggt cwtgccagtcccaggccccagccacctccatatgatgttagcatctgaccaaggggaaangatgtaggttggcccaaac ccaaqqqcctaaqtaqaaactccaatggcttccttgaggaagtaaggctgagctgagcctggcaatgggaaaggtgcctg ggtgtcctgcatgtgactaagaagaacatgatggggactatgatacaaaaacttcagaggcagcggctccgctctaggcc 30 cctggtsgsagaggtggcatgaggggtgacctcaagctgtgcagtcaaacaagacccaggtttcagaacctgcsctgcca catatgagctgagtgatcctgagcaagtcatttcccccccggccaccggagcggcccggcgacgatcgctgacagcttcc cctgcccttcccgtcggtcgggccgccagccgccgccgcctggcctgcacgcagccaccggcccgctcccggagccc gcgctgcgcatggcgcggcgctgactggcctggcccggcccgccgcgctcccgctcgcccgacccgacccgacccgaccc 35 caggaggccgaacgcggactcgccacccggcttcagaatggcagaagatgatccatatttgggaaggcctgaacaaatgt ttcatttggatccttctttgactcatacaatatttaatccagaagtatttcaaccacagatggcactgccaacagatggc actacctggtgcctctagtgaaaagaacaagaagtcttaccctcaggtcaaaatctgcaactatgtgggaccagcaaaagg ttattgttcagttggtcacaaatggaaaaaatatccacctgcatgcccacagcctggtgggaaaacactgtgaggatggg atctgcactgtaactgctggacccaaggacatggtggtcggcttcgcaaacctgggtatacttcatgtgacaaagaaaaa 45 tqqacaqqacaqctggatgtgtqactggaggggaggaaatttatcttctttgtgacaaagttcagaaagatgacatccag attcgattttatgaagaggaagaaaatggtggagtctgggaaggatttggagatttttcccccacagatgttcatagaca atttgccattgtcttcaaaactccaaagtataaagatattaatattacaaaaccagcctctgtgtttgtccagcttcgga ggaaatctgacttggaaactagtgaaccaaaacctttcctctactatcctgaaatcaaagataaagaagtgcagagg 50 aaacgtcagaagctcatgcccaatttttcggatagtttcggcggtggtagtggccggagctggaggcggaggcatgtt tggtagtggcggtggaggagggggcactggaagtacaggtccagggtatagcttcccacactatggatttcctacttatg gtgggattactttccatcctggaactactaaatctaatgctgggatgaagcatggaaccatggacactgaatctaaaaag gaccctgaaggttgtgacaaaagtgatgacaaaaacactgtaaacctctttgggaaagttattgaaaccacagagcaaga tcaggagcccagcgaggccaccgttgggaatggtgaggtcactctaacgtatgcaacaggaacaaaagaagagagtgctg 55 gagttcaggataacctctttctagagaaggctatgcagcttgcaaagaggcatgccaatgcccttttcgactacgcggtg acaggagacgtgaagatgctgctggccgtccagcgccatctcactgctgtgcaggatgagaatggggacagtgtcttaca cttagcaatcatccaccttcattctcaacttgtgagggatctactagaagtcacatctggtttgatttctgatgacatta tcaacatgagaaatgatctgtaccagacgccttgcacttggcagtgatcactaagcaggaagatgtgtggtggaggatttg ctgagggctgggccgacctgagccttctggaccgcttgggtaactctgttttgcacctagctgccaaaggacatga taaagtteteagtatettaeteaageacaaaaaggeageactaettettgaecaececaaeggggaeggtetgaatgeea ttcatctagccatgatgagcaatagcctgccatgtttgctgctgctggtggccgctgggggctgacgtcaatgctcaggag tgatgcccatgtggacagtactacctacgatggaaccacacccctgcatatagcagctgggagagggtccaccaggctgg cagctcttctcaaagcagcaggagcagatcccctggtggagaactttgagcctctctatgacctggatgactcttgggaa 65 aatqcaqqaqatqaaqqaqttgtgcctgqaaccacqcttctaqatatqqccaccaqctqqcaqqtatttqacatatt tqaagctgcagctgtataagttactagaaattcctgatccagacaaaaactgggctactctggcgcagaaattaggtctg gggatacttaataatgccttccggctgagtcctgctccttccaaaacacttatggacaactatgaggtctctgggggtac aqtcagagagctggtggaggccttgagacaaatgggctacaccgaagcaattgaagtgatccaggcagcctccagcccag 70 tgaagaccacctetcaggcccactegetgeetetetegeetgeetecacaaggcagcaaatagacgageteegagacagt gacagtgtetgcgacacgggcgtggagacatccttccgcaaactcagctttaccgagtctctgaccagtggtgcctcact cacaccgtgtaaaccaaagccctaaaattccactgcgttgtccacaagacagaagctgaagtgcatccaaaggtgctcag agagccggcccgcctgaatcattctcgatttaactcgagaccttttcaacttggcttcctttcttggttcataaatgaat 75 tttagtttggttcacttacagatagtatctagcaatcacacactggctgagcggatgcatctggggatgaggttgctta ctaagctttgccagctgctgctggatcacagctgctttctgttgtcattgctgttgtccctctgcactttcctgcccctt ccccggccaagcccaactccggatctcgctctccaccggatctcacccgcacacccggacaggcggctggaggaggcgg gcgtctaaaattctgggaagcagaacctggccggagccactagacagagccgggcctagcccagagacatggagagttgc tacaacccaggtctggatggtattattgaatatgatgatttcaaattgaactcctccattgtggaacccaaggagccagc cccagaaacagctgatggcccctacctggtgatcgtggaacagcctaagcagagaggcttccgatttcgatatggctgtg aaggcccctcccatggaggactgcccggtgcctccagtgagaagggccgaaagacctatcccactgtcaagatctgtaactacgagggaccagccaagatcggggacctggtaacacacagtgacccacctcgtgtgaggtggggaccagccacagtctggtggg

caagcaatgctcggagctggggatctgcgccgtttctgtggggcccaaggacatgactgcccaatttaacaacctgggtg tcctgcatgtgactaagaagaacatgatggggactatgatacaaaaacttcagaggcagcggctccgctctaggccccag ggccttacggaggccgagcagcgggagctggagcaagaggccaaagaactgaagaaggtgatggatctgagtatagtgcg gctgegettetetgeetteettagageeagtgatggeteetteteeetgeeeetgaageeagteaeeteeeageeeatee atgatagcaaatotoogggggcatcaaacotgaagatttotogaatggacaagacagcaggctotgtgoggggtggagat ggcctttggggacttctctcccacagatgtgcataaacagtatgccattgtgttccggacacccccctatcacaagatga agattgageggeetgtaacagtgtttetgcaactgaaacgcaagegaggagggaegtgtetgattecaaacagttcacc tattaccctctggtggaagacaaggaagaggtgcagcggaagcggaaggccttgcccaccttctcccagcccttcgg 10 gggtggctcccacatgggtggaggctctgggggtgcagccgggggctacggaggagctggaggaggtgagggggtactga tggaggagggtaaaggtaagagaagctgtggaggaaaaaaatctgggggaggccgggcgtggcttgcacgcctgtaat ccagcctttgggaggccaaggcaggtacctgagatcaggagttcaagaccagcttggccaacagcgtgaaacctcg tetetaetaaaaatacaaaeattagetgggeatggtggcaggegeetgtaateeeagetaetegggaaggetgaggeagga gaatogottgaaccotgggagacaagaggttgcagtaagotgagatcacaccactgcactccaggotgggcaataagago 15 gaaactccgtctcaaaaaaaaaaaaaaaaaaaaaaacacggtgagtgggctggattcagacccctgggtggccgggacaaga ggcgacgacactcggatccacgtcgacaccgttgtacaaagatacgcggacccgcgggcgtctaaaattctgggaagcag aacctggccggagccactagacagagccgggcctagcccagagacatggagagttgctacaacccaggtctggatggtat 20 tctgcgccgtttctgtggggcccaaggacatgactgcccaatttaacaacctgggtgtcctgcatgtgactaaggagaac atgatggggactatgatacaaaaacttcagaggcagcggctccgctctaggccccagggccttacggaggccgagcagcg 25 ggagctggagcaagaggccaaagaactgaagaaggtgatggatctgagtatagtgcggctgcgcttctctgccttc gaqccaqtqatqqctccttctccctqcccctgaaqccaqtcatctcccagcccatccatgacagcaaatctccgggggca tcaaacctgaagatttctcgaatggacaagacagcaggctctgtgcggggtggagatgaagtttatctgctttgtgacaa cagatgtgcataaacagtatgccattgtgttccggacacccccctatcacaagatgaagattgagcggcctgtaacagtg 30 tttctgcaactgaaacgcaagcgagggggaggggacgtgtctgattccaaacagttcacctattaccctctggtggaagacaa ggaagaggtgcagcggaagcggaaggccttgcccaccttctccccagcccttcgggggtggctcccacatgggtggag gctctgggggtgcagccgggggctacggaggagctggaggtggcagcctcggtttcttcccctcctcctggcctac cagcagggactccggggaggaagccgcgggagccgcggggcgcccctccaggacccccagtgcgacgcgcaggccccggaga 35 tgctgcagcgagctcgagagtacaacgcgcgcctgttcggcctggcgcagcgcagcgcccgagccctactcgactacggc gtcaccgcggaccgggggggggcggggacagcgcacctgctgacggcgcaggacgagaacgggagacacaccact gcacctagccatcatccacgggcagaccagtgtcattgagcagatagtctatgtcatccaccacgcccaggacctcggcg ttgtcaacctcaccaaccacctgcaccagacgccctgcacctggcggtgatcacgggggcagacgagtgtggtgagcttt ctgctgcgggtaggtgcagacccagctctgctggatcggcatggagactcagccatgcatctggcgctgcggcaggcgc tggtgctcctgagctgctgcgtgcactgcttcagagtggagctcctgctgtgccccagctgttgcatatgcctgactttg agggactgtatccagtacacctggcggtccgagcccgaagccctgagtgcctggatctgctggtggacagtggggctgaa gtggaggccacagagcggcagggggacgaacagccttgcatctagccacagagatggaggagctggggttggtcaccca tetggtcaccaagetecgggccaacgtgaacgetegcacetttgegggaaacacacccctgcacetggcagetggactgg ggtacccgaccctcacccgcctccttctgaaggctggtgctgacatccatgctgaaaacgaggagcccctgtgcccactg ccttcaccccctacctctgatagcgactcggactctgaagggcctgagaaggacacccgaagcagcttccggggccacac gcctcttgacctcacttgcagcaccaaggtgaagaccttgctgctaaatgctgctcagaacaccatggagccacccctga ccccgcccagccagcagggccgggactgtcacttggtgatacagctctgcagaacctggagcagctgctagacgggcca 50 agtgcgtacgggagccagtcagtggagcagaaggcagaagctgggcccacccctgagccaccaggagggctctgcca egggcaccccagcctcaggtgcactgacctgctgcctgcccccagcccccttcccggaccccctgtacagcgtccccac ctatttcaaatcttatttaacaccccacacccacccctcagttgggacaaataaaggattctcatgggaaggggaggacc 55 atgacagcaaaagattetteaaaggaaettaetgettetgaacetgaggtttgeataaagaettteaaggagcaaatgea tttagaacttgagettccgagattaccaggaaacagacctacateteetaaaattteteeacgcagttcaccaaggaact caccatgctttttcagaaagttactggtgaataaaagcattcggcagcgtcgttcgcttcactgtggctcatacatgcttt gatgtggaaaatggcccttccccaggtcggagtccactggatccccaggccagctcttccgctgggctggtacttcacgc cacettteetgggcacagecagegcagagagtcatttetetacagatcagacagegactatgactttgccatagacagegactattgactttgccaaggtgegagcaacaegggagcaacaeggcgatgacttgattgatagtcattttgcccaggtcettgccaggteettgcgaggtagtgtgagaaacaacttcattgacagacttcatggtacatctaacaagaggtccccagctgctagtca gcctcctgtctccagagtcaacccacaagaagaatcttatcaaaaattagcaatggaaacgctggaggaattagactggt gtttagaccagctagagaccatacagacctaccggtctgtcagtgagatggcttctaacaagttcaaaagaatgctgaaccgggagctgacacacctctcagagatgagccgatcaggggaaccaggtgtctgaatacatttcaaatactttcttagacaa 65 gtggagtgaagaaattaatgcatagttcaagcctaaacaatacaagcatctcacgctttggagtcaacactgaaaatgaa qatcacctggccaaqqaqctgqaaqacctqaacaaatggggtcttaacatctttaatgtggctggatattctcacaatag acccctaacatgcatcatgtatgctatattccaggaaagagacctcctaaagacattcagaatctcatctgacacattta taacctacatgatgactttagaaqaccattaccattctgacgtggcatatcacaacagcctgcacgctgctgatgtagcc 70 cagtcgacccatgttctcctttctacaccagcattagacgctgtcttcacagatttggagatcctggctgccatttttgc agctgccatccatgacgttgatcatcctggagtctccaatcagtttctcatcaacacaaattcagaacttgctttgatgt ataatgatgaatctgtgttggaaaatcatcaccttgctgtgggtttcaaactgctgcaagaagaacactgtgacatcttc atgaatctcaccaagaagcagcgtcagacactcaggaagatggttattgacatggtgttagcaactgatatgtctaaaca tatgagcctgctggcagacctgaagacaatggtagaaacgaagaaagttacaagttcaggcgttcttctcctagacaact 75 ataccgatcgcattcaggtccttcgcaacatggtacactgtgcagacctgagcaaccccaccaagtccttggaattgtat catgggcagatttggtacagcctgatgctcaggacattctcgataccttagaagataacaggaactggtatcagagcatg atacctcaaagtccctcaccaccactggacgagcagaacagggactgccagggtctgatggagaagtttcagtttgaact aca (SEQ ID NO:11974)

tatcacaacagcatgcacgcagccgatgttacccagacagtccattgcttcttgctccgcacagggatggtgcactgcct gtcggagattgagctcctggccatcatctttgctgcagctatccatgattatgagcacacgggcactaccaacagcttcc acatecagaceaagteagaatgtgeeategtgtacaatgategtteagtgetggagaateaceacateagetetgtttte cgattgatgcaggatgatgagatgaacattttcatcaacctcaccaaggatgagtttgtagaactccgagccctggtcat tgagatggtgttggctacagatatggca (SEQ ID NO:11975) atgacagcaaaagattetteaaaggaaettaetgettetgaaeetgaggtttgeataaagaettteaaggageaaatgea tttagaacttgagetteegagattaceaggaaacagacetacateteetaaaattteteeaegeagtteaecaaggaact caccatgctttttcagaaagttactggtgaataaaagcattcggcagcgtcgttcactgtggctcatacatgcttt gatgtggaaaatggcccttccccaggtcggagtccactggatccccaggccagctcttccgctgggctggtacttcacgc cacctttcctgggcacagccagcgcagagagtcatttctctacagatcagacgactatgacttgtcaccaaaggcga tgtcgagaaactcttctctccaagcgagcaacacggcgatgacttgattgtaactccttttgcccaggtccttgccagc ttgcgaagtgtgagaaacaacttcactatactgacaaaccttcatggtacatctaacaagaggtccccagctgctagtca gcctcctgtctccagagtcaacccacaagaagaatcttatcaaaaattagcaatggaaacgctggaggaattagactggt gtttagaccagctagagaccatacagacctaccggtctgtcagtgagatggcttctaacaagttcaaaagaatgctgaac 15 cgggagctgacacacctctcagagatgagccgatcagggaaccaggtgtctgaatacatttcaaatactttcagacaa gcagaatgatgtggagatcccatctcctacccagaaagacagggagaaaaagaaaagcagcagctcatgacccagataa gtggagtgaagaaattaatgcatagttcaagcctaaacaatacaagcatctcacgctttggagtcaacactgaaaatgaa gatcacctggccaaggagctggaagacctgaacaaatggggtcttaacatctttaatgtggctggatattctcacaatag acccctaacatgcatcatgtatgctatattccaggaaagagacctcctaaagacattcagaatctcatctgacacattta taacctacatgatgactttagaagaccattaccattctgacgtggcatatcacaacagcctgcacgctgctgatgtagcc cagtcgacccatgttctcctttctacaccagcattagacgctgtcttcacagattttggagatcctggctgccatttttgc agctgccatccatgacgttgatcatcctggagtctccaatcagtttctcatcaacacaaattcagaacttgctttgatgt ataatgatgaatctgtgttggaaaatcatcaccttgctgtgggtttcaaactgctgcaagaagaacactgtgacatcttc atgaatctcaccaagaagcagcgtcagacactcaggaagatggttattgacatggtgttagcaactgatatgtctaaaca 25 tatgagcctgctggcagacctgaagacaatggtagaaacgaagaaagttacaagttcaggcgttcttctccctagacaact ataccgatcgcattcaggtccttcgcaacatggtacactgtgcagacctgagcaaccccaccaagtccttggaattgtatcggcaatggacagaccgcatcatggaggaatttttccagcagggagacaaagagcgggagaggggaatgggaattagccc catgggcagatttggtacagcctgatgctcaggacattctcgataccttagaagataacaggaactggtatcagagcatg 30 atacctcaaagtccctcaccaccactggacgagcagaacagggactgccagggtctgatggagaagtttcagtttgaact gtgtgattgatccagaaaacagagattccctgggagagactgacatagacattgcaacagaagacaagtcccccgtggat acatatcacaacagcatgcacgcagccgatgttacccagacagtccattgcttcttgctccgcacagggatggtgcactg cctgtcggagattgagctcctggccatcatctttgctgcagctatccatgattatgagcacacgggcactaccaacagct 35 tccacatccagaccaagtcagaatgtgccatcgtgtacaatgatcgttcagtgctggagaatcaccacatcagctctgtt ttccgattgatgcaggatgatgagatgaacattttcatcaacctcaccaaggatgagttgtagaactccgagccctggt cattgagatggtgttggctacagatatggca (SEQ ID NO:11976) ctccagctctcagaccctcttcctcccaggtaaaggccgggagagggggcgcatctcttttccaggcaccccatcatgg gcaatgcctccaatgactcccagtctgaggactgcgagacgcgacagtggcttcccccaggcgaaagcccagccatcagc tccgtcatgttctcggccggggtgctggggaacctcatagcactggcgctgctggcggcgccgctggcggggggacgtggggggtgctgggggggacgtggtgcgcggcggcggcggacgaggacctcctccttgttccacgtgctggtgaccgagctggtgttcaccgacctgctcggga cctgcctcatcagccgcagtggtactggcttcttgtttcatagtgctggtgatcagtgtggtgtttactgatctggtggg tgcacctactactccagtggtactggcttcgtacgcgcggaaccagatgctcatgctgttgcactggcgccgagagccgcgcg tgcacctacttcgctttcgccatgaccttcttcagcctggccacqatgctcatgctcttcgccatggcctcggagcgcta cctctcgatcgggcacccctacttctaccagcgccgcgtctcggcctccgggggcctggccgtgctgcctgcctgtcatctatg cagtctccctgctcttctgctcgctgccgctgctggactatgggcagtacgtccagtactgcccgggacctggtgcttc 45 atcoggcacgggacggcttacctgcagctgtacgccaccctgctgcttctcattgtctcggtgctcgcctgcaa cttcagtgtcattctcaacctcatccgcatgcaccgccgaagccggagaagccgctgcggaccttccctgggcagtggcc 50 atgggacctccaagctcttaggtttttatcaattaattcaataattgacccttgggtctttgccatccttaggcctcctg ttctgagactaatgcgttcagtcctctgttgtcggatttcattaagaacacaagatgcaacacaaacttcctgttctaca cagtcagatgccagtaaacaggctgacctttgaggtcagtagtttaaaagttcttagttatatagcatctggaagatcat tttgaaattgttccctggagaaatgaaaacagtgtgtaaacaaaatgaagctgccctaataaaaaggagtatacaaacat ttaagetgtggtcaaggetacagatgtgetgacaaggeacttcatgtaaagtgtcagaaggagetacaaaacctacccte aatgagcatggtacttggcctttggaggaacaatcggctgcattgaagatccagctgcctattgatttaagctttcctgt tgaatgacaaagtatgtggttttgtaatttgtttgaaaccccaaacagtgactgtactttctattttaatcttgctacta ccgttatacacatatagtgtacagccagaccagattaaacttcatatgtaatctctaggaagtcaatatgtggaagcaac caagectgctgtcttgtgatcacttagcgaaccetttatttgaacaatgaagttgaaaatcataggcaccttttactgtg 60 atgtttgtgtatgtgggagtactctcatcactacagtattactcttacaagagtggactcagtgggttaacatcagtttt aagactttaggaatggttctctcaacaagaaataatagaaatgtctcaaggcagttaattctcattaatactcttattat 65 tcttaatatatttctaaatgtttggcatgtaaatgtaaactcagcatcaaaatatttcagtgaatttgcactgtttaatc ataqttactgtgtaaactcatctgaaatgttacaaaaaataaactataaaaca (SEQ ID NO:11977) gggggcggcaggcaggctgagcggccggtgatggggaccccacatcccaggcagtgccggcacccctggcgcctgacatgagc ccttgcgggcccctcaacctgagcctggcgggcgaggcgaccacatgcgcggcgccctgggtccccaacacgtcggccgt 70 gccgccgtcgggcgcttcgcccgcgctgcccatcttctccatgacgctgggcgccgtgtccaacctgctggcgctggcgc tgctggcgcaggccgccggcctgcgacgccgccgccgccgccaccattcctgctgttcgtggccagcctgctggcc ctgccacttcctgggcggctgcatggtcttcttcggcctgtgcccgctgctgctggggctgtgggaatggcgttggagcgct 75 gcggtggccttggccgtggcgctgctgccgctggcgcgcgtgggccgctatgagctgcagtaccggggcacgtggtgctt cgcttcggcctccaccttctttggcggctctcggagcagcggctcggcacgcagagctcgcgcccacgacgtggagatgg tgggccagcttgtcggtatcatggtggtgtcgtgcatctgctggagcccaatgctggtgtttggtggcgctggccgtcggc ggctggagctctacctccctgcagcggccactgttcctggccgtgcgccttgcctcctggaaccagatcctggacccttg

ggtgtacatectactgcgccaggccgtgctgcgccaactgcttcgcctcttgcccccgagggccggagccaagggcggcc

aaaaagccattctgcg (SEQ ID NO:11978) gggacctgcctcatcagcccagtggtactggcttcgtacgcgcggaaccagaccctggtggcactggcgcccgagagccg cgcgtgcacctacttcgctttcgccatgaccttcttcagcctggccacgatgctcatgctcttcgccatggccctggagc gctacctctcgatcggcacccctacttctaccagcgcgcgtctcgcgctccggggcctggccgtgctgcctgtcatc tatgcagtctccctgctcttctgctcgctgccgctgctggactatgggcagtacgtccagtactgccccgggacctggtg cttcatcoggcacgggcggaccgcttacctgcagctgtacgccaccctgctgctgcttctcattgtctcggtgctcgcct gcaacttcagtgtcattctcaacctcatccgcatgcaccgccgaagccggagaagccgctgcggaccttccctgggcagt ggccggggcggecccgggggccgcaggagaggggaaagggtgtccatggcggaggagacgaccacctcattctcctggc 15 cctgttctgagactaatgcgttcagtcctctgttgtcggatttcattaagaacacaagatgcaacacaaacttcctgttctacacagtcagatgccagtaaacaggctgacctttga (SEQ ID NO:11979) gggttttaattacaccatgaagttttacaattttttaggtttttagttctggttttagaaaacagagtagaaggattaac 20 agagaaaaacttcaccattagacaagaagtcaaaatgattctaagggccgcgcaaacaggctttccaagaattaatcatg aggtggtgcttggagaattcctttactccagtgactttgaaacccccttctcactctccactagtctttcaaaggattca tggtgaattgggtctaacgagtataacacggccggccgaacgatgaagctcacgctaccctttcagggcggagaagttcc caggaggaagaatggagaaaaagatcgcagttaggcagtcctcccaacctcaccaaggctccacctctctccaaagccgc 25 gcctggggtgcccgaccaagcgcagccgcagtctgggcactgccaactgactccaactccttttatggtgagaggatgga ttettegttattteccegeccaatetggtacceaeccaeccaeccaeccaegteegetgggegeaeccaagtetaae 30 cttccaatccgccaatgggcgccggggcagcgcgggtttgcctccgcctccgccagggaaacttggaggaggagaaagtttgtacagagggtggaaaggcgcagcagcagcgagctcca (SEQ ID NO:11980) agcccggcagcccgagaggaagatgaacagccccaggccagagcctctgcgagagtggaccccgagccgccccaggtag 35 ccaggageggectcageggcageegcaaactecagtageegccegtgetgeeegtgetggggeggagggagecagecagaget ggggaccaaggctccgcgccacctgggcacagcctcacacctgaacgctgtcctcccgcagacgaggacgggggcactg caaagctgggactcgtctttgaaggaaaaaaatagcgagtaagaaatccagcaccattcttcactgacccatcccgctg cacctcttgttcccaagtttttgaaagctggcaactctgacctcggtgtccaaaaatcgacagccactgagaccggctt tgagaageeggaagatttggcagtttteeagaetgageaggaeaaggtgaaagcaggttggaggegggteeaggaeatetga gggctgaccctgggggctcgtgaggctgccaccgctgctgccgctacaggtgagatggcgttgggctgacgttggggtca acgggtagagaacgagggatgccgccctcgccgaagagagccaagaggggaagagcgcgctctccaaattgcttttgtaa cttgttttcagtgagcattttattgattcagaatctatcgagaatagcactagcgagctactttccccttgagatgggtc 50 gcctcagcatcatctgcgccatgagtgtcgagcgctacctggccatcaaccatgcctatttctacagccactacgtggac aagcgattggcgggcctcacgctctttgcagtctatgcgtccaacgtgctcttttgcgcgctgcccaacatgggtctcgg tagetegeggetgeagtacceagacacetggtgetteategactggaccaceaacgtgacggcgcacgccgcctactect 55 atgcaccgccagttcatgcgccgcacctcgctgggcaccgagcaccacgcgggccgcggccgcctcggttgcctcccg gggccacccogetgcetccccagcettgcogcgcetcagcgactttcggcgccgccggagettccgccgcatcgcgggcg cgggggtggggcctactcggcctttttctcgcatccacctccggcgtccattccccgctccctgttttccctctgagtc cttgggagtgaacgtgtcgcctttaggtcggggctgggattcccacactgtttctcagaggaggcccaacccctctttgg aagtcccaaccctaacgcgatttagcaggtgctttggccctacatccccagtttatgtttcccggaaggctgg (SEQ ID NO:11981) agcccatgactggtttttctgaggcttattatgtagcttctttttcctggaacttgttaccagaaatgaaggcagctt cctaatattgataaggtagacatagcatttatatgttttcccaattgattaatgatgaaatctaaatgtgcgactcactt atgcaggtgcgagtattegtcaaccagttatatcagccaagtttggagcgagaagtcagtaaaaatccagatttgcaggc 65 70 75 tccgtcatgttetcggccggggtgctggggaacctcatagcactggcgctgctggcgcgccgctggcggggggacgtggg gtgcagcgccggccgcaggagctccctctccttgttccacgtgctggtgaccgagctggtgttcaccgacctgctcggga cctgcctcatcagcccagtggtactggcttcgtacgcgcgaaccagaccctggtggcactggcgcccgagagccgcgcg tgcacctacttcgctttcgccatgaccttcttcagcctggccacgatgctcatgctcttcgccatggccctggagcgcta cctctcgatcgggcacccctacttctaccagcgccgcgtctcggcctccgggggcctggccgtgctgcctgtcatctatg cagtctccctgctcttctgctcgctgctgctggactatgggcagtacgtccagtactgccccgggacctggtgcttc atccggcacgggcggaccgcttacctgcagctgtacgccaccctgctgctgcttctcattgtctcggtgctcgcctgcaa

cttcagtgtcattctcaacctcatccgcatgcaccgccgaagccggagaagccgctgcggaccttccctgggcagtggcc

ggggcggccccgggggcccgcaggagaggggaaagggtgtccatggcggaggagacggaccacctcattctcctggctatc ttctgagactaatgcgttcagtcctctgttgtcggatttcattaagaacacaagatgcaacacaaacttcctgttctaca cagtcagatgccagtaaacaggctgacctttgaggtcagtagtttaaaagttcttagttatatagcatctggaagatcat tttgaaattgttccctggagaaatgaaacagtgtgtaaacaaaatgaagctgccctaataaaaaggagtatacaaacat 20 tggggaccccacatcccaggcagtgccggcacccctggcgctgacatgagcccttgcgggcccttcaacctgagcctgg cgggcgaggcgaccacatgcgcggcgccctgggtccccaacacgtcggccgtgccgccgtcgggcgcttcgcccgcgctt cccatcttctccatgacgctgggcgccgtgtccaacctgctggcgctggcgctgctggcgcaggccgcgcgggccgcctgcg acgoogoogotoggocaccaccttootgotgttogtggccagootgotggccaccgacctggogggccacgtgatoocgg gegegetggtgetgetgegtetgtacaetgeggggegegeteeggeeggeggggeetgeeaetteetgggeggetgeatgge 25 ttetteggeetgtgeeegetgetggetggetgtggeatggeegtggagegetgegtgggegteaegeggeegetgeteea cgccgcgcgggtctcggtcgcccgcgcgcgccctggcgctggcccgggtggccgcggtggccttggccgtggcgctgc cgetggcgcgcgtgggccgctatgagetgcagtacccgggcacgtggtgcttcatcggcctgggtcccccgggcggctgg cgccaggcactgcttgctggcctcttcgccagcctcggcctggtcgcgctcctcgccgcgctggtgtgcaacacgctcag cggcctggccctgcatcgcgcccgctggcgacgccgctcccgacggcctccccggcctcaggcctcaggccccgacagccggcgtc 30 35 40 atcageceagtggtactggettegtacgegeggaaccagaecetggtggcactggegeecegagageegegegtgcaccta cttegetttegecatgacettetteageetggecaegatgeteatgetettegecatggecetggagegetaeetetega ctgctcttctgctcgctgccgctgctggactatgggcagtacgtccagtactgccccgggacctggtgcttcatccggca cgggcggaccgcttacctgcagctgtacgccaccctgctgctgcttctcattgtctcggtgctcgcctgcaacttcagtg 45 tcattctcaacctcatccgcatgcaccgccgaagccggagaagccgctgcggaccttccctgggcagtggccggggcggc cccggggcccgcaggagaggggaaagggtgtccatggcggaggagacgacctcattctcctggctatcatgaccat tocaagetettaggtttttateaattaatteaataattgaeeettgggtetttgeeateettaggeeteetgttetgaga 55 taccetttcagggcggagaagttcccaggaggaagaatggagaaaaagtcgcagttaggcagtcctcccaacctcaccaaggetccacctctctcccaaagccgcaacgtgctgccacctgcgcgggagaggctgcaatcactgtctcctcttttct tecgetgggegcacecaagtetaaccecggggegcacgecgtagegcagacaccgtatttetectecttteteggecaac 60 cctaggtagaatcctaaaacaactgccctctttccacgatctagatgttgcggcccgcgggacaggaggttcaagaaata gtacactccgagcggcaggcagcgagagcggaaacggtcgcoggtttcagtggtggccccactggaagccgagttcagga gcggctaagcgtcgccggggaaagcaccggggcttcccagggtctcctccgagttcccactccgcacctccgagggcgtg aaaaccacgggagccgccgcccgcgcgccagcccgcccagcccagcccagcccagccagcccccgccagtcttccctgcggc gcccagggaggacgccgtccgcccccttccaatccggccaatgggcgcccgggcagcgcgcggtttgcctccgcctccgc 65 cagggaaacttggaggaggagaaaagtttgtacagagggtggaaaggccgcagcacgcgagctccaagcccggcagcccg agaggaagatgaacagccccaggccagagcctctgcgagagtggaccccgagccgcccccaggtagccaggagcggcctc cgcgccacctgggcacagcctcacacctgaacgctgtcctcccgcagacgagaccggcgggcactgcaaagctgggactc gtetttgaaggaaaaaaatagegagtaagaaateeageaeeattetteaetgaeeeateeegetgeaeetettgtttee 70 caagtttttgaaagetggcaactetgaeeteggtgteeaaaaategaeageeaetgagaeeggetttgagaageegaaga tttggcagtttccagactgagcaggacaaggtgaaagcaggttggaggcgggtccaggacatctgagggctgaccctggg ggctogtgaggctgccacogctgctgccgctacaggtgagatggcgttgggctgacgttggggtcaacgggtagagaacg agggatgccgccctcgccgaagagagccaagaggggaagagcgcgctctccaaattgcttttgtaacttgttttcagtga gcattttattgattcagaatctatcgagaatagcactagcgagctactttccccttgagatgggtcttattcatcttggc 80 aatggcccgggggccagccgctgtgcgagtacagcaccttcattctgctcttcttcagcctgtccggcctcagcatcatc

tgcgccatgagtgtcgagcgctacctggccatcaaccatgcctatttctacagccactacgtggacaagcgattggcggg ceteacgetetttgcagtetatgcgtecaacgtgetettttgcgcgctgcccaacatgggteteggtagetcgcggetgc agtacccagacacctggtgcttcatcgactggacaccaacgtgacggcgcacgccgcctactcctacatgtacgcgggc ttcagctccttcctcattctcgccaccgtcctctgcaacgtgcttgtgtgcggcgcgctgctccgcatgcaccgccagtt catgogoogoacctogotgggcaccgagoagoacoacgoggcogoogootoggttgcotcooggggcoacccogctg cctccccagccttgccgcgcctcagcgactttcggcgccgccggagcttccgccgcatcgcgggcgccgagatccagatg tattaggeettttetetgtatetatetetgggtetattetetgtgttetettgttttetetgggtetttgggatgtattg
tgtcgcettttgtggggetgggattcccacattgtttetcagaggatgcccaaccetetttgggattcccaacceta
acgcgatttagcaggtgetttggccetacatcccccagtttatgttteccggaaggetggagcccatactgttttet
gaggettattatgtagetteetettttectggaacttgttaccagaaatgaaggcagettectaatattgataaggtaga
catagcatttatatgtttteccaattgattaatgatgaaatctaaatgtgcgactcacttatgcaggtgcgagtattcgt
caaccagttatatcagccaagtttggagcgagaagtcagtaaaaatccagatttgcaggccatccgaattgcttctgtga
accccatcctagacccctggatatatatcctcctgagaaagacagtgctcagtaaagcaatagagaagatcaaatgccte 10 15 ttctgccgcattggcgggtcccgcagggagcgctccggacagcactgctcagacagtcaaaggacatcttctgccatgtc aggccactctcgctccttcatctcccgggagctgaaggagatcagcagtacatctcagaccctcctqccagacctctcac tgccagacctcagtgaaaatggccttggaggcaggaatttgcttccaggtgtgcctggcatgggcctggcccaggaagac accacctcactgaggactttgcgaatatcagagacctcagactcttcacagggtcaggactcagagagtgtgttactggt ggatgaggctggtggaagcggcagggcagggcctgccctaaggggagctccctgcaagtcacatttcccagtgaaacac 20 atagacacatacatgtcaca (SEQ ID NO:11983) aagcttcctgtacctggaatattaatattttatttcagatttgggaaattttcagctagcaatctttaaatatgctttct gacccccttttcctctattttctccttcttaaactactgtaatgtgaacattagctctcttttttaattttaatttaat ttttgtttttatttttgagatgcagtctcactctgtcacccaggctggagtgcagtggcatgatctcagctcactgcaa 25 cctttgccttctaggttgaagagattctgctgcctcagtctccccatgagctgggattacagcatgtgccacaatccctg gctaatttttttgtatttttagtagagactgggtttcaccatgttggtcaggctggtcttgactcctgacctcaggtgat ccactcaccttggcctcccaaagcgctgggattatggcatgagccactgagtctggctgaatgttagctctcttgatgct teagtteaeagattettettettetgettgateaagtetgetaetggtgatttetaetgeattteteaetteattata 30 tttttcagctccaatttcttttatgatttcaatctttctgttacatttcttatgttgtgcatttattgttctctgattt caccaaattgtttctctgtgttttgcttcaaagtaactgagcttctttaaaaacaattatcttgaatccattgtcaggcca tttgtagtactccatttcttttgggtcagctactgggaaattattgtgtttcttaggtggtgatattttaatttgggttt tcatgtttcttgctgccttacactgctgtctgagcatctggtggatctgccccaatttcaggctgtatgggctgactttg 35 40 tagototocttggtggctgagotggtgactagagcatggacaggcacagagaaaccttgactctaggacccagggtgttc aggtgtgcacattactacagcagctctggagttgagaatatgggttacctttctacagtggctgaactagtgtctggagc aaagactttcacagagagaacttggcttggggtcccagggtgagatctagttcacaacagcagtgactccagtgtctgag acatgaggaggtgcactgcagccacagagccacagtccagagtgtgaatatctgtagagcagcacaacttttgggggatc aggaacacacatagaattgtgagaggtggtaaccctggccccagtcctggcgagtgcaacaatagctgcttcttggtgag ggggtgtaggggtagtgcaactgtgttttccctttttagcatcctgctatgggaatggctgttggacaaaagatgccagt 50 tgtgttgttccaaattctttaacaggctcttgagccccatcccccaactccccacccttgtgagggctattttggtttgt gtataactgtctatgtttgtttttttgttggggcataaggctgacatctcctactccaccatcttgctaatgtcacctgc gtataactgtctatgtttgttttttgttggggcataaggctgacatctcctactccaccatcttgctaatgtcacctgc ataggaatctttttatgctttccttatattcactaaaatttaacaatatcaaacttaaaaacatatgatcaattgaactt attaatatcaaacttattataaataagaaactaccaggctgggcatggtggctcatgcctgtaatcccaacattttggga ggctgaggtgaaaggatcacttgagcccaggaattcaagaccagcctgggaaatatagagagaccctatctctagagatt ttttttttaattagccagtagtgatggcacacatctatagtcccagctactcaggaggctgaggtgggagaattgctg 55 agcccaggaggtcaaggctgcagcagcagtaatcatgccactgcactccagcctgggccgcagagtgagaccctgtctc aaaaaaagaacctactagtctacataccacacttcttcatccccatctgagactatatatttttttctaacatgaggca atgccaaaaagaggagctggtgagtgaaagtaagaacagaaagacatggaggcaagtcttatagaataatagccaacact taaacttacacttaacagogtgataggtattgttccaaacacattaaattcatttaatggtccttacatgtctatgtatt 60 tggtgattattatccttattattcacattgctgagtgtattattctgttctcatgatgctgatagagacatacccgagac tggataacttattaaaaaaaaaaaagetttaatggactcacagttccacgtggatgggagtcctcacaatcatggtagaa atcageteteatgegaettatteaetaecatgagaacagtatgggggaaaceaececatgatteaatgatetaecaggt gaggaaactgagttatagggagattagtaacgcccaacacagctggtaggtggtggagccaggcagtctgactctagggt ctggactctgaactgcatcatgctgccaagaagttcctcattttttcctctctaagtttcccttattcccctacagtc acgtgcaaatgcagccttatataccctaattcatctttacctttagactttcttccaatgtttctacttcattccatttt 70 cattgtaattaattcaaagcatgttttccaaatgtactactttaaattggagcttatatcataatccaaggaaacctttg tggaagggggtgaccccttgcctcttggcaaccactatttctaagctgccaacattactcttgcattatcaacattctaa cttcatgggaagggctgtgggtgagtttctggaatgtgaataggaagttgtttttctaaacagcctgacactgaggggagg cagtgagactgtaagcagtctgggttgggcagaaggcagaaaaccagcagagtcacagaggagatg (SEQ ID NO:11984)

gtcgaggatccctaaagtcctttgaagctttcatattctgtaacttttgtgccaagaaggccttacagtgagatgggatc ccagtatttattgagtttcctcattcataaaatggggataataatagtaaatgagttgacacgcgctaagacagtggaat agtggctggcacagataagcctcggtaaatggtagccaataatgatagagtatgctgtaagatatctttctctccctct gcttctcaacaagtctctaatcaattattccactttataaacaaggaaatagaactcaaagacattaagcactttccaa aggtcgcttagcaagtaaatgggagagaccctatgaccaggatgaaagcaagaaattcccacaagaggactcattccaac tcatatcttgtgaaaaggttcccaatgcccagctcagatcaactgcctcaatttacagtgtgagtgtgctcacctccttt agatctgtaatgaataagcaggaactttgaagactcagtgactcagtgagtaataaagactcagtgacttctgatcctgt cctaactgccactccttgttgtcccaagaaagcggcttcctgctcttgaggaggaccccttccctggaaggtaaaacta 10 agtgagggagagacagagactcgaatttccggagctatttcagtttttcttttccgttttgtgcaatttcacttatgatac cggccaatgcttggttgctattttggaaactccccttaggggatgcccctcaactggccctataaagggccagcctgagc tgcagaggatcaagacagcacgtggacctcgcacagcctctcccacaggtaccatg (SEQ ID NO:11985) cctccgacagcctctccacaggtaccatgaaggtctccgcggcacgcctcgctgtcatcctcattgctactgccctctgc 15 ccacatcaaggagtatttctacaccagtggcaagtgctccaacccagcagtcgtctttgtcacccgaaagaaccgccaag tgtgtgccaacccagagaagaagtgggttcgggagtacatcaactctttggagatgagctaggatggagagtccttgaac ctgaacttacacaaatttgcctgtttctgcttgctcttgtcctagcttgggaggcttcccctcactatcctaccccaccc gctccttgaagggcccagattctgaccacgacgagcagcagttacaaaaaaccttccccaggctggacgtggttggctcagccttgtaatcccagcactttgggaggccaaggtgggttggatcacttgaggtcaggagttcgagacagcctggccaacatga tgaaaccccatgtgtactaaaaatacaaaaattagccgggcgtggtagcgggcgcctgtagtcccagctactcgggagg ctgaggcaggagaatggcgtgaacccgggagcggagcttgcagtgagccgagatcgcgccactgcactccagcctggagg aatcccagctactcgggaggctaaggcaggaaaattgtttgaacccaggaggtggaggctgcagtgagctgagattgtgc cacttcactccagcctgggtgacaaagtgagactccgtcacaacaacaacaaagcttcccaactaaagcctaga
agagcttctgaggcgctgctttgtcaaaaggaagtctctaggttctgagctctggctttgccttggctttgcaaggggctc cccctcacaggagcttactggcaaacatgaaaaatcgggg (SEQ ID NO:11986) gtcgaggatccctaaagtcctttgaagctttcatattctgtaacttttgtgccaagaaggccttacagtgagatgggatc 30 ccagtatttattgagtttcctcattcataaaatggggataataatagtaaatgagttgacacgcgctaagacagtggaat gcttctcaacaagtctctaatcaattattccactttataaacaaggaaatagaactcaaagacattaagcacttttccaa aggtcgcttagcaagtaaatgggagagaccctatgaccaggatgaaagcaagaaattcccacaagaggactcattccaac tcatatottgtgaaaaggttcccaatgcccagctcagatcaactgcccaatttacagtgtgagtgtgctcacctccttt 35 agat ctgtaatgaataagcaggaactttgaagactcagtgactcagtgagtaataaagactcagtgacttctgatcctgt cctaactgccactccttgttgtcccaagaaagcggettcctgctctctgaggaggaccccttccctggaaggtaaaacta cggccaatgcttggttgctattttggaaactccccttaggggatgccctcaactggcctataaagggccagcctgagctgcagaggatcaagacagcacgtggacctcgcacagcctctccacaggtaccatgcctccgacagcctctccacaggta 40 ccatgaaggtctccgcggcacgcctcgctgtcatcctcattgctactgccctctgcgctcctgcatctgcctccccatat tecteggacaceacaccetgetgetttgeetacattgeeegeccactgeeegtgeeeacateaaggagtatttetacae cagtggcaagtgctccaacccagcagtcgtctttgtcacccgaaagaaccgccaagtgtgtgccaacccaggaagaagaaat gggttcgggagtacatcaactctttggagatgagctaggatggaggtccttgaacctgaacttacacaaatttgcctgt 45 ttotgottgotottgtoctagottgggaggottoccotoactatoctaccoaccogotocttgaagggcccagattotg accacgacgagcagcagctacaaaaaccttccccaggctggacgtggtccagccttgtaatcccagcactttgggag gccaaggtgggtggatcacttgaggtcaggagttcgagacagcctggccaacatgatgaaaccccatgtgtactaaaaat acaaaaaattagccgggcgtggtagcgggcgcctgtagtcccagctactcgggaggctgaggcaggagaatggcgtgaac 50 ccgggagcggagcttgcagtgagccgagatcgcgccactgcactccagcctgggcgacagagcgagactccgtctcaaaa aaaaaaaaaaaaaaaaaaaatacaaaattagccgcgtggtggcccacgcctgtaatcccagctactcgggaggctaa ggcaggaaaattgtttgaacccaggaggtggaggctgcagtgagctgagattgtgccacttcactccagcctgggtgaca aagtgagactccgtcacaacaacaacaacaaaaagcttccccaactaaagcctagaagagcttctgaggcgctgctttgt caaaaggaagtetetaggttetgagetetggetttgcettggetttgcaagggetetgtgacaaggaaggaagtcagcat 55 gcctctagaggcaaggaagggaacactgcactcttaagcttccgccgtctcaacccctcacaggagcttactggcaa acatgaaaaatcgggg (SEQ ID NO:11987) attaaacetetegegageeeeteegeagaetetgegeeggaaagttteatttgetgtatgeeateetegagagetgtet aggttaacgttegcactctgtgtatataacctcgacagtcttggcacctaacgtgctgtgcgtagctgctcctttggttg aatccccaggcccttgttggggcacaaggtggcaggatgtctcagtggtacgaacttcagcagcttgactcaaaattcctggagcaggttcaccagctttatgatgacagttttcccatggaaatcagacagtacctggcacagtggttagaaaagcaag ttaatcaggctcagtcggggaatattcagagcacagtgatgttagacaaacagaaagagcttgacagtaaagtcagaaat 65 qtqaaggacaaggttatqtqtataqaqcatqaaatcaagaqcctggaagatttacaagatgaatatgacttcaaatgcaa aaccttgcagaacagagaacacgagaccaatggtgtggcaaagagtgatcagaaacaagaacagctgttactcaagaaga tqtatttaatgcttgacaataaqaqaaaggaagtagttcacaaaataatagagttgctgaatgtcactgaacttacccag aatgccctgattaatgatgaactagtggagtggaagcggagacagcagagcgcctgtattggggggccgccaatgcttg cttggatcagctgcagaactggttcactatagttgcggagagtctgcagcaagttcggcagcagcttaaaaagttggagg 70 aattggaacagaaatacacctacgaacatgaccctatcacaaaaaacaagtgttatgggaccgcaccttcagtctt ttecageageteatteagagetegtttgtggtggaaagacageeetgeatgeeaacgeaceeteagaggeegetggtett gaagacaggggtccagttcactgtgaagttgagactgttggtgaaattgcaagagctgaattataatttgaaagtcaaag gtgatgaacatggaggagtccaccaatggcagtctggcggctgaatttcggcacctgcaattgaaagaacagaaaaatgc 75 tggcaccagaacgaatgagggtcctctcatcgttactgaagagcttcactcccttagttttgaaacccaattgtgccagc gcctccatcctttggtacaacatgctggtggcggaacccaggaatctgtccttcttcctgactccaccatgtgcacgatg ggetragetttragaagtgetgagttgetggeagtttettetgteaceaaaagaggteteaatgtggaecagetgaacatgt tgggagagaagettettggteetaaegeeageeegatggteteatteegtggaegaggttttgtaaggaaaatataaat gataaaaatttteeettetggetttggattgaaageateetagaaeteattaaaaaacaeetgeteeetetetggaatga tgggtgcatcatgggcttcatcagcaaggagcgagagcgtgccctgttgaaggaccagcagccggggaccttcctgctgc ggttcagtgagagctcccgggaaggggccatcacattcacatgggtggagcggtcccagaacggaggcgaacctgacttc

catgcggttgaaccctacacgaagaaagaactttctgctgttactttccctgacatcattcgcaattacaaagtcatggc tgctgagaatattcctgagaatcccctgaagtatctgtatccaaatattgacaaagaccatgcctttqqaaagtattact ccaggccaaaggaagcaccagagccaatggaacttgatggcctaaaggaactggatatatcaagactgagttgatttct gtgtctgaagttcacccttctagacttcagaccacagacaacctgctccccatgtctcctgaggagtttgacgaggtgtc teggatagtgggetetgtagaattegacagtatgatgaacacagtatagagcatgaattttttteatettetetggegae cagcaaattcgctgcaacctgttgatagcaagtgaatttttctctaactcagaaacatcagttactctgaagggcatcat gcatcttactgaaggtaaaattgaaaggcattctctgaagagtgggtttcacaagtgaaaaacatccagatacacccaaa gtatcaggacgagaatgagggtcctttgggaaaggagaagttaagcaacatctagcaaatgttatgcataaagtcagtgc 10 ccaacigitalaggttgttggataaatcagtggttatttagggaactgcttgacgtaggaacggtaaatttctgtgggag aattettacatgttttetttgetttaagtgtaactggeagtttteeattggtttaectgtgaaatagtteaaageeaagt ttatatacaattatatcagtcctctttcaaaggtagccatcatggatctggtagggggaaaatgtgtattttattacatc aatgacactagctaatatcaatagaaggatgtacatttccaaattcacaagttgtgtttgatatccaaagctgaatacat 15 tctgctttcatcttggtcacatacaattattttacagttctcccaagggagttaggctattcacaaccactcattcaaa agttgaaattaaccatagatgtagataaactcagaaatttaattcatgtttcttaaatgggctactttgtcctttttgtt attagggtggtatttagtctattagccacaaaattgggaaaggagtagaaaaagcagtaactgacaacttgaataataca ccagagataatatgagaatcagatcatttcaaaactcatttcctatgtaactgcattgagaactgcatatgtttcgctga tatatgtgtttttcacatttgcgaatggttccattctctccctgtactttttccagacacttttttgagtggatgatgt 20 ttogtgaagtatactgtatttttaccttttccttccttatcactgacacaaaaagtagattaagagatgggtttgacaa ggttcttcccttttacatactgctgtctatgtggctgtatcttgtttttccactactgctaccacactatattatcatg caaatgotgtattcttctttggtggagataaagatttcttgagtttttaaaattaaagctaaagtatctgtattgc attaaatataatategacacagtgettteegtggeactgeatacaatetgaggeeteeteteteagtttttatatagatg gcgagaacctaagtttcagttgattttacaattgaaatgactaaaaaacaaagaagacaacattaaaaacaatattgttt cta (SEQ ID NO:11988) attaaacctetcgccgagcccctccgcagactctgcgccggaaagtttcatttgctgtatgccatcctcgagagctgtct aggttaacgttcgcacctctgtgtatataaacctcgacagtcttggcacctaacgtgctgtcgtagctgctctttggttg aatccccaggcccttgttggggcacaaggtggcaggatgtctcagtggtacgaacttcagcagcttgactcaaaattcct ggagcaggttcaccagctttatgatgacagttttcccatggaaatcagacagtacctggcacagtggttagaaaagcaag actgggagcacgctgccaatgatgtttcatttgccaccatccgttttcatgacctcctgtcacagctggatgatcaatat 30 ttaatcaggctcagtcggggaatattcagagcacagtgatgttagacaaacagaaagagcttgacagtaaagtcagaaat gtgaaggacaaggttatgtgtatagagcatgaaatcaagagcctggaagatttacaagatgaatatgacttcaaatgcaa 35 aaccttgcagaacagagaacacgagaccaatggtgtggcaaagagtgatcagaaacaagaacagctgttactcaagaaga tgtatttaatgcttgacaataagagaaaggaagtagttcacaaaataatagagttgctgaatgtcactgaacttacccag aatgccctgattaatgatgaactagtggagtggaagcggagacagcagagcgcctgtattggggggccgccaatgcttg cttggatcagctgcagaactggttcactatagttgcggagagtctgcagcaagttoggcagcagcttaaaaagttggagg aattiggaacagaaatacacctacgaacatgaccctatcacaaaaaacaaagtgttatgggaccgcaccttcagtctt ttccagcagctcattcagagctcgtttgtggtggaaagacagccctgcatgccaacgcaccctcagaggccgctggtctt gaagacaggggtccagttcactgtgaagttgagactgttggigaaattgcaagagctgaattataatttgaaagtcaaag gtgatgaacatggaggagtccaccaatggcagtctggcggctgaatttcggcacctgcaattgaaagaacagaaaaatgc tggcaccagaacgaatgagggtcctctcatcgttactgaagagcttcactccttagttttgaaacccaattgtgccagc 45 50 tqqqtqcatcatgggcttcatcagcaaggagcgagagcgtgccctgttgaaggaccagcagccgqggaccttcctgctgc ggttcagtgagagctcccgggaagggccatcacattcacatgggtggagcggtcccagaacggaggcgaacctgacttc catgcggttgaaccctacacgaagaaagaactttctgctgttactttccctgacatcattcgcaattacaaagtcatggc tgctgagaatattcctgagaatcccctgaagtatctgtatccaaatattgacaaagaccatgcctttggaaagtattact ccaggecaaaggaagcaccagagccaatggaacttgatggccctaaaggaactggatatatcaagactgagttgatttct 55 gtgtctgaagtgtaagtgaacacagaagagtgacatgtttacaaacctcaagccagecttgctcctggctggggcctgtt gaagatgettgtattttaetttteeattgtaattgetategeeateaeagetgaaettgttgagateeeegtgttaetge ctatcagcattttactactttaaaaaaaaaaaaaaaaccaaaatttgtatttaaggtatataaattttcccaa aactgataccctttgaaaaagtataaataaaatgagcaaaagttgaa (SEQ ID NO:11989) ttactaagatgattattgttttatagcaattgaaagaacagaaaaatgctggcaccagaacgaatgaggtgagagtggtt 60 tatgttgtgaatgggcc (SEQ ID NO:11990) gctggtggtggcggaacccagggtatggaaaacacatttgctttggtccaggggtttaagcagagaccccacgctctcgctgctgcatctcgctgctgcatctctgaaatagccccaat (SEQ ID NO:11991) ggtctcaatgtggaccagctgaacatgttgggagagaagcttcttggtatatgcatattaacttgttatgtttataaaaa 65 ttgaaattcataaaaatatc (SEQ ID NO:11992)
ctgatcagtagaaaacatgtttacatctttgtttgtagtgtatagagcatgaaatcaagagcctggaagatttacaagat
gaatatgacttcaaatgcaaaaccttgcagaacagaggtaagggttcacaactgaagtggtgccggttgg (SEQ ID NO:11993) attaaacctctcgccgagcccctccgcagactctgcgccggaaagtttcatttgctgtatgccatcctcgagagctgtct aggttaacgttcgcactctgtgtatataacctcgacagtcttggcacctaacgtgctgtgcgtagctgctctttggttg agtoccoaggcccttgttggggcacaaggtggcaggatgtctcagtggtacgaacttcagcagcttgactcaaaattcct ggagcaggttcaccagctttatgatgacagttttccccatggaaatcagacagtacctggcacagtggttagaaaagcaag 70 actoggagcacgctgccaatgatgtttcatttgccaccatccgttttcatgacctcctgtcacagctggatgatcaatat 75 ttaatcaggetcagtcggggaatattcagagcacagtgatgttagacaaacagaaagagettgacagtaaagtcagaaat gtgaaggacaaggttatgtgtatagagcatgaaatcaagagcctggaagatttacaagatgaatatgacttcaaatgcaa aaccttgcagaacagagaacacgagaccaatggtgtggcaaagagtgatcagaaacaagaacagctgttactcaagaaga tgtatttaatgcttgacaataagagaaaggaagtagttcacaaaataatagagttgctgaatgtcactgaacttacccag aatgccctgattaatgatgaactagtggagtggaagcggagacagcagagcgcctgtattggggggccgcccaatgcttg ጸበ cttggatcagctgcagaactggttcactatagttgcggagagtctgcagcaagttcggcagcattaaaaagttggagg aattggaacagaaatacacctacgaacatgaccctatcacaaaaaacaacaagtgttatgggaccgcaccttcagtctt ttecageageteatteagagetegtttgtggtggaaagacageeetgeatgecaacgcacceteagaggeegetggtett

gaagacaggggtccagttcactgtgaagttgagactgttggtgaaattgcaagagctgaattataatttgaaagtcaaag gtgatgaacatggaggagtccaccaatggcagtctgagggctgaatttcggcacctgcaattgaaagaacagaaaaatgc tggcaccagaacgaatgagggtcctctcatcgttactgaagagcttcactcccttagttttgaaacccaattgtgccagc gcctccatcctttggtacaacatgctggtggcggaacccaggaatctgtccttcttcctgactccaccatgtgcacgatg ggctcagctttcagaagtgctgagttggcagttttcttctgtcaccaaaagaggtctcaatgtggaccagctgaacatgt tgggagagaagcttcttggtcctaacgccagccccgatggtctcattccgtggacgaggttttgtaaggaaaatataaat gataaaaattttcccttctggctttggattgaaagcatcctagaactcattaaaaaacacctgctccctctctggaatga 10 tgggtgcatcatgggcttcatcagcaaggagcgagagcgtgccctgttgaaggaccagcagccggggaccttcctgctgc ggttcagtgagagctcccgggaaggggccatcacattcacatgggtggagcggtcccagaacggaggcgaacctgacttc catgoggttgaaccetacacgaagaaagaactttctgctgttactttccctgacatcattcgcaattacaaagtcatggc tgctgagaatattcctgagaatcccctgaagtatctgtatccaaatattgacaaagaccatgcctttggaaagtattact ccaggccaaaggaagcaccagagccaatggaacttgatggccctaaaggaactggatatatcaagactgagttgatttct 15 gtgtctgaagttcacccttctagacttcagaccacagacaacctgctccccatgtctcctgaggagtttgacgaggtgtc toggatagtgggctctgtagaattcgacagtatgatgaacacagtatagagcatgaatttttttcatcttctctggcgac cagcaaattcgctgcaacctgttgatagcaagtgaatttttctctaactcagaaacatcagttactctgaagggcatcat gcatcttactgaaggtaaaattgaaaggcattetetgaagagtgggttteacaagtgaaaaacatecagatacaeccaaa 20 gtatcaggacgagaatgagggtcctttgggaaaggagaagttaagcaacatctagcaaatgttatgcataaagtcagtgc ccaactgttataggttgttggataaatcagtggttatttagggaactgcttgacgtaggaacggtaaatttctgtgggag aattottacatgttttotttgotttaagtgtaactggcagttttccattggtttacctgtgaaatagttcaaagccaagt ttatatacaattatatcagtcctctttcaaaggtagccatcatggatctggtagggggaaaatgtgtattttattacatc aatgacactagctaatatcaatagaaggatgtacatttccaaattcacaagttgtgtttgatatccaaagctgaatacat tetgetttcatettggtcacatacaattatttttacagtteteccaagggagttaggetattcacaaccactcattcaaa agttgaaattaaccatagaggtagtaactttgtcettttgtt attagggtggtatttagtetattagtecacaaaattgggaaaggagtagaaaaaggagtaactgcaacttgaataataca ecagagataatatgagaatcagatcattteaaaactcatttectatgtaactgcattgagaaactgcatatgttecgetga 30 ttcgtgaagtatactgtatttttacctttttccttccttatcactgacacaaaaagtagattaagagatgggtttgacaa ggttcttcccttttacatactgctgtctatgtggctgtatcttgtttttccactactgctaccacaactatattatcatg caaatgctgtattcttctttggtggagataaagatttcttgagttttgttttaaaattaaagctaaagtatctgtattgc attaaatataatategacacagtgctttccgtggcactgcatacaatctgaggcctcctctctcagtttttatatagatg 35 gcgagaacctaagtttcagttgattttacaattgaaatgactaaaaaacaaagaagacaacattaaaaacaatattgttt ctaattaaacctotcgccgagcccctccgcagactctgcgccggaaagtttcatttgctgtatgccatcctcgagagctg tctaggttaacgttcgcactctgtgtatataacctcgacagtcttggcacctaacgtgctgctgctgctcctttgg ttgaatccccaggcccttgttggggcacaaggtggcaggatgtctcagtggtacgaacttcagcagcttgactcaaaatt cctggagcaggttcaccagctttatgatgacagttttcccatggaaatcagacagtacctggcacagtggttagaaaagc aagactgggagcacgctgccaatgatgtttcatttgccaccatccgttttcatgacctcctgtcacagctggatgatcaa talagtogottttettiggagaalaaettettgetaeageataacataaggaaaageaagegtaatetteaggalaattt gatttaatcaggctcagtcggggaatattcagagcacagtgatgttagacaaacagaaagagcttgacagtaaagtcaga aatgtgaaggacaaggttatgtgtatagagcatgaaatcaagagcctggaagatttacaagatgaatatgacttcaaatg 50 cttttccagcagctcattcagagctcgtttgtggtggaaagaccctgcatgccaacgcaccctcagaggccgctggt aaagtgatgaacatggaggagtccaccaatggcagtctggcggctgaatttcggcacctgcaattgaaagaacagaaaaa tgctggcaccagaacgaatgagggtcctctcatcgttactgaagagcttcactcccttagttttgaaacccaattgtgcc 55 atgggctcagctttcagaagtgctgagttggcagtttttcttctgtcaccaaaagaggtctcaatgtggaccagctgaaca tgttgggagagaagettettggteetaacgeeageeeegatggteteatteegtggaegaggttttgtaaggaaaatata aatgataaaaattttcccttctggctttggattgaaagcatcctagaactcattaaaaaaacacctgctccctctctggaa 60 tgatgggtgcatcatgggcttcatcagcaaggagcgagagcgtgccctgttgaaggaccagcagcagggggaccttcctgc tgcggttcagtgagagctcccgggaaggggccatcacattcacatgggtggagcggtcccagaacggaggcgaacctgac ttccatgcggttgaaccctacacgaagaaagaactttctgctgttactttccctgacatcattcgcaattacaaagtcat ggctgctgagaatattcctgagaatcccctgaagtatctgtatccaaatattgacaaagaccatgcctttggaaagtatt actecaggecaaaggaageaccagagecaatggaacttgatggeectaaaggaactggatatateaagactgagttgatt 65 tetgtgtetgaagtgtaagtgaacacagaagagtgacatgtttacaaacetcaagccagcettgeteetggetggggeet gttgaagatgettgtattttacttttccattgtaattgetatcgccatcacagetgaacttgttgagatccccgtgttac caaaactgataccctttgaaaaagtataaataaaatgagcaaaagttgaattactaagatgattattattgttttatagcaat 70 75 ttgtagtcccaactacctgggaggctgaggcgggagaatcacctgagcctgggaggtcgaggctgcagcgagccgagatc ggccgctgcattccagcctgggtgacagagcgagaccatgtctcaaaaaataaaaattaaaaaaattgttttcattac ctcagccctcctcttcctatcccaaggcgtcgaaattccggtcccaccccttcccatggagcccttggcgtctccaggct cctcaagctagtttcggttccgggctcacgcgggttctcgaaaatcagctgtttcagtctttgggctagtccactaatt ggactcctcccctcgtagaaagtgcctacttgaacttctccaccaatcgctgaagctgcaggtgtggtttcggctcagct tgtcccgccctggcggagggggggggttgcggcggccagtgagctcgcagtctgggaagggcttgactgaatggcagc

gagggcgcgggggactgcaccctaatcaggtacgggccctgagagggtqtgctggggttaggggtgggggtgagagttagcgctccccagattgaaataggagc tgtcgcctgctcggtcctcgatcttcttctgtccagcctatctccctaaccctaatgcccctctcccaaaactgccctgc agetbeegagaeeeggaatetggeattgttatgttggtteggtatetgaegttttteeetetgetetgeattatttttta caaaatatgtgcctaagaatgagagataatgagaaaaaattgtttcagccccttaacctcagtgtttgcaatccatttgg ggagaccaggitttttgtttttgttttcatatttgaatctttgctgacttgctcctttaatatcagacacttaaatcctc agatgggaetcatcatatttttttttgagatggaatetteactatgttgeteaagettggtetgeaaeteetggeteaage catectetegtettgttgggeetetegtettgtgggeetgeacaaagtgetgggattacaggeatgageeatteatgeee 15 aaaggcagctgatgttattcatgttagtagaagactctcccaccccaagcatttctctttattttgtaataaaatcatgt tagacaccagetggcagtgagcagggaacagtggggagaaagatgcatgggacagcetgettggtgacaggcaaaaaccg gtttgttgttcttttagagacagagtcttgctttgtcacccaggctggagtgtagtgatgtgatctctgcttactgcaac cctgcctctgggtacaagccattctcctgcctcagcctcttgagtagctgggattacaggcaacaattttaagtgaagtg aagtttcaggatctcgagcaaagttgtataacctataatcatattcaagattcacaggtcataaacgtgtcatattcttg tcCagcactttgggaggcaggtgggcagatcacctgaggtcagaagttcagacagctggacatatggtgaaacctcatctctactaaaaaatacaaaaattagacggcatggtagtggggcgctgtaatcccagctagtcgggaggctgaggcaggaga atcccttcaactcggacggcagagtttgcagtgaggccgagatcgtgtcactgcagtccagcctgggtgacagagcaaga atogogtcacgcotgtaatoccagcactttggaaggcogaggtaggcgagtcacgagttcaggagatogagaccatcotg cagctactcgggaggctgaggcaggagaatggcatgagcccgggaggcggagcttgcagtgagccaaaatcacaccactg cactocagectgggcaacagategagaetecatetgaagaaaaaaaaatacaggttgggaecacagtggeteatgeetg taateetagtaetttgggagteegaagtaggtggateaeetgaggteaggaetttgagaeeageetggeeaaeatggeaa aaccccatetetactaaaaatatacaaaaattagetgggegtggtggtggetgtaateecagetaeteaggagge tgaggcagaagaatcacaaccagggggatggtggttgcaatgagccaagatcatctccacttcactccggcccaggc ggctccaaaatgctccagtcgagcatttcctttgagtgtcatgtgggtgctcaaaaagttagatttttggaccattttca 50 gcacttgggagtgattgattccaaggctaccatgctattcttccacttcttggatcagctgaactatgagttgggccgttg cagccaggacccagagtccttgttgctgcagcacaatttgcggaaattctgccgggacattcaggtacttggaacggttg ggagtgatggggtagcactgggagcagagcatagaggagtaaggtttggagaatagaatagtacctggaggtggcaaggg gacactgttgggaggatgctatggtgaaaagacaaagggctaagaaccccgaaggaggaggaaatactgtggacattggt ggggagggtctagggcaataggtcattgagagtggttgaattggatcaatcctttctgtttacctttctgttagcccttt tcccaggatcctacccagttggctgagatgatctttaacctccttctggaagaaaaaagaattttgatccaggctcagag ggcccaattggtgaggacaattcagtggtaatgttggaaactcctgaagtagaggaaccatggaaaggactcagggag ttgtctcagaacaggatccccccgacatcctgtggtataatttcaggcctgaacttaaggcatgaaaggccagagttaaa acgtgctcagagcctcttttttcaggaacaaggaggccagttctcgaaacacctgtggagagccagcaacatgagattg aatcccggatcctggatttaagggctatgatggaggttagtagatgtggtaggagttagggttgacagtgttcagcctaa cacctccctgagaagcagcctcatcggggtcctctcccctctgcagaagctggtaaaatccatcagccaactgaaagaccagcaggatgtcttctgcttccgatataagatccaggccaaaggtaggaagcacattgaggggctggagaaagataagtgc 70 75 cttccaactcccaggttcaagccaattctcctgtctcagcctcccgagcctgggattaccaggcacacaccagcctggc tagtttttttgattittagtagagacgatgttictccatgttggccaggctggtctcaaactcctgacttcaggtgatc

cacccaacttgggctcccaaagtgctgggattacaggcgtgacgaccatgcccggccaacagtatattatatttatccat agaaatataccaggccaggcatggcgtctcatgcctgttatcctagtactttggaaggctgaggacggaggatcacttca tagaccctagctactcaggaggctgaggtgggaggattgcttgagcccaggtgttggaggctgcagtgagccatgattataccctgtagtccagcctggacaacagaacgagaccctgtctctaaaagtatatatgtacacataccataatacccagct actgaggagctgaggcagaaagagtgcttgagtccaggagtttgatgtcagctgagcagaatatagcaagaccttcacct cttaaaaaaatttaaagtagattaaaaaaataccacaattgctcaggtagtattaaaaaaataccacaattgctcaggtag agtgctgagattacaggtgtgagccaccatgtcagctggcgaggctttttaaaagatagttccaagtgttacagctcttt tgtacaagttcccagatagtgttcccaactgaatctatttctcatgtgtagtgtatggttgttttcctgtcaccacattg ctgattattattatttttaattatagagacagtaaagtacagtagttaaaaatgtgagttgggctgggtgcagtggctc acacctgtaatcccagcactttgggaggccaaggtgggcgatcacctgaggtcaggagttcaagaccagcttggccaac atggcaaaaccccgtctcgactaaaaatatatatatataagttagccgggcgtggtggcaacattacctgtaatcccagc tactogggaggccaacaggcaggagaatctcttgaatccaggaggtggaggttgcagtgagccagatcacaccattgcac 25 cacatacaagetteatecettactagttgtattgacectaaageaagteactaacetttetgtgecetecagttttatea tetgtaatgtggggaaaataatagtaeetgeeteagagggttgttttgagggattaaatgcattaatatgtggaaaggget taatataagttgtacatagcatatgaaaactgttatgttaaatctattagcagttttatatgtgaaaatagctttgattt ttctgactcttctcatatttatagagagatcttggaacctggatgggggaatccaggaaactcatggattccttcttcct gaattttatcacccaggttcacagctggagcaaagctgttgtttcacctgaggcagctgctgaaggagctgaagggactg agttbccttgctaccaggatgaccctctgaccaaaggggtggacctacgcaacgccaggtcacagagttgctaca gcgtctgctccacaggtctagaggccaggcaggaaccctgggggaaagaaggaaccagggaagccattcttacacatact gagctatatattctctccacacctctctctcctcgagcctttgtggtagaaacccagccctgcatgcccaaactcccca tcgaccctcatcctcaagactggcagcaagttcaccgtccgaacaaggttggcattccagaactcattcctt tttccaaccctgccactgtgtattttctggctttacagctactgcccactcttggctttttcagtcttttcctgaatctc ctacctegttgataccccategtcctcttttcaaacacctagcctatacaaaagccgactccgaccacatttccctata aggettägagagaetgattacateteteteteaaggeeacatagetagtgageteaagtegggtttgaacegaggtetgte tgatcccaaagacgaaactcctaacttccatactcttttgcccaatgattittttttaaatttatttcttttcaggaatcc tcotcaattacaagggtaggttgcttgacaaggacactgcaaacatctgtacagtgtatgacctgcagaaccgggggattt ataattccattccttgtctccatgtatcttcctcctggaacagcttccggaagttcaacattctgacttcaaaccagaaa actttgacccccgagaaggggcagagtcagggtttgatttgggactttggttacctggtaagaatagtttgtgacctatg cttttattactatttttatttttcgagacggagtctcactctgtcccccaggctggagtgcagtggtgccatcttggct 55 agaagcctcttggggagggttagcactcctttcctctaacaaatacctgcagctagaaacatcacatccctctctgtgac tcctgtcttctccccacacacggacaccctccctgtggtgattatttccaacatgaaccagctctcaattgcctgggctt cagttctctggttcaatttgctcagcccaaaccttcaggtaggggagtggggcgacaggtcccggcgcgagagcagggg tgtggaagettggtgtgataggttgcttctgagccagcctacactgctcccaccctgcagaaccagcagttcttctcca 60 accecceaaggeccectggagettgetgggeetgeteteagttggeagtteteetectatgttggeegaggeeteaae tcagaccagctgagcatgctgagaaacaagctgttcggtacagatttccttttctctcagcctttccccagccttagtct tttctgtccctctgtcctatctatcccaggacccctggcttccctcacatatctgtggctatctgtcccacagggcagaa ctgtaggactgaggatccattattgtcctgggctgacttcactaaggtaactccctgaatcctgtggagctgctggatct agccccacattccaaatactggccttcccacgtgccctccttccctacaccagaggcaactcctcagcttttgctacctt tccattcctccagcgagagagccctcctggcaagttaccattctggacatggctggacaaaattctggagttggtacatg accacctgaaggatctctggaatgatgggtaaggccttggtcacccttccctcatgggcttgtgcttccgggcttgagag ggagatcgagaccatcctggctaacacggtgaaaccccgtctctactctaaaaatacaaaaattagccgggcgtggagg aaaaatacaaaagttagccaggatgggtggtgtgcacctgtggtcccagctactctggaggctgagaggtggggaagatt gcttgagcccgggaggtcgaggtggcagtgagctgtgatcatgccactattctccagcctgggtgacagaatacacctg

 $\verb|tctccctgtctcccagaaaaaaaaaagtgctgttcatctgtgtgatctcactgaatcttcgtacttcaaaaccctcggaatctcactgaatcttcgtacttcaaaaccctcggaatctcactgaatcttcgtacttcaaaaccctcggaatctcactgaatcttcgtacttcaaaaccctcggaatctcactgaatcttcgtacttcaaaaccctcggaatctcactgaatcttcgtacttcaaaaccctccggaatctcactgaatcttcgtacttcaaaaccctccggaatctcactgaatcttcgtacttcaaaaccctccggaatctcactgaatcttcgtacttcaaaaccctccggaatctcactgaatcttcac$ gtcactcccgctgactgaaatcatccgccattaccagttgctcactgaggagaatatacctgaaaacccactgcgcttcc 10 tetateceegaateeecegggatgaagettttgggtgetaetaeeaggagaaaggtgggaategttgacataetteattg taagggattcgtccatgggatactgctggttactatggggatgagactgccaggaccatctgcactaggggaaaacctca 15 gcttcagtgaatcgtcaaaagggggcattaccttctcctgggtggagcaccaggatgatggtcagctgctctgccctgcc actctagttttttctggttctagtctctcctatctcatatttttctgctgccatccttaggttgtctccacaggggtttc ggttttgttctgtcgcccaggctggagtgcagtggtgtgatcctggctcactgcagcctcgacctcctgagctcaagcaa 20 tacaggcatgcatcaccaaactcagctaattttttttgtattttttgtagagatggggtcttaccatgttgacgcatcag gctgttctgaactcctggactcaagcaatccacccaccttggcctcccaaaagtcagggattacaggcgtgcgaccacac gtggataatatgactacgagccttgacctaggggttgaagcaatgctcctgcctcagccaccaagtgctgagactacaggcacacgccaatctacactcaatcacactcagctaattttttaaattttttgtagggatggggtatcactggttttgccca 25 ccaggctggagtgcagtggcacgatctcagctcactgcaacctctgcctcccaggctcaagcaattctcctgcctcagcctcctgagtactgggactacaagcgcgcacaaccaccacctggtaatttttgtatttttagtagagacagggttttacc 30 atattqqccaqqctqqtctcaaactcctqacctcatqatccqacccaccttqqcctccaaaqtqcaqqqattacaqqcq tgagcctctgcacccggcctaacttttgtatttttagtagaaacagggtttcaccatgttggccaggctggtcatgagct cctqqcctcaaqtqatctqccgcctcaqcctccaaaqtqcttggattacaggtqtqaqccacctggcctqaqagttta ttatgcgccaggcactaggcaaatggtttgcatttattttctcattttattgaatctacaaaatagtcctgtgaagtaaa cactgttactgttttcagctaaggaactggatttagagtagtcaagttttgtacctaaggtacgtggctaatgatacagg tctgitagaticcgtagccctgattttaaccaccctactgcctctcaagaattactaggtattgttctcatttatagatg ataaatetgaggeteagaaaagttaggeeacttgeetaaggteeeccageeaggatteaaacteeaggaggeetgattee aaacccatgctctttagccctccgccctactgccttcttagactagcttctgcttattctaccattcctgatttcatttg 40 cagagccagagctggagtcattagagctggaactagggctggtgccagagccagagctcagcctggacttagagccactg ctgaaggcagggctggatctggggccagagctagagtctgtgctggagtccactctggagcctgtgatagagcccacact atgcatggtatcacaaacagtgccagagccagaccaaggacctgtatcacagccagtgccagagccagatttgccctgtg atctgagacatttgaacactgagccaatggaaagtaagtgatgagatggagtggcacacatttccttttcctacctcttct ccctctcccattacagaaaaagctgaactccaagctcctcattggagagaggtccatctgtgattcctttttttaggaattacacatgccttccccacctcctgctctttcatcccacaagttcccactcaggctcttcccaggcctttcctgccatc tacacatgccttcccccacctccctgctcttcatcccacaagttcccactcagtgctttcccagyccttcccagyccttccccactcccactcccactcccactcccactccactttcatcccactcacttttcatccacttttcatcccagyccttcccacttagctttcctcctaggttyggtactcccactgttgccttctctctctgtttacctagttcttccacttgttgttaaagattgaagatattatcccactgatgaccactgtttgccttctagaccaccatttcctctgttttttccatatccttttgcccttcctactcctactccatagcatgatgatgtttcccaaggatgggaatcaggcatgtgtcccttcca 50 agctgtgttaactgttcaaactcaggcctgtgtgactccattggggtgagaggtgaaagcataacatgggtacagagggg qqqtcctqqqqqcaqqcaqqcaqttqacaqqtacttqqaqqqctcaqqqcaqtqqcttctttccaqtatqqaaqqatt tcaacattttaatagttggttaggctaaactggtgcatactggcattggccttggtggggagcacagacacaggatagga 55 atgateetgeeaatetaatgtgagtgtgaagtttgeacactagtttatgetacctagtetecaettteteaatgettagg ccaggctagagtgcaatggtgcaatcacagctcactgcagcctcaacctcctgggttcaagcaatcctcctagcc 60 gctggtcttgaactgggctcaagtgatcctcacgccttgcctcccaaagtgctgggattataggcatgagccactgtgct tggccaggattttttttttttttttttgagatggagtttctctcttgttgtccaggctggagtgcaatggtgtgatccg gggaattc (SEQ ID NO:11995) $\verb|cagctggaattcggggggggggagccggggggttccgacgtcgcagccgagggaacaagcccca| \\$ acagcagcttgacacacggtacctggagcagctccatcagctctacagtgacagcttcccaatggagctgcgagtttc
tggccccttggattgagagtcaagattgggcatatgcggccagcaaagaatcacatgccactttggtgtttcataatctc 70 75 acagattgcctgcattggaggcccqcccaacatctqcctagatcggctagaaaactggataacqtcattagcagaatctc aacttcagacccgtcaacaaattaagaaactggaggagttgcaccaaaaagtttcctacaaaggggaccccattgtacag caccggccgatgctggaggaggaggatcgtggagctgttcagaaacttaatgaaaagtgcctttgtggtggagcggcagcc ctgcatgcccatgcatcctgaccggcccctcgtcatcaagaccggcgtccagttcactactaaagtcaggttgctggtca agttccctgagttgaattatcagcttaaaattaaagtgtgcattgacaaagactctggggacgttgcagctctcagagga tcccggaaatttaacattctgggcacaaacacaaaagtgatgaacatggaagaatccaacaacggcagcctctctgcaga attcaaacacttgaccctgagggagcagagatgtgggaatgggggccgagccaattgtgatgcttccctgattgtgactg

gttgtggtgatctccaacatctgtcagatgccaattgcctgggcgtccatcctgtgggtacaacatgctgaccaacaatcc caagaatgtgaacttcttcactaagccgccaattggaacctgggaccaagtggccgaggtgctcagctggcagttctcgt ccaccaccaageggggctgagcatcgagcagctgacaacgctggctgagaaagctcctagggcctggtgtgaactactca tatcatcgaccttgtgaaaaagtatatcttggccctttggaatgaagggtacatcatgggtttcatcagcaaggagcggg agegggeeatettgageaetaageeeecaggeaeetteetgetgegetteagtgaaageaageaaagaaggaggegteaet ttcacttgggtggagaaggacatcagcggtaagacccagatccagtccgtggaaccatacacaaagcagctgaacaa catgtcatttgctgaaatcatcatgggctataagatcatggatgctaccaatatcctgttgtctccacttgtctatctct atcetgacattcccaaggaggaggcattcgggaagtattgtcggccagagagccaggagcatcctgaagctgacccaggt agcgctgccccatacctgaagaccaagtttatctgtgtgtacaccaacgacctgcagcaataccattgacctgccgatgtc cccccgcgctttagattcattgatgcagtttggaaataatggtgaaggtgctgaaccctcagcaggagggcagtttgagt ccctcacctttgacatggagttgacctcggagtgcgctacctccccatgtgaggagctgagaacggaagctgcagaaag atacgactgaggcgcctacctgcattctgccacccctcacacagccaaaccccagatcatctgaaactactaactttgtg gttccagattttttttaatctcctacttctgctatctttgagcaatctgggcacttttaaaaatagagaaatgagtgaat gtgggtgatctgcttttatctaaatgcaaataaggatgtgttctctgagacccatgatcaggggatg (SEQ ID NO:11996) cgacagcgaccagatcaaggaggaactgccggagccctttgagcatcttctgcagagaatcgcccggagacccaagcctc agcagttetttggattaatgggcaaacgggatgetggacatggccagateteteacaaaagacataaaacagatteettt 20 atctgaattactggtccgactggtacgacaggaccagatcaaggaggaactgccggagccctttgagcatcttctgcagagaatcgcccggagacccaagcctcagcagttctttggattaatgggcaaacgggatgctgattcctcaattgaaaaacaagtggccctgttaaaggctctttatggacatggccagatctctcacaaaagacataaaacagattcctttgttggactaa 25 tgggcaaaagagctttaaattctgtggcttatgaaaggagtgcaatgcagaattatgaaagaagacgttaataaactacc tgttttaattccaatatgatgactcccttaaaatagaaataagtggttatttctcaacaaagcacagtgttaaatgaaattgtaaacctgtcaatgatacagtccctaaagaaaaaaatcattgctttgaagcagttgtgtcagctactgcggaaaag gaaggaaactcctgacagtcttgtgcttttcctatttgttttcatggtgaaaatgtactgagattttggtattacactgt attigtatctctgaagcatgtttcatgttttgtgactatatagagatgtttttaaaagtttcaatgtgattctaatgtct gegeegeaaggeaetgageaggegaaagagegegeteggaeeteetteeeggeggeagetaeegagagtgeggagegaee agegtgegeteggaggaaceagagaaaeteageaeeeegegggaetgteegtegeaaaateeaacatgaaaateetegtg gccttggcagtcttttttcttgtctccactcagctgtttgcagaagaaataggagccaatgatgatctgaattactggtc cgactggtacgacagcgaccagatcaaggaggaactgccggagccctttgagcatcttctgcagagaatcgcccggagac ccaagcctcagcagttctttggattaatgggcaaacgggatgctgattcctcaattgaaaaacaagtggccctgttaaag catgtttcatgttttgtgactatatagagatgtttttaaaagtttcaatgtgattctaatgtcttcatttcattgtatga cgacagegaccagatcaaggaggaactgccggagccctttgagcatcttctgcagagaatcgcccggagacccaagcctc agcagttctttggattaatgggcaaacgggatgctggacatggccagatctctcacaaaagacataaaacagattccttt gttggactaatgggcaaaagagctttaaattctgtggcttatgaaaggagtgcaatgcagagagtgcggagcgaccacgt 50 gcgctcggaggaaccagagaaactcagcaccccgcgggactgtccgtcgcaaaatccaacatgaaaatcctcgtggcctt ggcagtcttttttcttgtctccactcagctgtttgcagaagaaataggagccaatgatgatctgaattactggtccgact ggtacgacagcgaccagatcaaggaggaactgccggagccctttgagcatcttctgcagagaatcgcccggagacccaag cctcagcagttctttggattaatgggcaaacgggatgctgattcctcaattgaaaaacaagtggccctgttaaaggctct ttatggacatggccagatctctcacaaaagacataaaacagattcctttgttggactaatgggcaaaagagctttaaatt 55 ggttgaaaattcaaaaagtgtttatttttcatattgtgccaatatgtattgtaaacatgtgttttaattccaatatgatg actcccttaaaatagaaataagtggttattteteaacaaagcacagtgttaaatgaaattgtaaaacctgteaatgatac actcccttaaaatagaaataagtggttatttctcaacaaagcacagtgttaaatgaaattgtaaaacctgtcaatgatac
agtccctaaagaaaaaaatcattgctttgaagcagttgtgtcagctactgcggaaaaggaaaggaaactcctgacagtct
tgtgcttttcctatttgtttcatggtgaaaatgtactgagattttggtattacactgtatttgtattcttgaactcctgaagatg
ttcatgttttgtgactatatagagatgtttttaaaagttcaatgtgattctaatgtcttcatttcattgtatgatgtt
tgtgatagcttaacattttaaataaaagaaaaaatatcttggcgccgcaaggcactgagcggagaagacggcgctcgga
cctccttcccggcggcagctaccgagagtgcgagcgaccagcgtgcgctcggaagaacaagagaaactcagcaccccg
gggactgtccgtcgcaaaatccaacatgaaaatcctcgtggccttggaagtcttttttcttgtctccactcagctgtttg
cagaagaaataggagccaatgatctgaattactggtccgattggtacgacagcgaccaggaccaaggagaaccgggg
gagcctttgagcaatcttctgcagagaaatcgccggagacccaagcctcagcagttcttttggattaatgggcaaacggga
tgctgattcctcaattgaaaaacaagtggccctgttaaaggctctttatggacaatggccaggatcatcacaaaaagaataa 60 aaacagattcctttgttggactaatgggcaaaagagctttaaattctgtggcttatgaaaggagtgcaatgcagaattat gaaagaagacgttaataaactacctaacattatttattcagcttcatttgtgtcaatgggcaatgacaggtaaattaaga 70 catgcactatgaggaataattatttatttaataacaattgtttggggttgaaaattcaaaaagtgtttatttttcatatt gtgccaatatgtattgtaaacatgtgttttaattccaatatgatgactcccttaaaatagaaataagtggttatttctca gttgtgtcagctactgcggaaaaggaaggaaactcctgacagtcttgtgcttttcctatttgttttcatggtgaaaatgt actgagattttggtattacactgtatttgtatctctgaagcatgtttcatgttttgtgactatatagagatgtttttaaa 75 tcttgaaaaaaaaaaaaaaa (SEQ ID NO:12000) gaaaaagccttccaccctcctgtctggctttagaaggaccctgagccccaggcgccacgacaggactctgctgcagaggg gggttgtgtacagatagtagggctttaccgcctagcttcgaaatggataacgtcctcccggtggactcagacctctcccc aaacatctccactaacacctcggaacccaatcagttcgtgcaaccagcctggcaaattgtcctttgggcagctgcctaca cggtcattgtggtgacctctgtggtgggcaacgtggtagtgatgtggatcatcttagcccacaaaagaatgaggacagtg acgaactattttctggtgaacctggccttcgcggaggcctccatggctgcattcaatacagtggtgaacttcactatgc tgtccacaacgaatggtactacggcctgttctactgcaagttccacaacttcttccccatcgccgctgtcttcgccagta

tctactccatgacggctgtgggcctttgataggtacatggccatcatacatcccctccagccccggctgtcagccacagcc accaaagtggtcatctgtgtcatctgggtcctggctctcctgctggccttccccagggctactactcaaccacagagac catgoccagcagagtcgtgtgcatgatcgaatggccagagcatccgaacaagatttatgagaaagtgtaccacatctgtg tgactgtgctgatctacttcctcccctgctggtgattggctatgcatacaccgtagtgggaatcacactatgggccagt gagatccccggggactcctctgaccgctaccacgagcaagtctctgccaagggcaaggtgfcaaaatgatgattgttgt ggtgtgcaccttcgccatctgctggctgccttccacatcttcttcctcctgccctacatcacccagatctctacctga tgcctcaatgacaggttccgtctgggcttcaagcatgccttccggtgctgccccttcatcagcgccggcgactatgaggg getggaaatgaaatecaceeggtatetecagaeecagggeagtgtgtacaaagteageegeetggagaeeaceateteca 10 cagtggtgggggcccacgaggaggagccagaggacggccccaaggccacaccctcgtccctggacctgacctccaactgc tcttcacgaagtgactccaagaccatgacagagagcttcagcttctcctccaatgtgctctcctaggccacagggccttt cctcacactgggacttgcaaaaagggtcagtatgggttagggaaaacattccatccttgagtcaaaaaatctcaattctt ccctatctttgccaccctcatgctgtgtgactcaaaccaaatcactgaactttgctgagcctgtaaaataaaaggtcgga 15 ccagcttttcccaaaagcccattcattccattctggaagtgactttggctgcatgcgagtgctcatttcaggat (SEQ ID NO:12001) aattcagagccaccgcgggcaggcgggcagtgcatccagaagcgtttatattctgagcgccagttcagctttcaaaaaga ctgcagaggggggttgtgtacagatagtaggctttacgcctagcttcgaaatggataacgtcctcccggtggactcagac ctctccccaaacatctccactaacacctcggaacccaatcagttcgtgcaaccagcctggcaaattgtcctttgggcagc 20 tgeetacaeggteattgtggtgaeetetgtggtgggeaaegtggtagtggatgtggateatettageeeacaaaagaatga ggaeagtgaegaaetattttetggtgaaeetggeettegeggaggeeteeatggetgeatteaataeagtggtgaaette acctatgctgtccacaacgaatggtactacggcctgttctactgcaagttccacaacttctttcccatcgccgctgtcttcgccagtatctactccatgacggctgtgtcttcgccagtatctactccatgacggctgtgtgtcagccacgagtatctactccatgacggctgtgtcatctggtgcctttgataggtacatggccatcatacatcccctccagggctactactcaaccccacagggctactactcgggtcctggctctcctggtggccttcccccagggctactactcaacc 25 30 35 agaaacaccctcacactgggacttgcaaaaagggtcagtatgggttagggaaaacattccatccttgagtcaaaaaatct caattetteeetatetttgecaceeteatgetgtgtgaeteaaaccaaateaetgaaetttgetgageetgtaaaataaa aggtoggaccagcttttcctcaagagoccaatgcattccatttctggaagtgactttggctgcatgcgagtgctcatttc aggatg (SEQ ID NO:12002) gaaaaagccttccaccctcctgtctggctttagaaggaccctgagccccaggcgccacgacaggactctgctgcagaggg gggttgtgtacagatagtagggctttaccgcctagcttcgaaatggataacgtcctcccggtggactcagacctctccc aaacatctccactaacacctcggaacccaatcagttcgtgcaaccagcctggcaaattgtcctttgggcagctgcctaca 50 55 atgotgagaaaggtagotgocaaacottgactgoaataacaataacaaaattaaaacctaaaataataataagtatatoat actgacctttcctgtttaccttgctgtaggtaccacatctgtgtgactgtgctgatctacttcctccccctgctggtgat tggctatgcatacaccgtagtgggaatcacactatgggccagtgagatccccgggggactcctctgaccgctaccacgagc aagtetetgccaagcgcaaggtgagcaggggacaggcagaactaacccaccetggcacagacaacaggetgtegagaagggatggcacacttgtgagccccagaggcagctagcacaaaatatcccaggtat (SEQ ID NO:12004) 60 ggatccaatttttgcccggcataagtgtatagtaaatttcccagccttaaagcacttcccgagagatgctttgagcgctc geggtaceagtgegtaaacgcegeteeeeggetggeggggtgtgegeeaacteeaacetgegegaagtetgeeggtge gegetecagteccacagetecgagteccegeagtgaaaggaggggeggtgeaceggggtagatggeceetgaggacte ccggggttcagttttccgcggctgccaagagggccaagttggacagtggcagggtcctgaagcagatcagcaacaccgc aagtgctccagccccaggtcctcagacacggaggaaaacgacaagaggcggacacacaacgtcttggaacgtcagaggag 70 agagagatgctgtctccagaacttctgaactcaaacgtctcctgaagcttgaaagtggaggaattcagagcccagcggggaagggagtgcatccagaagcgtttatattctgagcgccagttcagctttcaaaaagagtgctgcccagaaaaagcct

tccaccetcetgtetggetttagaaggaccetgageeccaggegecacaggactetgetgcagaggggggttgtgt acagatagtagggetttacegectagettegaaatggataacgteeteeeggtggacteagaceteteeccaaacatete cactaacaceteggaacccaatcagttegtgcaaccageetggcaaattgteetttgggcagetgcetacacggteattgtggtgacetetgtggtggacctetgtggtgagetgetatetttageccacaaaagaatgaggacagtgacgaactatttetggtgaacctggetgcettegeggaggeetecatggetgcattcaatacagtggtgaactteacetatgetgteacacacgaatggtactecacaacttetteeccategeeeggtgtcttegcagtactacteca catcatacatcccctccagccccggctgtcagccacagcaccaaagtggtcatctggtcatctgggtcctcgcctggctctcccctggctccccctggctccacaaggggccttccccctggctccacaaggggccttccccc catccgaacaagatttatgagaaagtgtgagtagagatgactccccatgccaaagaaacgatggtgcaggctgccttcct ggcccttcttgctctttctttctttccatattcttttgttggtacagatttaatgtgtatctgcaagcatttctcacat attaccctcatatcaggttgatatgtccacagttgtcaggggactatagtatcccaaatactattctgagcattgaaagatatttttgaagtgtaagatctagatcctgttata (SEQ ID NO:12006) 15 gagggggatgtgctggtggtctcacctgtctcaccctcttgccaggtggtcaaaatgatgattgtcgtggtgtgcacctt cgccatctgctggctgcccttccacatcttcttcctcctgccctacatcaacccagatctctacctgaagaagtttatcc agcaggtelacelggccatcatgtggctggccatgagctccaccatgtacaaccccatcatctactgctgcctcaatgac 20 agtaaacccagctgtgagacaagagggacaagtggggactgcagctaactt (SEQ ID NO:12007) ccgtcccaaaggtcacctcttcatctgctcgctctccaggttccgtctgggcttcaagcatgccttccggtgctgccct agccgcctggagaccaccatctcacagtggtggggcccacgaggaggagccagaggacggccccaaggccacaccctc 25 gtccctggacctgacctccaactgctcttcacgaagtgactccaagaccatgacagagagcttcagcttctcctactatg cgagtgctcatttcaggatgaattctgcagcacagctgcggacccggaagactcattttcctggagcccggtgtacttc
aataaagttatctcagattagcctcctgcagctggaggctcctatcaccccagcctacgcttgacagggtgaacaaaaga
aggcaccacataacatctaaatgaaaaatttagccctgtcttctaagcatctgtgaaaagaaacatatgtattccccttt 30 ttggcatctcagtatttcagtacatttatacatcatgagattgagaacctcgggcttccacattatgtccccggtgactg tootgagcagccgacgcaagcagaatatgtccactgatacctgctagttctcttacagaccaggaattgggagacttgca 35 ctacatttaatgtgtagttgaccctcttttcctacttgtaaacaaggggactgaactagataatctaagtgttccttcga tagaaaagaataggagcagtgagtettgtaactaatacecagtteetggagatgtageaactgetaaggceatetgtaae tatccatctcagacattctccgatttatcttaaaatcctgagtacattccttctcatggaaggtttttggcttttgacaga 40 gacaaatgtgggctccctgctttaaccttttgggtattttagggtgggggccctaaccitcattcttagttttacacctag catcgtgctcatatgtgcgacaagcaagaaggctgcactttgcagctgcacttctgggaagagggcatcttgcatcttcc cttcagactctctgaatgtctcctccctgctccatggctttgccagcttcctgtctctaaggggtagaatgactcatcaa ccctaaaggacagtcagtcttccaagagccatgaactgaatgctttatatcctaatttagatttagagtttccagaaggt gagcatgcagttftgtfttgttttftttttttctgfctcccaaafctgtgttttttccagatatggctfggaagcagaagctfc 50 accagtectagtgagtetaagetgeecageagtettggaggeatetgagaggaeagattetecaeagaattetaaaaaee cacactcaacatgggcagtcaagcaaagactgggacctttggagagcctctgggaatgagagttctctgggggtacttccaa agggagotggcagtcagtccaggggacctaaaggaatttggttgaacagtatcatctctgtgcatagtaagagggaatgt 55 tgggtggtCcgggcagtttccaatatggcaaagcatctgcttggacagtgccagcaagccttcctctgacccagtctcca atgiccactaacitataaaaatgicatcaactcccacatgigagaaacaccatgatitgtactgtgcatgggtcacattc ttattctagaaatgcatcaccetgtgtttatccaagtgtgtttacttggtgtaatgtccagtagtaatagaatatgaaat atcaaggaaccatctttgttacgtgacttccaaaatgtgagatctcattgctgtcactgtgatatttgtattgtgtgaat ctcttcctcctcttcctcctcatgctttctcagggaggagccctgatgtatatcatgaactcacagttcctagaccacag 60 taattgagggggggtgggggggctttatcggagaagctagagaacaagagtccttctcctccttatcccccaacaggac actaagagacaaggactgagtggaatcetggagaaaggggactcaggaactgacctcattggcctgatttgtgaggagag gtactagaaaccctaataacttgcatagctagaaggatggaatcaatgttcagtaaactcttgactctgtgatgaaatgg gttgggaagatgtgggaacagttcccaggttgagatctgggaagggaggtgggattatgcgaaatcacagtgatgttgcc tatgaataaagctgtgtcaggatgcagaccaacagagttataagcacaagggagttttcgtaggacaggaggttgggg 65 gaataacatctgagaaagacaaaggggaaagaaagcagaagtactcagggacagccttcagaccaccatgccaatctgac acctgggaaaaaagggtggttaggaagacctcagactgtggtgcagctcccagcccaacacgtgcaaagattgccag
agagacattgcacgttaacagaatggccaggcctgatgccctgccgtgctcagccgtggctaggcctctctagggaaag tgttctgtgtttgaacaccatggtggatgctgaagccctgcagctggaggctgtcagccaagtgccctgcagttcttcct aaagaggga (SEQ ID NO:12008) 70 gaaaaagrottocacoctoctgtotggotttagaaggacoctgagococaggogocacgacaggactctgotgoagaggg gggttgtgtacagatagtagggotttacogoctagottogaaatggataacgtootocoggtggactcagacototococ aaacatctccactaacacctcggaacccaatcagttcgtgcaaccagcctggcaaattgtcctttgggcagctgcctaca 75 cggtcattgtggtgacctctgtggtgggcaacgtggtagtgatgtggatcatcttagcccacaaaagaatgaggacagtg acgaactattttctggtgaacctggccttcgcggaggcctccatggctgcattcaatacagtggtgaacttcacctatgc tgtccacaacgaatggtactacggcctgttctactgcaagttccacaacttcttccccatcgccgctgtcttcgccagta totactocatgacggctgtgggcctttgataggtacatggccatcatacatcccctccagccccggctgtcagccacagcc accaaagtggtcatctgtgtcatctgggtcctggctctcctgctggccttcccccagggctactactcaaccacagagac catgcccagcagagtcgtgtgcatgatcgaatggccagagcatccgaacaagatttatgagaaaagtgtaccacatctgtg tgactgtgctgatctacttcctccccctgctggtgattggctatgcatacaccgtagtgggaatcacactatgggccagt

gagatccccggggactcctctgaccgctaccacgagcaagtctctgccaagcgcaaggtggtcaaaatgatgattgtcgt

ggtgtgcaccttcgccatctgctggctgcccttccacatcttcttcctcctgccctacatcaacccagatctctacctga tgeeteaatgacaggtteegtetgggetteaageatgeetteeggtgetgeeeetteateagegeeggegaetatgaggg gctggaaatgaaatccacccggtatctccagacccagggcagtgtgtacaaagtcagccgcctggagaccaccatctcca cagtggtgggggcccacgaggaggagccagaggacggccccaaggccacaccctcgtccctggacctgacctccaactgc tettcacgaagtgactccaagaccatgacagagagcttcagcttctcctccaatgtgctctcctaggccacagggccttt cctcacactgggacttgcaaaaagggtcagtatgggttagggaaaacattccatccttgagtcaaaaaatctcaattctt ccctatctttgccaccctcatgctgtgtgactcaaaccaaatcactgaactttgctgagcctgtaaaataaaaggtcgga ${\tt ccagcttttcccaaaagcccattcattccattctggaagtgactttggctgcatgcgagtgctcatttcaggataattca}$ ccaaacatctccactaacacctcggaacccaatcagttcgtgcaaccagcctggcaaattgtcctttgggcagctgccta 20 accatgcccagcagagtcgtgtgcatgatcgaatggccagagcatccgaacaagatttatgagaaagtgtaccacatctg tgtgactgtggctgatctacttcctccccctgctggtgattggctatgcatacaccgtagtgggaatcacactatgggcca gtgagatccccggggactcctctgaccgctaccacgagcaagtctctgccaagcgcaaggtgtcaaaatgatgattgtc gtggtgtgcaccttcgccatctgctggctgcccttccacatcttcttcttcctgccctacatcaacccagatctctacct 25 gctgcctcaatgacaggttccgtctgggcttcaagcatgccttccggtgctgcccttcatcagcgccggcgactatgag gggetggaaatgaaatccacccggtatctccagacccagggcagtgtgtacaaagtcagccgcctggagaccaccatctc cacagtggtgggggccacgaggaggagccagaggacggcccaaaggccacaccctcgtccctggacctgacctccaact getetteacgaagtgaetecaagaccatgaeagagagetteagetteteetecaatgtgetetectaggeeacagggeet 30 acctcacactgggacttgcaaaaagggtcagtatgggttagggaaaacattccatccttgagtcaaaaaatctcaattc ttccctatctttgccaccctcatgctgtgtgactcaaaccaaatcactgaactttgctgagcctgtaaaataaaaggtog gaccagettttcctcaagageeeaatgeatteeatttetggaagtgactttggetgeatgegagtgeteattteaggatg gaaaaagccttccaccctcctgtctggctttagaaggaccctgagccccaggcgccacgacaggactctgctgcagaggg gggttgtgtacagatagtagggctttaccgcctagcttcgaaatggataacgtcctcccggtggactcagacctctcccc a a a catchecacta a cacchegga acceaate a general constraint and constraint andcggtcattgtggtgacctctgtggtgggcaacgtggtagtgatgtggatcatcttagcccacaaaagaatgaggacagtg acgaactattttctggtgaacctggccttcgcggaggcctccatggctgcattcaatacagtggtgaacttcacctatgc tgtccacaacgaatggtactacggcctgttctactgcaagttccacaacttcttttccccatcgccgctgtcttcgccagta
tctactccatgacggctgtggcctttgataggtacatggccatcatacatcccttcagccccggctgtcagccacagcc
accaaagtggtcatctgtgtcatctgggtcctggctctcctgctggccttcccccaggcctactactcacccacaggagac 40 catgcccagcagagtcgtgtgcatgatcgaatggccagagcatccgaacaagatttatgagaaagtgtaccacatctgtg tgactgtgctgatctacttcctccccctgctggtgattggctatgcatacaccgtagtgggaatcacactatgggccagt gagatccccgggggactcctctgaccgctaccacgagcaagtctctgccaagcgcaaggtggtcaaaatgatgattgtcgt ggtgtgcaccttcgccatctgctggctgcccttccacatcttcttcctcctgccctacatcaacccagatctctacctga ggcatcotaaatgagtaaacccagctgtgagacaagagggacaagtggggactgcagctaacttatcatcacacaactca gtagctgccaaaccttgactgcaataacaataacaaaattaaaaacctaaaaataataagtatatcatactgacctttcc tgtttaccttgctgtaggtaccacatctgtgtgactgtgctgatctacttcctccccctgctggtgattggctatgcata caccgtagtgggaatcacactatgggccagtgagatccccggggactcctctgaccgctaccacgagcaagtctctgcca gtgagccccagaggcagctagcacaaaatatccccaggtatggatccaatttttgcccggcataagtgtatagtaaattt 55 tggacagtggcagggtcctgaagcagatcagcaacaaccgcaagtgctccagccccaggtcctcagacacggaggaaaac gacaagaggcggacacacacacgtcttggaacgtcagaggaggaacgagctgaagcgcagcttttttgccctgcgtgacca 60 agcttagagactgtcacttcccaggtgaatcagctagccaggtaactgagctagatattttgtgggggtgtttcctaaac acagcctcaggaaagttgttttcgggacacctggaccagggagtcgtcgcctctggcttctcggtagctggagcgcgcc 65 cggagcgcggcgctggcacatcgccccacacatgaccgtttcccattgccacaggcaagccqcctctqcaqaqctgtct cagggetctgggettcattecetggaagttgattgtectccactecagetgtttcccaaatecttecttectcccagcae ccctcgtgcaacgacgattccagctgcggaccgcatctgtgtcagttacttccaagccacctactgccccctcgcggagt cagttgtcaacagctggcgcacgtgccgccgtgcgcaccgggactggcgagtacgcagcccaggtactgcccttcccag 70 tgacgtctctgcagggggttataaaagcctcgtgcgcagctaactcgcgagctgagcaacccgaaccgagaggtgcccgc gaaactgcaggcggcagcggcagcaaaaagagaaggaaaaatctccagctggatacgaagctccagaatccttggccat aggeteagaacttttacaggtegegetgeaatgggeeeecaattegeteetaagteeteaegeageacagggetttgeet ttecetgeggaggaaggagaataggagttgeaggeageaggtgeataaatgegggggatetettgetteetagaae tgtgaccggtggaatttctttccctttttcagtttaccgcaagagagatgctgtctccagacttctgaactcaaacgtct cctgaagcttgaaagtggaggaattcagagccaccgcgggcaggcgggcagtgcatccagaagcgtttatattctgagcg ccagttcagctttcaaaaaagagtgctgcccagaaaaagccttccaccctcctgtctggctttagaaggaccctgagccccaggccacaggactctgctgcagagggggttgtgtacagatagtaggggctttaccgcctagcttcgaaatggat cttcttccccatcgccgctgtcttcgccagtatctactccatgacggctgtgggcctttgataggtgagattagcctttgt

gaaaaggcgagaaagtgctcatagaggaccatggcattgctgtgaggttttggaactgggttggggtatgggtcaagtggaa gattggccactctgagggtttttttactgatcaagaatatggaaaaggaattggaaaataattgtacaaatcatcaggaa tcaaagggtttctatgaattttcttattggcaggaaaaatatggaatctctgatacagattttggtgaccagatcagaac tggtcatctgtgtcatctgggtcctggctctcctgctggccttcccccagggctactactcaaccacagagaccatgccc agcagagtcgtgtgcatgatcgaatggccagagcatccgaacaagatttatgagaaaagtgtgagtagagatgactcccca gatttaatgtgtatctgcaagcatttctcacatataccctcatatcaggttgatatgtccacagttgtcaggggactata gtatcccaaatactattctgagcattgaaagataatttttgaagtgtaagatctagatcctgttatagagggggatgtgc ggccatcatgtggctggccatgagctccaccatgtacaaccccatcatctactgctgcctcaatgacaggtgaggatccc ascentatygyctgyctgygetetgagtetetetatytataatetetatetatyttytetatytytetetatygtytetetatygytetet aaccecatyagetetecaggggceacaaggacatetacatactacatygegeaggcatetaaatgagtaaaccaget ytgagacaaggggacaagtgggggactgcagetaacttecateagggcaggcatetteatetyctcgetetecaggt ccytetgggetteaagcatycettecgytyctgccetteateagcgccygcgactatygggggctggaaatgaaatca ccggtatetecagacccagggcagtytytacaaagtcagccgetygagaccaccatetecacagtygytyggggcccac gaggaggagccagagggacccaaggccacaccctcgtccctgacctgacctccaactyctetecacgaagtgacte Caagaccatgacagagagcttcagcttctcctccaatgtgctctcctaggccacagggcctttggcaggtgcagcccca ctgcctttgacctgcctcccttcatgcatggaaattcccttcatctggaaccatcagaaacaccctcacactgggacttg 20 caaaaagggtcagtatgggttagggaaaacattccatccttgagtcaaaaaatctcaattcttccctatctttgccaccc tcatgctgtgtgactcaaaccaaatcactgaactttgctgagcctgtaaaataaaaggtcggaccagcttttcccaaaag cccattcattccattctggaagtgactttggctgcatgcgagtgctcatttcaggatgaattctgcagcacagctgcgga cccggaagactcattttcctggagccccgtgttacttcaataaagttatctcagattagcctcctgcagctggaggctcc tatcaccccagcctacgcttgacagggtgaacaaaagaaggcaccacataacatctaaatgaaaaatttagccctgtctt 25 ctaagcatctgtgaaaagaaacatatgtattcccctttttggcatctcagtatttcagtacatttatacatcatgagatt gagaacctcgggcttccacattatgtccccggtgactgtcctgagcagccgacgcaagcagaatatgtccactgatacct gctagttctcttacagaccaggaattgggagacttgcactacatttaatgtgtagttgaccctcttttcctacttgtaaa caaggggactgaactagataatctaagtgttccttcgaatcttaacatcccgtggttcaaggattgtatgagttttttgt ttgttttacaaaaaaaaacaaaacgaagaataaaagaatagaaaagaataggagcagtgagtcttgtaactaatacccag ttcctggagatgtagcaactgctaaggccatctgtaactatccatctcagacattctccgatttatcttaaaatcctgag caggcagaatttcatagctgcagaacactgtcagagaagacaaatgtgggctccctgctttaacctttttgggtattttag cagctgcacttctgggaagagggcatcttgcatcttcccttcagactctctgaatgtctcctccctgctccatggctttg atgcacatgtgccgcatccataacattaaggggagaataatgcatggtttacagcctttgccagccctgctggctctaat tctaccagggcatccacaggcctgggggaagaagaaacagtataagccagaaaacctcaagaactacattctcaaagca gcatggaaagttttaaataaactaagtgaagccagatcattgcagatatataaatggaagacaaaatttagaagcaacaa aagttagtgccctaagcattagtcatacttccaatagagaatcttgctgtgtatggattactcacttttggaagaatgtaa agagctaacatgattatgagaagtacctgagaagatggtgtcaagaagttggggacaccccatctatggaagagaaggtt ttgaagagectacettattggecateactaactaactcaccagtectagtgagtetaagetgcecageagtettggagge atctgagaggacagattctccacagaattctaaaaacccacactcaacatgggcagtcaagcaaagactgggacctttgg tgaacagtatcatctctgtgcatagtaagagggaatgttgggtggtccgggcagtttccaatatggcaaagcatctgctt ggacagtgccagcaagccttcctctgacccagtctccaatgtccactaacttataaaaatgtcatcaactcccacatgtg agaaacaccatgatttgtactgtgcatgggtcacattcttattctagaaatgcatcaccctgtgtttatccaagtgtgtt ${\tt tacttggtgtaatgtccagtagtaatagaatatgaaatatcaaggaaccatcttgttacgtgacttccaaaatgtgagaatatcaaggaaccatcttgttacgtgacttccaaaatgtgagaatatcaaggaaccatcttgttacgtgacttccaaaatgtgagaatatgaaatatcaaggaaccatcttgttacgtgacttccaaaaatgtgagaatatgaaatatcaaggaaccatctttgttacgtgacttccaaaaatgtgagaatatgaaatatcaaggaaccatctttgttacgtgacttccaaaaatgtgagaatatgaaatatgaaatatcaaggaaccatctttgttacgtgacttccaaaaatgtgagaatatgaaatatgaaatatcaaggaaccatctttgttacgtgacttccaaaaatgtgagaatatgaaatatatgaaatatgaaatatgaaatatgaaatatgaa$ totcattgctgtcactgtgatatttgtgtgtgaatotottcotcotcttcctcatgctttctcagggaggagcc 55 aggggtcctaaacatcctataggatgctaaatgggatggtactagaaaccctaataacttgcatagctagaaggatggaatcaatgttcagtaaactcttgactctgtgatgaaatgggttgggaagatgtgggaacagttcccaggttgactgggaactggga agggaggtgggattatgcgaaatcacagtgatgttgcctatgaataaagctgtgtcaggatgcagacacaacagagttat actcagggacagccttcagaccaccatgccaatctgacacctgggaaaaaaaggggtggttaggaagagcctcagactgtg gtgcagctcccagcccaacacgtgcaaagattgcccagagagacattgcacgttaacagaatggccaggcctgatgccct gccgtgctcagccgctggctgggctctctaagggaaagtgttctgtgtttgaacaccatggtggatgctgaagccctgca gctggaggctgtcagccaagtgccctgcagttcttcctaaagaggga (SEQ ID NO:12009) 65 aattatgggtttgttatcgtttttgttcgttgctggttgtacgtgacgggagttcagctttttgctgcgggacggcagag ctctcgcatccccatggtgctgattggtccgcctcccaggcctgacccaatcggagcattcctaggaggagcggccccag agegeetgactegggggteecagageeetetgeacaceacageeeeggtgteecegtgtgteeceggggtteteecageee tggtgtcccctgagtctcttcttcaccgtcagccctggtgtctcccgtgtccctgccacaccctcatccctggtgtcccc tggaggcctctggggagtttgtccagagaatggaggagaagcagggtcatgagcaggagcggtctgggccacccctgcct tgcacggacagccccagaggtggacattgaggactcgtaggaggacttgggtctcatacggcgggtggggagcagggccccttcctggctgaggacacttggtgaccccc

tttcaggagcgacgggtcttgtagcctggggcagccaggccacctgggtgcagctatgcctgaaggcctcctggcaccga gacaggggcaggagcagatcccaccagcgggaaggtggtgcgttctgatgctgggatccaccagctgacaggtggagctg cgagectecagtgeteageceteggeggggeetgeetggeageceaeaeaeagagggeateggggtggegggggeaegt gttacacgggggccctgggtctgagtcatccacttcctccgagtctggatgggacccagcgccctcctccgcccc tcctgatctggaaggataaatggggaggggagagcccgctgggtagaaggaacagggagtggccagggtaagtccctact ctcagagaccetgacatcagtgtcacctggagcagagtggcccagectcagactcagagcaccaagacccaggcccgcag geetggacccaccccggtcccccgtcccagctccattcttcaccccacaatctgtagcccccagccctgccctgtgagg cccggccaggcccacgatgctcctccttgctccccagatgctgagcctgctgctgctgcggcgctgcccgtcctggcgagcc cggcctacgcggcccctggtgagtcccagccggggtccaccctgcccctcaccacattccacaggtcagggcctgggtgg . 10 gttctggggaggctggctggcccccacacagggaagggctggcccaggcgtgggtgcttcctggccctgacctggc acctgeeccagecccagtccaggccctgcagcaagcgggtatcgtegggggtcaggaggcccccaggagcaagtggccct ggcaggtgagcctgagagtccgcgaccgatactggatgcacttctgtggggggctccctcatccacccccagtgggtgctg accgcggcgcactgcctgggaccgtgagtctcccagggcctggaggggtgggcaagggctggatgtgagccctggctccc gggtgctcctgggggctgccagggccctgagtgggatcctccgctgcccagggacgtcaaggatctggccaccctcagg gtgcaactgcgggagcagcacctctactaccaggaccagctgctgccggtcagcaggatcatcgtgcacccacagttcta 20 cacctactacttggactggatccaccactatgtccccaaaaaagccgtgagtcaggcctggggtgtccacctgggtcactg 25 gagagecageceteetgtecaaaacaceaetgetteetacecaggtggcgactgcccccacacettecetgccccgte ctgagtgccccttcctgtcctaagcccctgctctcttctgagccccttcccctgtcctgaggacccttccccatcctga geeceetteeetgteetaageetgaegeetgeaetgggeeeteeggeeeteeeetgeeeaggeagetggtggtggeget aatcctcctgagtgctggacctcattaaagtgcatggaaatcactggtgtgcatcgctgtgttttctggttgtggatgtca ctgggagagaagggtccaggtgtgctgaggacacctgccacagtgcgaggtcctagccctcaaggcacagccagtcacc 30 agagccactcgggcaactcagttgattataaaggacagccaagtccctgcaaccgggtcaagacagagaatggtcgccgg gagccccagggctgcccatcacgagcccctaccccacgcttcccacgagctettctcccggcccctctgtccactgcttg tgctttgccctagttgtttgctttgagacaggatctcgctgtgtcatccaggctgaagtgcagtggtgtgatcagggctc actgtageettgaacteetgggeteaagegateeteecatettggeeteecatatagetgggeeacaggagtgageeace 35 acgcccagttaatttttgtattttcagtagagatggggtttcgccatgttggccagtctggtctcgaactcctgacctca agtgatetgeeegeeteggeeteccaaagtgetgggatgacaggegtgageeacegeacecageetgagtttgacatttt caaattcattttgaggtctttctctacatcaatacatgagccctccgcgtccggcgagtgttgcattttatcccgggctc ttgtttgcattttatatttgaacatgattacattcaggaatgaaatgcggggctgttctggttgaaaacaactctctaaa gaaacattcactctttccttccaactgtcagatgcagagatgtgcatttagtctcccaatctctgcaaatgacctctgt 40 qaaqqqtctctcaggacqtgacaqqcaqqctgctggccagggctgcagccacctgcgttttgactgggacgggggcacct gatccaaggtcacccacgtggctgccggcaggaggccctggttccccgtcacaagggggtgtgagggggaaggccaagtg gtggccacanggttnccaccgagagggacagtgcccaagttggccaagccacctnggacaagaaacaatnccaagtett nccaaggtccttggacaacaaggagaanccccccagcttgggggcnattaaccaagggccangncccccttcccggtt 50 c (SEQ ID NO:12010) tggacccacccggtccccgtcccagcttccattcttcaccccacaatctgtagccccagccctgccctgtgaggcc cggccaggccacgatgctcctccttgctccccagatgctgaatctgctgctgctgccgctgcccgtcctggcgagccgc tetggggaggeegggetggeeeccacacagggaagggetgggeecaggeetggggetgetteetggteetgacetggcac 55 ctgccccagcccaggccaggccctgcagcgagtgggcatcgttgggggtcaggaggcccccaggagc (SEQ ID NO:12011) cagatoggagoggacatogcotgctggagotggaggagocggtgaaggtotcoagcocgtcacacggtcaccctgcc gggacagtggaggtggggccagggtcttagccacagcccagcccctgggctccctctgggctccaggtgggggttgcccg gocccottoctgaggctgcacccttcttocccacdtocagcuctgggccaccgccatttoctctgaagcaggtgaaggtca gocccottoctgaggctgcaccctcttocccacctgcagagcgcctccaccggcatttoctctgaagcaggtgaaggtgaaggtcacccccctcttggcgcctacacgggagacgacgtccgcatcgtcatcgtgac ctggaggaccaacccctgctgtccaaaacaccactgcttcctacccaggtggcgactgcccccacaccttccctgcccc gtcctgagtgececttectgtectaagecectgetetettetgagececttecectgteetgaggaceettececatee tgagccccttccctgtcctaagcctgacgcctgcactgggccctccggccctcccctgcccaggcagctggtggt9ggc gctaatcctcctgagtgctggacctcattaaagtgcatggaaatcactggtgtgcatcgctgtgtttctggttgtggatg tcactgggagagaaggggtccaggtgtgctgaggacacctgccacagtgtgaggtcctagccctcaaggcacaagccagt 70 caccgtgggacggggcctctgggcagccctggtccccgagctggctt (SEQ ID NO:12012) ccaggatgctgaatctgctgctgctggcgctgcccgtcctggcgagccgcgcctacgcggcccttgccccaggccaggcc ctgcagcgagtgggcatcgttgggggtcaggaggcccccaggagcaagtggccctggcaggtgagcctgagagtccacgg cccatactggatgcacttctgcgggggctccctcatccacccccagtgggtgctgaccgcagcgcactgcgtgggaccgg acgtcaaggatctggccgccctcagggtgcaactgcgggagcagcacctctactaccaggaccagctgctgccggtcagc 75 aggatcalegtgcaccacagttctacaccgccagatcggagcggacatcgccctgctggagctggaggagcggtgaa ggtctccagccacgtccacacggtcaccctgcccctgcctcagagaccttccccccggggatgccgtgctgggtcactg gctggggcgatgtggacaatgatgagcgcctcccaccgccatttcctctgaagcaggtgaaggtccccataatggaaaac cacatttgtgacgcaaaataccaccttggcgcctacacgggagacgacgtccgcatcgtccgtgacgacatgctgtgtgc cgggaacacccggagggactcatgccaggcgactccggagggcccctggtgtgcaaggtgaatggcacctggctgcagg tggatccaccactatgtccccaaaaagccgtgagtcaggcctgggtgtgccacctgggtcactggaggaccaaccettgctgtccaaaaccactgcttcctacccaggtggcgactgcccccacaccttccctgcccgtcctgagtgccccttcct

gtectaageceectgetetettetgageeeetteeetgteetgaggaeeetteeeateetgageeeeetteeetgtee taageetgaegeetgeaetgeteeggeeeteeeetgeeeaggeagetggtggtggtgggegetaateeteetgagtgetggaeeteattaaagtgcatggaaatea (SEQ ID NO:12013)

- cactatgtccccaaaaagccgtgagtcaggcctgggttggccacctgggtcactggaggaccaacccctgctgtccaaaa
 caccactgcttcctacccaggtggcgactgcccacacacttccctgccccgtcctgagtgccccttcctgtcctaagc
 cccctgctctcttctgagccccttccctgtcctgaggacccttccctatcctgagccccttccctgtcctaagcctga
 cgcctgcaccgggccctccagccctgcccagatagctggtggtgggcgctaatcctcctgagtgctggacctcat
 taaagtgcatggaaatc (SEQ ID NO:12015)

- ataatggaaaaccacatttgtgacgcaaaataccaccttggcgcctacacgggagacgacgccgcatcatccgtgacga
 catgctgtgtgccgggaacagccagagggactcctgcaagggggactctggagggccccttggtgtgcaaggtgaatggca
 cctggctacaggcgggggtggtcagctgggacgagggcgtgtgcccagccaaccggcctggcatctacacccgtgtcacc
 tactacttggactggatccaccactatgtccccaaaaagccgtgagtcaggcctgggtgtgccacctgggtcactggaga
 accaaccctgctgtccaaaacaccactgcttcctacccaggtggcgactgcccacaccttccctgccccgtcctga
 gtgcccttcctgtcctaagcccctgctctctcttctgagccccttccctgtcctgaggacccttcccatcctgagccc
- 75 gtgccctttcctgtcctaagcccctgctctttttgagcccctttccctgtaggagcccttccctatcctgagccc
 ccttccctgtcctaagcctgacgcctgctccggccctgccccggccaggcagctggtggtggtggtgatatcctcc
 tgagtgctggacctcattaaagtgcatggaaatc (SEQ ID NO:12017)
 gctgcccgtcctggcgagccgcctacgcggccctgcccaggccaggccctgcaggagtgggcatcgttgggggt

 ${\tt cctcccaccgccatttcctctgaagcaggtgaaggtccccataatggaaaaccacatttgtgacgcaaaataccaccttg}$ gegectacaegggagaegaegteegeategteegtgaegaeatgetgtgteegggaacaeeeggagggaeteatgeeag ggcgactccggagggcccctggtgtgcaaggtgaatggcacctggctgcaggcggggtggtcagcctggggcgaggggtg tgcccagcccaaccggcctggcatctacacccgtgtcacctactacttggactggatccaccactatgtccccaaaaagc cgtgagtcaggcctggggtgtccacctgggtcactggaggaccagccctcctgtccaaaacaccactgcttcctaccca ggcggcgactgcccccacaccttccctgccccgtcctgagtgccccttcctgtcctaagcccctgctctcttctgagc cccttcccctqtcctgaggacccttccccatcctgagcccccttccctgtcctaagcctgacgcctgcaccgggccctcc ggccctcccctgcccaggcagctggtggtgggcgctaatcc (SEQ ID NO:12018) atctgqaagcataaatgggqaqgqqaqagcccactgggtagaaggaacagggagcggccagggtaagtccccactctcag 10 agacoctgacatcagcgtcacctggagcagagtggcccagcttcagactcagagcaccaagacccaggcctgcaggcctg gacccaccccggtcccccgtcccagetccattcttcaccccacattctgtagcccccagccctgccctgtgaggcccgg ccaggcccacgatgctcctccttgctcccagatgctgaatctgctgctgctgcgcgctgcccgtcctggcgagccgcgc tacgeggeceetggtgagteceageeggggtecaceetgeceeteaeeaettecacaggteagggeetgggteet ggggaggtcgggctggcccccacacagggaaggyetgggcccaggcctggggctgcttcctggtcctgacctggcacctg 15 ccccagccccaggccaggccctgcagcgagtgggcatcgttgggggtcaggaggcccccaggagcaagtggccctggcag gtgagcetgagagteegegacegataetggatgcaettetgegggggeteeeteateeaeeeeeagtgggtgetgaeege agcgcactgcgtgggaccgtgagtctcccggggcctggagggtggggaagggctggatgtgagcctggctcccgggtg ctcctgggggctgcccagggccctgagtgggatcctccgctgcccagggacgtcaaggatctggccgccctcagggtgca actgogggagcagcacctctactaccaggaccagctgctgccggtcagcaggatcatcgtgcacccacagttctacaccg 20 ${\tt cccagateggageggacategcctgctggaggagegggtgaacggtgaacgtctccagccacgtccacacggtcaccctg}$ cccctgcctcagagaccttccccccggggatgccgtgctgggtcactgggctggggcgatgtggacaatgatggtgggtc tggggacagtggaggtggggccagggtcttagccacagcccagcccctgggctccctctgggctccaggtgggggttgcc cggccccctcctgaggctgcaccctcttccccacctgcagagcgcctcccaccgccatttcctctgaagcaggtgaaggt ccccataatggaaaaccacatttgtgacgcaaaataccaccttggcgcctacacgggagacgacgtccgcatcgtccgtg 25 teattagetetagettgetgetgetggttggttagetggtggtggtggtggtggtggtggtggtcaggcctaggcatctagcatctactactactactactagttgcatctagcatctagg cactggagagccagccctcctgtccaaaacaccactgcttcctacccaggtggcgactgccccccacaccttccctgcc ccgtcctgagtgccccttcctgtcctaagccccctgctctcttctgagccccttcccctgtcctgaggacccttccccat 30 cctgagcccccttccctgtcctaagcctgacgcctgcaccgggccctccggccctcccctgcccaggcagctggtgg gcgctaatcctcctgagtgctggacctcattaaagtgcatggaaatcactggtgtgcatcgctgtgtttctggttgtgga tgtcactgggaqaqaaggggtccaggtgtgctgaggacacctgccacagtgtgaggtcctagccctcaaggcacagccag 35 cacacagagccactcgggcaactcagttgattataaaggacagccaggtccctgcaaccgggtcaagacagaaatggtca ccgggaaccccagggctgcccatcacgagcccctaccccacgcttcccacgagctcttctcccggccctcccgtccatgc ttgtgctttgcctaattgtttgcttttgagaacgggattg (SEQ ID NO:12019) aattatgggtttgttatcgtttttgttcgttgctggttgtacgtgacgggagttcagctttttgctgcgggacggcagag 40 ctctcgcatccccatggtgctgattggtccgcctcccaggcctgacccaatcggagcattcctaggaggagcggccccag agegeetgaetegggggteeeagageeetetgeacaeeacageeeeggtgteeeegtgtgteeetgggtteteeeageee tggtgtcccctgagtctcttcttcaccgtcagccctggtgtctcccgtgtccctgccacaccctcatccctggtgtcccc cgtcaccccatccctcacctcctgggetcctgaaggtcccatcttgtgggcctcattcatggaaccaggacggggcagg 50 gggacagtgtcagcgctgaatgggatggaggacacagggagctggggccggggatgagaccatggggagctggggctggg gctgggactagtccatggggagctgggagctgaagttgggggtgagtccatggggagctggggctgggcctcctggggttgc acctgcactcctctctqctcttccctctqcqtatgaagctcaqatcccatgataaggaggcacctgcagaccaggggacc tgcacggacagccccagaggtggacattgaggactcgtaggaggacttgggtctcatacggcgggtggggagcaggggccc cttcctggctgaggacacttggtgctgtccctctcaaggctgtttccccatctgacaaaggggtctcatgtgagcccc 55 aaccaagtgagtcgaggagggctggcccaacccccgtggatttggagtccgtaggaggggtgtcacccgtcacgtcccca cccgtgggcaccttcccgtctcttggagcgtggcccatggacatgagttcctcacccgtgtccctcttggggaaacagg tttcaggagcgacgggtcttgtagcctggggcagccaggccacctgggtgcagctatgcctgaaggcctcctggcaccga gacaggggcaggagcagatcccaccagcgggaaggtggtgcgttctgatgctgggatccaccagctgacaggtggagctg 60 gttacacgggggccetgggtctgagtcatccacttcctccgagtctggatggacccagcgccctcctccgcccc teetgatetggaaggataaatggggaggggagageeegetgggtagaaggaacagggagtggeeagggtaagteeetaet ctcagagaccctgacatcagtgtcacctggagcagagtggcccagcctcagactcagagcaccaagacccaggcccgcag gcctggacccaccccggtccccccgtcccagctccattcttcaccccacaatctgtagcccccagccctgccctgtgagg cccggccaggccacgatgctcctccttgctccccagatgctgagcctgctgctgctggcgctgcccgtcctggcgagcc 65 cggcctacgcggcccctggtgagtcccagccggggtccaccctgcccctcaccacattccacaggtcagggcctgggtgg głłctggggaggctgggctggcccccacacagggaagggctgggcccaggcgtggggctgcttcctggtcctgacctggc acctgccccagccccagtccaggccctgcagcaagcgggtatcgtcgggggtcaggaggccccaggagcaagtggccctggcaggtgagcctgagagtccgcgaccgatactggatgcacttctgtgggggctccctcatccaccccagtgggtgctg accgcggcgcactgcctgggaccgtgagtctcccagggcctggaggtgggcaagggctggatgtgagccctggctccc 70 gggtctggggacagtgggaggtggggcagggtcttagccacaggccatttccctgggctccaggtggggttgccca gggtctcaggctgcacctcttccccactgcagagccctccacaggccatttcccctgaagcaggtgaaggtccca 75 taatggaaaaccacatttgtgacgcaaaataccaccttggcgcctacacgggagacgacgtccgcatcatccgtgacgac acteccaggeetgtteggegagegetgacetetgacetteccagggegactetggagggeeeetggtgtgcaaggtgaat ggcacctggctacaggcgggggtggtcagctgggacgagggctgtgcccagcccaaccggcctggcatctacacccgtgt 80 cacctactacttggactggatccaccactatgtccccaaaaagccgtgagtcaggcctggggtgtccacctgggtcactg qagagccagccctcctgtccaaaacaccactgcttcctacccaggtggcgactgccccccacaccttccctgccccgtc ctgagtgeceetteetgteetaageeeetgetetetetetgageeetteeeetgteetgaggaeeetteeeeateetga

gcccccttccctgtcctaagcctgacgcctgcactgggccctccggccctcccctgcccaggcagctggtggtggcgctaatcctcctgagtgctggacctcattaaagtgcatggaaatcactggtgtgcatcgctgtgtttctggttgtggatgtca ctgggaagagagggtccaggtgtgctgaggacacctgccacagtggaggtcctagccctcaaggcacagcagtcacagtgggacggggcctcctgggcagcctggtcacag agagccactcgggcaactcagttgattataaaggacagccaagtccctgcaaccgggtcaagacagagaatggtcgccgg gagcccagggctgccatcacgagccctaccccacgcttcccacgagctcttctcccggcccctctgccactgcttg tgctttgccctagttgtttgctttgagacaggatctcgctgtgtcatccaggctgaagtgcagtggtgtgatcagggctc actgtagccttgaactcctgggctcaagogatcctcccatcttggcctcccatatagctgggccacaggagtgagccacc acgcccagttaatttttgtattttcagtagagatggggtttcgccatgttggccagtctggtctcgaactcctgacctca 10 agtgatctgcccgcctcggcctcccaaagtgctgggatgacaggcgtgagccaccgcacccagcctgagtttgacatttt caaattcattttgaggtctttctctacatcaatacatgagccctccggcgtccggcgagtgttgcattttatcccgggctc ttgtttgcattttatatttgaacatgattacattcaggaatgaaatgcggggctgttctggttgaaaacactctctaaa gaaacattcactctttccatccaactgtcagatgcagagatgtgcatttagtctctccaatctctgcaaatgacctctgt cotcacaaggggtggactcgacttccagcgcctctccagccccacgtgacctctgcctctgcagcccctgaaggcccat 15 cccatcccacttctagggatcacagagacagcaggggtgacccccagggaacactgagcccctagaagcacttccaca cgcccactggaggttttgcggggtgggagtcggagggatgagaccccgaagggaagcaagacggcccctcaggacagggc tgccggtgtaaggaaaggtggacagcaggggccggtcactgggtggaggggagggcaggctccagccccagagcttccc aaattagatctaagatccctgggaagctcagtgaagctcagcgcagtgacactggcagatgtgagcgtcagcttcagcag 20 gaagggteteteaggaegtgaeaggeaggetgetggeeaggetgeageeacetgegttttgaetgggaegggggeaeet gatccaaggtcacccacgtggctgccggcaggaggccctggttccccgtcacaagggggtgtgagggggaaggccaagtg gtggccacanggttnccaccgagagggacagtgcccaagttggccaagccacctnggacaagaaacaatnccaagtctt nccaaggtccttggacaacaaggagaanccccccagcttgggggcnattaaccaagggccangncccccttcccggttctggaccaccccggtcccccggtcccagcttccattcttcaccccaatctgtagcccccagccctgccctgtgaggc 25 ccggccaggccacgatgctcctccttgctccccagatgctgaatctgctgctgctgctgcgccgtcctggcgagccg the transpart of the control of the 30 aggetgeaccetettecceacctgeagagegeeteccaccgecatttectetgaageaggtgaaggteeccataatggaa aaccacatttgtgacgcaaaataccaccttggcgcctacacgggagacgacgtccgcatcgtccgtacgtcacatgctgtg tgccgggaacacccgggagggactcatgccaggtgggccccgcgtgtcccccgccccccgcaccccaacccccatcccag 35 gcctgttcggcgagcgctgacctctgaccttcccagggcgactccggagggcccctggtgtgcaaggtgaatggcacctg gctgcaggcgggcgtggtcagctggggcgagggctgtgcccagcccaaccggcctggcatctacacccgtgtcacctact acttggactggatccaccactatgtccccaaaaagccgtgagtcaggcctgggttggccacctgggtcactgggaggacca acccetgetgtecaaaacaccactgettectacccaggtggegactgeeccccacacettecctgeeccgtectgagtge cccttcctgtcctaagcccctgctctcttctgagccccttcccctgtcctgaggacccttcccatcctgagcccctt ccctgtcctaagcctgacgcctgcactgggccctccggccctcccctgcccaggcagctggtggtgggcgctaatcctcc tgagtgetggaceteattaaagtgeatggaaateaetggtgtgeategetgtgttttetggttgtggatgteaetgggaga gaaggggtccaggtgtgctgaggacacctgccacagtgtgaggtcctagccctcaaggcacaagccagtcaccgtgggac ggggcctctgggcagccctggtccccgagctggcttccaggatgctgaatctgctgctgctgctgccgctgcccgtcctggcg agccgcgcctacgcggcccctgccccaggccaggccctgcagcgagtgggcatcgttggggtcaggaggcccccaggag caagtggccctggcaggtgagcctgagagtccacggcccatactggatgcacttctgcgggggctccctcatccacccc agtgggtgctgaccgcactgcgtgggaccggacgtcaaggatctggccgcctcaaggtgcaactgcgggagcagcactctactactaccagggtgcaactgcgggagcag ggacatcgccctgctggagctggaggagccggtgaaggtctccagccacgtccacacggtcaccctgccccctgcctcag agacetteccccggggatgccgtgctgggtcactggctgggcgatgtggacaatgatgagcgcctcccaccgccattt 50 cctctgaagcaggtgaaggtccccataatggaaaaccacatttgtgacgcaaaataccaccttggcgcctacacqqqaqa cgacgtccgcatcgtccgtgacgacatgctgtgtgccgggaacacccggagggactcatgccagggcgactccggagggc cctggcatctacacccgtgtcacctactacttggactggatccaccactatgtccccaaaaagccgtgagtcaggcctgg gtgtgccacctgggtcactggaggaccaacccctgctgtccaaaacaccactgcttcctacccaggtggcgactgcccc 55 aggaccettecceatectgageceeettecetgteetaageetgaegeetgeaetgeteeggeeeteeeetgeeeaggea gctggtggtgggcgctaatcctcctgagtgctggacctcattaaagtgcatggaaatcaggccaggatgctgaatctgct getgetggegetgeeegteetggegageegeetaegeggeeeetgeeeeaggeeaggeeetgeagegagtgggeateg ttgggggtcaggaggcccccaggagcaagtggccctggcaggtgagcctgagagtccacggcccatactggatgcacttc 60 cctcagggtgcaactgcgggagcagcactctactaccaggaccagctgctgccggtcagcaggatcatcgtgcacccac agttetacacegeccagateggageggaeategecetgetggagetggaggeggtgaaggtetecagecaegtecae aggttaaccetggccagattggagusgaacttccccccggggatgccgcataatgggtaactaggggaaaattgtggggacaa tgatgagcgcctcccaccgcatttcctctgaagcaggtgaaggtccccataatggaaaaccacatttgtgacgcaaaat accaccttggcgcctacacgggagacgacgtccgcatcgtccgtgacgacatgctgtgtgtccgggaacacccggagggac 65 ccaaaaagccgtgagtcaggcctgggttggcacctgggtcactggagaccaacccctgctgtccaaaaccccdctgct tcctacccaggtggcgactgcccccacaccttccctgccccgtcctgagtgccccttcctgtcctaagcccctgctct cttctgagccccttcccctgtcctgaggacccttccccatcctgagcccccttccctgtcctaagcctgacgcctgcacc 70 gggccttccggccctcccctgcccaggcagctggtggtggtggcctaatcctcctgagtgctggacctcattaaagtgcat ggaatgaatetgetgetgetgeegetgeegteetggegageegegeetaegeggeeeetgeeeaggeeaggeeetgea gcgagtgggcatcgtcgggggtcaggaggcccccaggagcaagtggccctgggcaggtgagcctgagagtccacggcccat actggatgcacttctgcgggggctccctcatccacccccagtgggtgctgaccgcagcgcactgcgtgggaccggacgtc 75 aaggatctggccgccctcagggtgcaactgcgggagcagcactctactaccaggaccagctgctgccggtcagcaggat catcgtgcacccacagttctacaccgcccagatcggagcggacatcgccctgctggaggctggaggagccggtgaacgtct ggcgatgtggachatgatgagcgcctcccaccgccatttcctctgaagcaggtgaaggtccccataatggaaaaccacat ttgtgacgcaaaataccaccttggcgcctacacgggagacgacgtccgcatcgtccgtgacgacatgctgtgtgccggga 80 acacccggagggactcatgccagggggactccggagggcccctggtgtgcaaggtgaatggcacctggctgcaggcgggc gtggtcagctggggcgagggctgtgccagccaaccggcctggcatctacacccgtgtcacctactacttggactggatccaccactatgtccccaaaaagccgtgagtcaggcctgggttggccacctgggtcactggaggaccaaccctgctgtcc

as a a acacca ctg ctt cct acc cagg t g g e g a ctg ccc cca cacct t ccctg ccccg t cct g a g t g ccct t cct g t cct accept cct g a g t g cccct t cct g t cct accept cct g a g t g cccct t cct g t cct accept g t cct accaagcccctgctcttcttgagccccttcccctgtcctgaggacccttccctatcctgagccccttccctgtcctaagc ctgacgcetgcaccgggccttccagccetcccctgcccagatagetggtggtggtggcgctaatcctcctgagtgctggacc gcagcccacacacagaggcatcggggtggcggggcacgtgttacacgggggccctgggtctgagtcatcacttcct Ccgagtctggatgggaggacccagegecectectccgcccctcctgatctggaaggataaatggggaggggagagccac tgggtagaaggaacagggagtggccagggtaagtccccactctcagagaccctgacatcagcgtcacctggagcagagtg ttcaccccacaatctgtagcccccagccctgccctgtgaggcccggccaggccacgatgctcctccttgctccccagat gctgaatctgctgctgctggcgctgcccgtcctggcgagccgcgctacggggcccctggtgagtcccagccggggtcca gctgggccaggcctggggctgcttcctggtcctgacctggcacctgcccaagcccaggccaggccatgcagcgagtgg gcatcgtcgggggtcaggaggcccccaggagcaagtggccctggcaggtgagcctgagagtccacggcccatactggatg cacttctgcgggggetecctcatccacceceagtgggtgctgaccgcagegcactgcgtgggaccgtqagtctcccgggg 15 cctggagggtggggaagggctggatgtgagcctggctcccgggtgctcctgggggctgcccagggccctgagtgggat cetecgetgeccagggaegteaaggatetggeegeeeteagggtgeaactgegggageageacetetactaceaggaeea gctgctgccggtcagcaggatcatcgtgcacccacagttctacaccgcccagatcggagcggacatcgccctgctggagc tggaggagccggtgaacgtctccagccacgtccacacggtcaccctgccccctgcctcagagaccttcccccccggggatg ccgtgctgggtcactggctggggcgatgtggacaatgatggtgggtctggggacagtggaggtggggccagggtcttagc cacagcccagcccctgggtccctctgggctccaggtgggggttgcccggcccctcctgaggctgcaccctcttccccacctgcagagcgcctcccaccgccatttcctctgaagcaggtgaaggtccccataatggaaaaccacatttgtgacgcaaaa taccaccttggcgcctacacgggagacgccgcctcgcttcgtccgtgacgacatgctgtgtgccggggaacacccggagggactcatgccaggtgggccccgcctgtcccccgcccccaccccactcccaggcctgttcggcgagcgctgac 25 30 ggacacctgccacagtgtgaggtcctagccctcaaggcacagccagtcaccgtgggacggaattccgtggccaggatgct gagectgetgetgetggegetgecegteetggegageegegeetaegeggeeeetgeeeagteeaggeeetgeageaag cgggtatcgtcgggggtcaggaggcccccaggagcaagtggccctggcaggtgagcctgagagtccgcgaccgatactgg atgcacttctgcgggggctccctcatccaccccagtgggtgctgaccgcggcgcactgcctgggaccggacgtcaagga 35 tetggccaccttcagggtgcaactgcgggagcagcacctctactaccaggaccagctgctgccagtcagcaggatcatcg tgcacccacagttctacatccatccagactggagcggatatcgccctgctggagctggaggagcccgtgaacatctccagc cgcgtccacacggtcatgctgccccctgcctcggagacettccccccggggatgccgtgctgggtcactggctgggcga tgtggacaatgatgagcccctcccaccgccatttcccctgaagcaggtgaaggtccccataatggaaaaccacatttgtg acgcaaaataccaccttggcgcctacacgggagacgtccgcatcatccgtgacgacatgctgtgtgccgggaacagc cagetggacgagggetgtgeccaagecgacetggetgtgtgtaaggggtetetggtgtgtgget cagetgggacgagggetgtgeccaagecgacetggetgtgetetacaccegtgteaectactacttggatgcaccac actatgtccccaaaaagccgtgagtcaggcctgggtgtgccacctgggtcactggaggaccaaccctgctgtccaaaac accactgettcctacccaggtggcgactgcccccacaccttccctgcccgtcctgagtgccccttcctgtcctaagcc ccctgctctcttctgagccccttcccctgtcctgaggacccttccccatcctgagccccttccctgtcctaagcctgac gcctgcactgctccggccctcccctgcccaggcagctggtggtgggcgctaatcctcctgagtgctggacctcattaaag tgcatggaaatcgctgcccgtcctggcgagccgcgcctacgcggccctgcccaggccaggccaggccaggagtgggca tegttgggggteaggaggeeeeeaggagcaagtggeeetggeaggtgageetgagagteegegaeegataetggatgeae ttctgcgggggctccctcatccacccccagtgggtgctgaccgcagcgcactgcgtgggaccggacgtcaaggatctggc cgccttcagggtgcaactgcgggagcagcacctctactactaggaccagctgctgccggtcagcaggatcatcgtgcacc 50 cacagttctacaccgcccagatcggagcggacatcgcctgctggagctggagcagcggtgaaggtctccagccacgtc caatgatgagcgcctcccaccgccatttcctctgaagcaggtgaaggtccccataatggaaaaccacatttgtgacgcaa aataccaccttggcgcctacacgggagacgacgtccgcatcgtccgtgacgacatgctgtgtgccgggaacacccggagg gactcatgccaggggactccggagggcccctggtgtgcaaggtgaatggcacctggctgcaggcggggcgtggtcagctg 55 gggegagggetgtgeecageccaaceggeetggeatetacaeeegtgteacetaetaettggaetggatecaeeactatg teeccaaaaageegtgagteaggeetggggtgteeacetgggteactggaggaccageeetteetgteeaaaaeaceact gettectacecaggeggegactgeccccaacacettecetgecccgtectgagtgeccettectgtectaagecccetge tetettetgageceetteceetgteetgaggaceetteeeeateetgageceeetteeetgteetaageetgaegeetge accgggccctccggccctcccctgcccaggcagctggtggtgggcgctaatccatctggaagcataaatggggaggggag 60 65 ggaccagctgctgcggtcagcaggatcatcctatccacaggtctacaccgccagatcggagcagcagcactctactacca tggatcctccgctgccaggacgtcatcatcatcaccacagttctacccaggtgcacccagatcggagcagcaccttactacca 70 iggagetggaggageeggtgaacgteteeageeacgteeacacggeegeetgeeeetgeeeetgeeeetgee gggatgccgtgctgggtcactggctggggcgatgtggacaatgatggtgggtctggggacagtggaggtggggccagggt cttagecacageccagecectgggeteectetgggeteeaggtgggggttgeeeggeeeecteetgaggetgeaeeetet tccccactgcagagcgcctcccaccgccatttcctctgaagcaggtgaaggtccccataatggaaaaccacatttgtga 75 cgcaaaataccaccttggcgcctacacgggagacgacgtccgcatcgtccgtgacgacatgctgtgtgccgggaacaccc ggagggactcatgccaggtgggcccgcctgtcccccgcccccccaacccccactcccaggcctgttcggcgag tggtcagctggggcgagggctgtgcccagcccaaccggcctggcatctacacccgtgtcacctactacttggactggatc aaacaccactgcttcctacccaggtggcgactgcccccacaccttccctgccccgtcctgagtgccccttcctgtccta agcccctgctctctctgagccccttcccctgtcctgaggacccttccccatcctgagcccccttccctgtcctaagcc tgacgcctgcaccgggccctccggccctcccctgcccaggcagctggtggtggtggcgctaatcctcctgagtgctggacct

gtgctgaggacacctgccacagtgtgaggtcctagccctcaaggcacagccagtcaccgtgggacgggggcctcctgggca gccctggtccccgaggctggcttctccccaacagatgcatccagcattcgggtcacacagagccactcgggcaactcagt tgattataaaggacagccaggtccctgcaaccgggtcaagacagaaatggtcaccgggaaccccagggctgcccatcacg agecectaccccacgetteccacgagetetteteccggeceteccgtecatgettgtgetttgcetaattgtttgetttt gagaacgggattg (SEQ ID NO:12020) ttctccttctccccaacagttccccagggacctctctctaatcagccctctggcccaggcagtcagatcatcttctcgaa ccccgagtgacaagcctgtagcccatgttgtagcaaaccctcaagctgaggggcagctccagtggctgaaccgccgggcc 10 accagaccaaggtcaacctcctctctgccatcaagagcccctgccagagggagaccccagagggggctgaggccaagccc tggtatgagcccatctatctgggaggggtcttccagctggagaagggtgaccgactcagcgctgagatcaatcggcccga ctatctcgactttgccgagtctgggcaggtctactttgggatcattgccctgtgaggaggacgaacatccaaccttccca aacgcctcccctgcccaatccctttattaccccctccttcagacaccctcaacctcttctggctcaaaaagagaattgg 15 gggcttagggtcggaacccaagcttagaactttaagcaacaagaccaccacttcgaaacctgggattcaggaatgtgtgg cctgcacagtgaattgctggcaaccactaagaattcaaactggggcctccagaactcactggggcctacagctttgatcc ctgacatctggaatctggagaccagggagcctttggttctggccagaatgctgcaggacttgagaagacctcacctagaa attgacacaagtggaccttaggccttcctctccagatgtttccagacttccttgagacacggagcccagccctccca 20 tatttatttgggagaccggggtatcctgggggacccaatgtaggagctgccttggctcagacatgttttccgtgaaaacg gagetgaacaataggetgtteccatgtageceeetggeetetgtgeettettttgattatgttttttaaaatatttatet gattaagttgtctaaacaatgctgatttggtgaccaactgtcactcattgctgagcctctgctccccaggggagttgtgt ctgtaatcgccctactattcagtggcgagaaataaagtttgctt (SEQ ID NO:12021) tacgggccgggcactcccgagctgctgctcgagggcgccgagacggtgactccagtgctggacccggccaggagacaagg gtacgggcctctctggtacacgagcgtggggttcggcggcctggtgcagctccggaggggcgagaggggtgtacgtcaaca tcagtcaccccgatatggtggacttcgcgagagggaagaccttctttggggccgtgatggtggggtgagggaatatgagt gcgtggtgcgagtgcgtgaatattgggggnccggacgcccaggaccccatggcagtgggaaaaatgtaggagactgtttg gaaattgattttgaacctgatgaaaataaagaatggaaagcttcagtgctgcgataagatgctgagttgcgacacacg tcttaattcagggtgggtgcacggggtgcacgggttaaatattctcagtactcttctggttgcttgaaacaattcatcacaac 30 gcaagcaccactcagaaaggcccagcagcagagtaagcccctatcatgacagaggaatgaagcctggaggggccccgcac ttctccccctagagctgcctgaaggcctctctgtctcctacccgacagtcaactcttctcctccaaggagcttaattcaa 35 gcctgtggtgcctgaaaacaccaggaagttctggggaggaggaaaaaccgatgcccacttagggtgtcccatttagggt gagacggaaaatcctcacctttttttcacactttaggtcccccttcccaaaagtgagtaagtgggtgcttctgggatg agtaacagtgtcccccattacttcatggctgactttcagccacaggctggaggaggcagagggtgacccaaggccctatc 40 $a agc cta at {\tt tttccg} a act {\tt tcagttggggctcccagtctagggggctcaatttccgtctccatattttgtttttggaatt}$ attattttttgagacagggtctcgttctgtcacccagacggggtacagtggcatgatcatagcttactgtaacctcaa actcctgggcttgagtgatcctcctgcctcagcctcctgaggagctaggattacaggcatgcaccactacacctgactaa tetttaatttttttetagaaacaaggtettgetatgttgeacaggetggtettgaactagtgggeteaagtggteetee cacctcagcctcccaaagtgttgggataacaggcatgagccactgcgccccacccttatttgtctttgactctctccaga agageetteateeagggagggggtgettttetettteeggattaeeeaceteteaceteteeeetteateacaaaaga ccagtgggaccaagccggcatgtgagtccttcacccacatcttattcctatgtttcattctttttaaaaaatagagaca ggatctcactatgttgcccaggttgctctggaactcctgggttcaagcgatcctctaccttggccttgcaaagtggtag gattacaggtgcatgccaccacgtccggcagttcggttccttgttctttattgtcctcagtctcttcgatttcacccact 50 ataggttaagtggctggttcaggttgcagagttaggacagggtgatttgaagcctagacacccgaatctctggaagtccc ttggctgtgtgtgattcaggtacctgagaatgcggctcctctccagctctctccggactgctgccagctgcaacagccgga aatctcacctgagctgcaggattttcccagcaaggattggaattcccagagttggaaattcccatgccctgagggagagg taattaggttcaggctcttgtttcctgggggatggggaatattctgtttgggctttgtttatgtagggtctccagggccct 55 agtagggcgattacagacacaactccctggggagcagaggcctcagcaatgagtgacagttggtcaccaaatcagcattg tttagacaacttaatcagataatattttaaaaaacataatcaaaagaaggcacagaggccaggggctacatgggaacag cctattgttcagcctccgttttcacggaaaacatgtctgagccaaggcagctcctacattgggtcccccaggataccccg 60 gagggagctggctccatggggagggctgggctccgtgtctcaaggaagtctggaaacatctggagagaggaaggcctaag gtccacttgtgtcaatttctaggtgaggtcttctcaagtcctgcagcattctggccagaaccaaaggctccctggtctcc
agattccagatgtcaggatcaaagctgtaggccccagtgagttctggaggccccagtttgaattcttagtggttgccag
cacttcactgtgcaggccacaattctctgaatcccaggtttcgaagtggtggtcttgttgcttaaagttctaagcttggg
ttccgaccctaagccccaattctctttttggaccagaagaggttgagggtgtctgaaggagggggtaataaagggattg
gggcagggggggggttttgggaaggttggatgttcgtcctcctcacagggcaatgatcccaaagtagacctgcccagactc 65 ggcaaagtcgagatagtcgggccgattgatctcagcgctgagtcggtcacccttctccagctggaagacccctcccagat agatgggctcataccagggcttggcctcagcccctctgggggtctccctctggcaggggctcttgatggcagagagg 70 caccettecettgageteagegagteetteteacattgteteeaagttetgeetaccateageeggetteaateeeeaa 75 atcctagccctccaagttccaagacacatcctcagagctcttacctacaacatgggctacaggcttgtcactcggggttc gagaagatgatcctgaagaggagagaaaagaaaagatgagaccttaaacttcctagaaaataccccctactttca cctccatccatcctcccccaagaccaaaactttaaatttcccccactgctttccataccggtactaaccctacccccaa ጸበ tttccctgagtgtcttctgtgtgccagaccctatcttcttcttcttcttatctcccccatctctctctcttagctgtcat atttcccgctctttctgtctcaccatctttattcatatcacttgtttcttcccccatctctcttctcacaccccacatct

gtotccatttccccttgggtgggagagtggatgaaggctggccaggcactcacctcttccctctggggagccgatcactcg 10 ccgtccccatgcccctcaaaacctattgcctccatttcttttggggaccaggtctgtgggtctgtttccttctaacttcca gacaggatgcaggaaaaagatagaactagaactgggagggcttcagaaagctgagtccgttgagggagagaaaacgggg 15 ttggagggaaaagctgtgttgagtcctgaggcctgtgttttgggccctgcggggagaaggagctgggggcttggtggcagg cttgaggcctcaggaaaggctgggtgcgggtagcagggacaagcctgggacagccccggggagtgaaatcacccccggga attcacagaccccactggggcaggcctcttctttcattctgacccggagactcataatgcttggttcagtcttggcttc caaggaactetggggtccctgatttttttcatgaagctctcacttctcagggccccagtgtgtggccatatcttcttaaa cgtcccctgtattccatacctggaggtcctggaggctctttcactccctggggccctctacatggccctgtcttcgttaa 20 gtgggggtccccatactcgacttccatagccctggacattctcctacccattgctgtggtcacatctccccagaggtctc ctgtaacccattcctcagagccgctacatgtggccatatctcccaggagctccctgaccccgcccctccagaccctgac tttteettegtetteteagetteteetttgetteeeetgeageagtetggeggeeteacetggtgagteeateaeatate cctgaagetetetgageeettateettttgtteteeecacagetettgeteeetttgageeetetgteeeteeatt 25 gcttcatcgagggtgcagatgcctccgtgtggggctctggtcggcagctggctttcagagcctttccctgccttctgggg ccctgtgatccctcatgcctacttctttctctttggtcagccttgtggcgcatgccctctcactcttcatctcttgggcc 30 tactgggaggagaagagctggacctcatgggccaggtagagtggggaggaggtggccttgggagagtaggctttcccaga 35 gaagaccacctgggagtagacgaagtagatgccactggtggggaccaggaggaattgttgctcaaggagaaaccatcct tgggggtgggagatcaggggtctggatcagaggtctcaatcoctgaggaagtgggcactgaacaactgagttcctggggg 40 ggttcctgaggcaggggtaggaggagagctggtgggacatgtctgggaggtcaggtggatgtttaccaatgaggtgagc agcaggtttgagggtgctgtgggcaagatgcatcttggggtgctgacggcagtctgggcagctgaaggtgtgaggccaa caccagggagcccctaggggagaacagagttgagggggctctagggctcaaggtttggctgagccaccccagcagcccc gageggggeggggcacgegggggaagacagacetecegecetgggagacagcacececegaeeecegagagagagatega ggaatcatggcagaaacagagaatgtgtgacagagacaatgagactgacagatggagagtcagagacagagaaaggaaacc gagggcaggacactgcggggcggtagtccaaagcacgaagcacgggcagcccaaggagatggggcaggagagcctcacct 50 gctgtgcggacccctgggcccggacgctcaggtccctttatagaggaagcggcagtggcagcgtggcagcggcgg gttctaggtcggggctggggcccggggaagccccagggcttagaagatactgctgttttcagtcaaaggcaggaaaggct gaggcctaggagagaaccacaggctgggggttcaggcgactgagttctgggaaagggagtcgggtcaggggaatcgtgg ctgggagggccagggagtggggtcaggcctagagttccaaagaagggacagtcaattcagagaggaggcagttgagcagc tggggtgtgagctggaggcccggttccctgaagagcaatcatatataacatctctgcacccttggctgagtacaggcttc 55 tetetttgeccattteettetettgtaccettgteettgteccaaacactcaaatcatacttgteecagtatacggaet ttccagcccatctggcaggtttcacatcaagaaggtccattatatatccccttcatcggggacattctggtgtttgcctc ttgtccaggtgaaaatattaatggatccccttccactcttgaaagtgtcctagtttggaagataaatttttttggtcccc ttactcagagatgatgctggacagtcaagtatgatgatgaggtctcatctcactcctgaaggatgccctccatctcttcctga cttcaggtggcttccacagaacagatttatataaccccaaataaacacacattccaggatcaatgtggcagacaccttcc 60 aaagttttctacaaaggaagtttgcagaattccacatgggtgaggcttaagggtggtgacttagggtggggtggggtggggcag ctaagggacttgttctgaagctgcatttgcagagccaatacattattttaaaattgttccaggcctggtgcagtggctca cacetg taateetgg cactt t tgg gag te tgag gtg gg cgg at taettg ag gt tag gag t ttg ag ace ag etg gc caacat tag the same state that the same state transfer of the same state transferggtgaaaccccatctctataataaatacaaaaattagccaggcgtgctggtgcgcatctgcagtcccagctactcgggag gctgaggctggagaattatttgaacctgggaggcggaggctgcagtgagtcaagatcgcaccactgtattccagcctggg 65 ggacagagcaagactctgtctcaaaaaaaaaaaaaagtttccaaaatttttttcctttttattgatatgtaacttaggt catagattatttcctcctggtttggggcatcatataaatgaaatcacacagaatgtactcatttctgtttgacttctttc 75 aggggcagaaaggggtgatcccttcctgacccatcataagggttatggccaatactcctataataaaaagacagattaaca agagaaaagcataatacatttatttaatcaaagttttaggtgacatgggagccttcagaaatgaagacccaaggacccag gggaaaactatttttatgcttagatttgatgaagaatgaacagctgtgcagaaatgtaattgaacaaaaggagtatcatc taatggtcacagactgggactggggggatcccagcaaggcctggccatattcttcttggtctctctgtacagcattcctt cctcccaggtatagggcagaacctcttctggaatgagggtcttataacctactatcagatgagataagtcagaaaatttc ttttccttttttttttttgagacagtttctcactgtcgcacaggctggagtgcagtggcacgatcttggctcactgcaa cctctgcctcceaggtrcaagctattctcctgcctcagcctcccgagtagctgggattacaggcacacgccaccaagccc

```
gccaaatttttttttttttttagtagtagagaggggtctcaccatgttggccaggttggtcttgaattcctgaccacagg
    tgacccaccagcettggcctcccaaagtgctgggattatgggcgtgagccactgcgcccaaccttcttctcattcttta
    {\tt agggtcctttttgcttcctgttgtctctttctgcttctctaatggtatgagctgatggactgggaccccagctgagctat}
    attaaaatataaaatgttattacaaggccaggagcagtggcacatgcctgtcatcccagcactttgggaggctgaggcga
    gcagatcacaaggtcaggagatagagacaatcctggctaatacggtgaaactccatcactgctaaaaatacaaaaaatta
    gccgagcatggtggcacgcgcctgtaatcctagctactagggaagctgaggcaggagaactgcttgaacccaggaggcgg
    aaaaacaaaacaaaacaaacaagcaaacaaaaaaaggtattgcaattaacagtgagacacagagagaaatttaaattaa
10
    agaggaagaatgggacattgaaagacaaaaaagggaaggcaagaagggtgatggggagacatgagagacacagaggaagg
    aagggtaagactgggctgaggctcagtgtcacgtgcatgtgagatatgcgaaggatgctccttgagatgggccaatcttg
    gtgggagagctgatgactggagtcttgtgccccagactcagggaaatacagtctttatagtggtctttgtggagaaacta
    gtgaaatetetgaageetecaaatgagaetgaaatgacattagetteaaaettgaaettageeteaaaaeetgaattggg
15
    atttaataccaacatcaaccctaacccaaatttaacctcaacccaaatcacaactcaaactcaaccccaactgtaaccct
    ggctaatcttgaaaccagtttaccaccactcctaacactaaacttaaatctgactctaaatgtaagtccaatctgagcca
    caagcctaaagttgaactttatcctgctttatgaattattcatccattcctccatttagtgagtatctgcgtgcctaaca
    20
    tgttgtaagagtggcagggagctacttttaaatacagtagtcagcaaaatcctctttgagtgtttgggtggcactggagc
    tgagacccaaatgacaaaaaatagtgaccaggtaaaagtttgggagcaaagcatttcaggtaaagggagcagctactgca
   25
30
    35
    cccaggetggagtgcaatggegtaatetcageteaetgcaacetetgetgeeegggtteaaaegatteteetgtettage
    ctcctgagtagctgggattataggtgcatgccaccatgcctggctaatttttgtacttttagtagagaaagtacaccatc
    ttggccaggctggtctcgaactcctgacctcaggtgatccacttgcgtcggcctcccaaagfgcfgggatfacaggcgtg
    agacaccgcacccagccttttttttttttttttttttaagacagaatcgctctgtcacccaggctggagtgcagtggc
    acaatctcggctcactgcaacctctgcctcccaggtttaagcaatccacctatgtcagtctcccaagtagctgggattat
    aggtgcatgtcaccatgcctggctaatttttgtacttttagtatagaaagtacaccatgttggccaggctggtcttgaac
   50
    aagtctaagtctattagacatgcaagtagagatgtcactgggcagatacacatctggatttcaggggcaaggtccaagct
   agagaaagaaacctgggcatggtcagcatgaggatggtgtttaaagccatggaacttatcttgtgcatccctataagacc
   cctttgaggcacttgtttcccctcacaatggatgcagtgcatcttccattctgaattccagaggcaacaacctcctgctc
   ctagaagctaaactctccagacttagtcttctgaattcccactgggatttaacctccctggattcaattccctaccccac
55
   aaggacccttctaccaatccatttcacaatatttggtggaactettcacattttcaaatcctgtcttctatgtttgaaag
   gactccatcactaggggaatgaaggcagaagaggggtcgttatcccctctcccccaggaccactgataaactcctcct
   catctcccaaagcacgtgccttctggatctgccatgctctccctgccttcacagcacaalcttatccatcaaaatattta
   ttgagacaaggtattgctctgtcacccaggctggagtgcagtggcgtgatcttggctcactgcagcctcgacctcctggg
   ctcaagtgatcctcccacgtcagcctcctgagtagctaggactacaggcgcataccaccatgcccggctaagttttgtat
   tttttttttttttccagagatagggttttgctatgttgcctaggctggtcttgaactcctgagctcaagcaatccaccgc
   ctcagcctcccaaagtgctgggattacaggcatgacccaccggcacccggcctcctaccaccatctttagt (SEQ ID NO:12022)
   ttctccttctcccaacagttccccagggacctctctctaatcagccctctggcccaggcagtcagatcatcttctcgaaccccgagtgacaagcctgtagcccatgttgtagcaaaccctcaagctgaggggcagctccagtggctgaaccgccgggcc
   gggettagggteggaacceaagettagaactttaagcaacaagaccaccacttegaaacetgggattcaggaatgtgtgg
   tatttatttgggagaccggggtatcctgggggacccaatgtaggagctgccttggctcagacatgttttccgtgaaaacg
   gagetgaacaataggetgtteeccatgtageeceetggeetetgtgeettettttgattatgtttttaaaatatttatet
   gattaagttgtctaaacaatgctgatttggtgaccaactgtcactcattgctgagcctctgctccccaggggagttgtg
   ctgtaatcgccctactattcagtggcgagaaataaagtttgctttacgggccgggcactcccgagctgctgctcgagggc
   gccgagacggtgactccagtgctggacccggccaggagacaagggtacgggcctctctggtacacgagcgtggggttcgg
   eggcctggtgcagctccggaggggcgagagggtgtacgtcaacatcagtcaccccgatatggtggacttcgcgagaggga
```

agacettetttggggeegtgatggtggggtgagggaatatgagtgegtggtgegagtgegtgaatattgggggneeggae gcccaggaccccatggcagtgggaaaaatgtaggagactgtttggaaattgattttgaacctgatgaaaataaagaatgg aaagetteagtgetgeegataaagatgetgagttgegacaeaegtettaatteagggtgggtgeaegggtgegggttaaa gttgcacaggctggtcttgaactagtgggctcaagtggtcctcccacctcagcctcccaaagtgttgggataacaggcat 20 ccggattacccacctctcacctctcccctccttcaccacaaagaccagtgggaccaagccggcatgtgagtccttcaccc acatettatteetatgttteattetttttaaaaaatagagaeaggateteaetatgttgeeeaggttgetetggaaete ctgggttcaagcgatcctctcaccttggccttgcaaagtggtaggattacaggtgcatgccaccacgtccggcagttcgg ttccttgttctttattgtcctcagtctcttcgatttcacccactgagagaatggaaggggatagaacagctggaaactgg 25 acagggtgatttgaagcctagacacccgaatctctggaagtcccttggctgtgttgattcaggtacctgagaatgcggctc ctctccagctctctccggactgctggccagctgcaacagccggaaatctcacctgagctgcaggattttcccagcaagga ttggaattcccagagttggaaattcccatgccctgagggagaggtaattaggttcaggctcttgtttcctgggggatggg gaatattctgtttgggctttgtttatgtagggtctccagggccctaggagtctaaggatgggactgggtccgagggatctt30 accatgtttctttttctaagcaaactttatttctcgccactgaatagtagggcgattacagacacaactccctggggagca gaggcctcagcaatgagtgacagttggtcaccaaatcagcattgtttagacaacttaatcagataatattttaaaaaaaca 35 agtgagttctggaggccccagtttgaattcttagtggttgccagcacttcactgtgcaggccacacattcctgaatccca ggtttcgaagtggtggtcttgttgcttaaagttctaagcttgggttccgaccctaagcccccaattctctttttgagcca 40 gaagaggttgagggtgtctgaaggaggggtaataaagggattggggcaggggaggcgtttgggaaggttggatgttcgt cctcctcacagggcaatgatcccaaagtagacctgcccagactcggcaaagtcgagatagtcgggccgattgatctcagc ctggggtelecctetggcaggggetellgalggcagagaggaggtlgacettggtetggtaggagaeggegatgeggetg atggtgtgggtgaggagcacatgggtggaggggcagcettggcccttgaagaggacctgggagtagatgaggtacaggcc 45 ctctgatggcaccaccagctggttatetctcagctccacgccattggccaggagggcattggcccggcggttcagccact gccatgacgttctgagtatcccactaaggcctgtgctgttcctccacccttcccttgagctcagcgagtccttctcacat tgtctccaagttctgcctaccatcagccgggcttcaatccccaaatcctagccctccaagttccaagacacatcctcaga 50 tttcccccactgctttccataccggtactaaccctacccccaaacccagaattaggaaagaggtttggagaca cttcttctctctcttatctcccccatctctcttccttagctgtcatatttcccgctctttctgtctcaccatctttattcat cattcattcattcattcatcatacacattagtgagcaccttccatgtgccagacatcctgtctctccatctttctct 60 gctggccaggcactcacctcttccctctgggggccgatcactccaaagtgcagcagcagaagagcgtggtggcgcctgc cacgatcaggaaggagaagaggctgaggaacaagcaccgcctggagccctggggcccccctgtcttcttggggagcgcct 65 gcctttatatgtccctggggcgagaggggggggaaagaatcattcaaccagcggaaaacttccttggtggagaaacc ggaaagttggggacacacaagcatcaaggatacccctcacactccccatcctccctgctccgattccgagggggtcttc tgggccactgactgatttgtgtgtaggaccctggaggctgaaccccgtccccatgcccctcaaaacctattgcctccatt 70 tettttggggaccaggtetgtggtetgtteettetaaetteeagacaggatgeaggaaaaagatagaaetagaaetggg agggcttcagaaagctgagtccgttgagggagaaaacggggttggagggaaaagctgtgttgagtcctgaggcctgt gtttgggccctgcggggagaaggagctgggggcttggtggcaggcttgaggcctcaggaaagctgggtgcgggtagcag ggacaagcctgggacagccccggggagtgaaatcacccccgggaattcacagaccccactggggcaggccctcttcttc attctgacccggagactcataatgcttggttcagtcttggcttccaaggaactctggggtccctgatttttttcatgaag ctctcacttctcagggccccagttggtgcgccatatcttcttaaacgtcccctgatttccatacctggaggccctgagggcc 75

gtcagccttgtgcgcatgccctctcactcttcatctcttgggcctgtctctgtttctccttggatgttcttctattattc ccaageteeteeatgtgeetgetetteetetgtgtgtggatetaggeeceaeetagetggtgggacagaceaaeagetttgggetgggaatteetaggeaggettgaaateeteageeagacagacateagggatggtteagggaggtgtggtcceetgg gatgectagaatteettetttgaaageteeggtgaettgateagggaagaettgagetgttggaatggecaaaggagagg ttttccaagttctacagagcgaaggctccaaagaagacagtactagggctgaggactaggtgggggatgccatctgtgtgggggtacatctgggtgtggatagctgggtccctgggtgaccccgtggtacatcgagtgcagccagggttcctgcagccctg gatacaccatcttctgggagctgaggaggcacatggaaggggtactgagaggagaagagctgacctcatgggccagg tagagtggggaggaggtggccttgggagagtaggctttcccagagaaacacctgggagtagacgaagtagacgaagtagacgaa ggtggggaccaggagagaattgttgctcaaggagaaaccatcctggaggaaggcacggtccgtgtttgctctccagagca gtgagttetgettgetggggteteetaggaagageeataggggatggggtgggagateaggggtetggateagaggtet caateeetgaggaagtgggcaetgaacaaetgagtteetgggggatggcagggggggcataggagtgggeteeetetgt tttttttagcgtgggggaagttgggggagaggggtggatgcttgggttcctgaggcaggggtaggaggaggagctggtgg gacatgtctgggaggtcaggtggatgtttaccaatgaggtgagcagcaggtttgagggtgctgtggggcaagatgcatctt ggggtgctgacgggcagtctgggcagctgaaggtgtgaggccaacaccagggagcccctagggagaacagagttgaggg gggctctagggctcaaggtttggctgagccacccagcagccccattctcctgctgcctcacctgggccccaggcagca gaaccagcagcagccccagaaggaggaggtgtagggtggtgccacgcacccttgggaggaagaagatcattaggtggtgtc cgccctgggagacagcacccccgacccccgagagagagatcgacagagaaggggacaagatgcagtcagagaaacccca caatgagactgacagatggagagtcagagacagaggaaaggaaaccaaaaccaaacccaccaaggcccaggcccaggcaggc cggggatccaggcagcaggtgcaggagggaccgaggcccaggcagaggcaggacactgcggggcggtagtccaaagcac gaagcacgggcagcccaaggagatggggcaggagagcctcacctgctgtgcggacccctgggcccggacgctcaggtccc tttatagaggaagcggcagtggcagcgtggcaggcggggttctaggtcggggctgggggcccggggaagcccca gggcttagaagatactgctgtttcagtcaaaggcaggaaaggctgaggcctaggagagaaccacaggctgggggttcagg 30 ctcttgaaagtgtcctagtttggaagataaattttttggtccccttactcagagatgatgctggacagtcaagtatgatg aggtctcatctcactcctgaaggatgccttcatctcttcctgacttcaggtggcttccacagaacagatttatataaac ccaaataaacacacattccaggatcaatgtggcagacaccttccaaagttttctacaaaggaagtttgcagaattccaca 35 aatacattattttaaaattgttccaggcctggtgcagtggctcacacctgtaatcctggcactttgggagtctgaggtgg gcggattacttgaggtcaggagtttgagaccagctggccaacatggtgaaaccccatctctataatacaaaaatta gccaggcgtgctggtgcgcatctgcagtcccagctactcgggaggctgaggctggagaattatttgaacctgggaggcgg 40 agtttccaaaatttttttcctttttattgatatgtaacttaggtatgaggtggacacctcttaagtgtacagctgatgaa tttttccatctgtatgtagccaccacccagctccacgtattttcaggtccccagcaggttccctcatgccccctcctgc tgataccctccaaagataaccaaccactctctcacttttatcaccatagattatttcctcctggtttggggcatcatata tgtatgtatcagtaatgttttttaaaaaaattatgatgtaatattctattgtatcaatatattctaatattctgttga 50 taggtgacatgggagccttcagaaatgaagacccaaggacccaggggaaaactatttttatgcttagatttgatgaagaa 55 togcacaggetggagtgcagtggcacgatettggetcactgcaacetetgeeteccaggttcaagetatteteetgeete tctcaccatgttggccaggttggtcttgaattcctgaccacaggtgacccaccagccttggcctcccaaagtgctgggat tatgggcgtgagccactgcgcccaaccttcttctcattcttttaaccttattatctcttgtgtcagtgtgggtttccctt 60 ttageecctgeteetttettttetetgtgttgeectttetetagggteetttttgetteetgttgtetetttetgett ctctaatggtatgagctgatggactgggaccccagctgagctatattaaaaatataaaatgttattacaaggccaggagca gtggcacatgcctgtcatcccagcactttgggaggctgaggcgagcagatcacaaggtcaggagatagagacaatcctgg ctaatacggtgaaactccatcactgctaaaaatacaaaaattagccgagcatggtggcacgcgcctgtaatcctagcta ctagggaagctgaggcaggagaactgcttgaacccaggaggcggaggttgcagtgagccgagatcgtgccactgccctcc 65 ggtattgcaattaacagtgagacacagagagaaatttaaattaaagaggaagaatgggacattgaaagacaaaaaaggga atgtgagatatgcgaaggatgctccttgagatgggccaatcttggtttcaatctcagtttcggaggttgtatgaatttgg tttcttcttggcaggccagcagttggtttgggactttccctgggtggagagctgatgattgagtcttgtgcccagactcagggaaatacagtctttatagtggtctttgtggagaaactagtgaaatctctgaagcctccaaatgagactgaaatg 70 ctaaataaaacttctcctctaccccaacccaaccctgtttctagggctaatcttgaaaccagtttaccaccactcctaac actaaacttaaatctgactctaaatgtaagtccaatctgagccacaagcctaaagttgaactttatcctgctttatgaat 75 tattcatccattcctccatttagtgagtatctgcgtgcctaacacatgctgggcattgtcctaaggcaggagggacatgg tgaaggaaggaaatttggtactatgagaaaataagacaggctgatgttgtaagagtggcagggagctacttttaaataca gtagtcagcaaaatcctctttgagtgtttgggtggcactggagctgagaccaaatgacaaaaaatagtgaccaggtaaa agtttgggagcaaagcatttcaggtaaagggagcagctactgcaaaggctggaaggcggaaccaagctgggggtgttgac gggccaggtcatgcagggccatgcaagaagggtaaagcctctagatttcatccagccacaggaagcctttaaaggtcgtc

ggcaccatcatagcccactgcaacctcaaaaccatgggctcaagtcatccttccacctcagcttcccaagtatctaggactacaggtgtgtgccactgtgcctggctaattttaaaaaatattttaaaatttttgttgaacagggtctatgctgctcag ctgcttcagcctcccaagtagctgggattacaggtgcatgccaccattcccggctaatttttttgtatttagtagagatgg tttaagacagaatcgctctgtcacccaggcgggtgcagtggcacaatctcggctcactgcaacctctgcctcccaggt tttaagacatccacctatgtcagtctcccaagtagctggattataggtgcatgtcactgtcactgcaacctctgcctcccaggt ccaggttggagtgcaatggcaccatcatagctcactgcagccttcaactcttggcctcaggcaatccttgcaccttagcc tgttgcccaggttggagtgctacggcatgatcttggctcactgcaacttccacctcccaggttcaagcgattctcttgcc 20 tcggccccccgagtagctgggattacagcatgcgccaccgtgcctggctaatttttggtattttagtagagatagggttt ggtggcagtgacattgatggtgaagagaaaatagtggcagccatggagatggagagaagtagacaagtttgggatatatt 25 ttctgatggatggaaaaactaaaaaattctattttgggtgtggtaagtctaagtctattagacatgcaagtagagatgtc gtgtttaaagccatggaacttatcttgtgcatccctataagacccctttgaggcacttgttcccctcacaatggatgca gtgcatcttccattctgaattccagaggcaacaacctcctgctcctagaagctaaactctccagacttagtcttctgaat tcccactgggatttaacctccctggattcaattccctaccccacaaggacccttctaccaatccatttcacaatatttgg 30 35 gcctaggctggtcttgaactcctgagctcaagcaatccacccgcctcagcctcccaaagtgctgggattacaggcatgac ccaccgcacccggcctcctaccaccatctttagt (SEQ ID NO:12023) aattcgataattcaaaatgatatttcagtggggacaaggccaaaccatattatgtgctttatgctactaataaaaaggtt 40 aaaccgaacaagttcaaagacaaaactcagtagtactttattcagacaggttagtctaaatctgttaaccttatacttgc aactctgatcattcattaattctgcaaattttaataaatgctttattttaagctaaatgctgagatgaaaaaatgaaacc atatgagttagcaaagtagaaaatataggcatattaatcagtaaatgcagaatgataaatgctccatcaatatgcacttg ttgtagtgaggccaccgaggagggtgcaatcctctcaacctgggaggagcaggtaggacttcagatgtcatccaactcaa agatatagtgagggacttgatcaaacatttgccaagaccactatgagttaaatgaatagattaggcatttctccaatgtt gcaagcttcgaatcatatccaaactcagaacaacatagcttggtcataatgatcccaaggatcctattggccattgtctt tgagcctcaaaggaacatattaaaactccataatacccttttgatctattctgaagttaagtagtgaatttacatgatga tgacacaaacactgtaaaggacetetgggttacttgtttataagetagtatttectgaateaattttttetgateeetaga tagtgggagccacatcagtatccaaggaggagatccagaagcctctccaaccaggtagggacagttatagattccagacc tcagctatggcctttgttacagagtacaaatgttatatagtacaagtttattgtacacatcccattgagtctctgagctt tagaattttcttgtagaatttaacagttttttcatgccgtatttacatattattgctagtatttagaattttcttccca 55 ttagttaattgggattttttaaaaaggcacttcactggggggaaaaggaacatagagttggttattgtccccttgccta taataaaaacctattatttttaatttttaactgggtltgcggttaaatctcacagcccaagagatttgccacttcagat ggattccatacacttgcatttaagtatgcaaaaaaattccaattatccagcaatttaaccaaattattggtaacttttct aaaacaaaaaaaattgtttcccttgtttttggcagcaatttcagttacagtcctttactttctactcaagaaaatagttt 60 aaaaatgactcatcaaaagaaataactttttcctttctcttgtaagagaaaaaaattaatctcttttagaaattgcaaaca tattteettgatggagaaaateaatteacatggeatagtegttatttateeagtteaaaaaceagagtagaatttaetae tetgtetecattttttetetececaccecettaacceacattggattcagaaagettcattetgcaatcagcattgtcct ttatctttccagtaaagatagccttttggagtcgaagatgaggaaaagcctgtattttatagtcttggaagtgtcttctt ttgccaggacagagagaggagcttcagcagtgagagcaactgaaggggttaatagtggaacttggctgggtgtctgttaa 65 acttttttccctggctctgccctgggtttccccttgaagggatttccctccgcctctgcaacaagaccetttataaagca cagactttctatttcactccgcggtatctgcatcgggcctcactggcttcaggagctgaataccctccCaggcaCaCaCa ggtgggacacaaataagggttttggaaccactattttctcatcacgacagcaacttaaaatgcctgggaagatggtcgtg atccttggagcctcaaatatactttggataatgtttgcagcttgtaagttatttcccttcatctgtttcaaatgtt (SEQ ID NO:12024) atgcctgggaagatggtcgtgatccttggagcctcaaatatactttggataatgtttgcagcttctcaagcttttaaaat cgagaccaccccagaatctagatatettgetcagattggtgactccgtctcattgacttgcagcaccacaggctgtgagtccccatttttctcttggagaacccagatagatagtccactgaatgggaaggtgacgaatgaggggaccacatctacgctg acaatgaatoctgttagtttttgggaacgaacactottacotgtgcacagcaacttgtgaatotaggaaattggaaaaagg aatocaggtggagatotactottttoctaaggatocagagattcatttgagtggcoototggaggotgggaagcogatoa 80

gagaacccagatagacagccctctgagcgggaaggtgaggagtgaggggaccaattccacgctgaccctgagccctgtga

gttttgagaacgaacactcttatctgtgcacagtgacttgtggacataagaaactggaaaagggaatccaggtggagctc tactcattccctagagatccagaaatcgagatgagtggtggctcgtgaatgggagctctgtcactgtaagctgcaaggt tcctagcgtgtacccccttgaccggctggagattgaattacttaagggggagactattctggagaatatagagtttttgg aggatacggatatgaaatctctagagaacaaaagtttggaaatgaccttcatccctaccattgaagatactggaaaagct aagcagaaaggaagtggaattaattatccaagttactccaaaagacataaaacttacagcttttccttctgagagtgtca aagaaggagacactgtcatcatctcttgtacatgtggaaatgttccagaaacatggataatcctgaagaaaaaagcggag acaggagacacagtactaaaatctatagatggcgcctataccatccgaaaggcccagttgaaggatgcgggagtatatga atgtgaatctaaaaacaaagttggctcacaattaagaagtttaacacttgatgttcaaggaagaaaacaacaaagact attititeteetgagettetegtgetetattittgeateeteettaataataeetgeeattggaatgataatttaettitgea agaaaagccaacatgaaggggtcatatagtcttgtagaagcacagaaatcaaaagtgtag (SEQ ID NO:12025) 15 aattogataattoaaaatgatatttoagtggggacaaggccaaaccatattatgtgctttatgctactaataaaaaaggtt aaaccgaacaagttcaaagacaaaactcagtagtactttattcagacaggttagtctaaatctgttaaccttatacttgc aactclgatcattcattaattctgcaaattttaataaatgcttatttlaagctaaatgctgagatgaaaaatgaaacc atatgagttagcaaagtagaaaatataggcatattaatcagtaaatgcagaatgataaatgctccatcaatatgcacttg ttgtagtgaggccaccgaggagggtgcaatcctctcaacctgggaggagcaggtaggacttcagatgtcatccaactcaa 20 agatatagtgagggacttgatcaaacatttgccaagaccactatgagttaaatgaatagattaggcatttctccaatgtt gcaagcttcgaatcatatccaaactcagaacatagcttggtcataatgatcccaaggatcctattggccattgtctt tgagcctcaaaggaacatattaaaactccataatacccttttgatctattctgaagttaagtagtgaatttacatgatga tgacacaaacactgtaaaggacctctgggttacttgtttataagctagtatttcctgaatcaattttctgatccctaga tagtgggagccacatcagtatccaaggaggagatccagaagcctctccaaccaggtagggacagttatagattccagacc 30 taataaaaacctattattttaatttttaactggtttgcggttaaatctcacagcccaagagatttgccacttcagag ggattccatacacttgcatttaagtatgcaaaaaaattccaattatccagcaatttaaccaacttattggtaacttttct aaaacaaaaaaaattgtttcccttgttttggcagcaatttcagttacagtcctttactttctactcaagaaaatagttt 35 aaaaatgactcatcaaaagaaataactttttcctttctcttgtaagagaaaaaattaatctctttttagaattgcaaaca tetgtetecattttteteteteecacceettaacceacattggatteagaaagetteattetgeaateageattgteet ttatetttecagtaaagatageettttggagtegaagatgaggaaaageetgtattttatagtettggaagtgtettett ttgccaggacagagagaggagcttcagcagtgagagcaactgaaggggttaatagtggaacttggctgggtgtctgttaa acttttttccctggctctgccctgggtttccccttgaagggatttccctccgcctctgcaacaagaccctttataaagca 50 aggaatttctggaggatgcagacaggaagtccctggaaaccaagagtttggaagtaacctttactcctgtcattgaggat tgaccatgacctgttccagcgagggtctaccagctccagagattttctggagtaagaaattagataatgggaatctacag tttgattgggaaaaacagaaaagaggtggaattaattgttcaagagaaaccatttactgttgagatctcccctggaccc ggattgctgctcagattggagactcagtcatgttgacatgtagtgtcatgggctgtgaatccccatctttctcctggaga acccagatagacagccctctgagcgggaaggtgagggggaccaattccacgctgaccctgagccctgtgagttt tgagaacgaacactcttatctgtgcacagtgacttgtggacataagaaactggaaaagggaatccaggtggagctctact 60 cattccctagagatccagaaatcgagatgagtggcctcgtgaatgggagctctgtcactgtaagctgcaaggttcct agcgtgtacccccttgaccggctggagattgaattacttaagggggagactattctggagaatatagagtttttggagga tacggatatgaaatctctagagaacaaaagtttggaaatgaccttcatccctaccattgaagatactggaaaagctcttg caacteteacettaatttetacaaaaatggaagattetggggtttatttatgtgaaggaattaaceaggetggaagaage 75 tgccgtttctcctatctctgagcctcagaactgtcttcagtttccgtacaagggtaaaaaggcgctctctgcccatccc ccccagccgcggccccgcctcccccccccactgcaccctcggtgtttggctgcagcccgcgagcagttcccgtcaatccct cccccttacacaggatgtccatattaggacatctgcgtcagcaggtttccacggcctttccctgtagccctggggggag ccatccccgaaacccctcatcttggggggcccacgagacctctgagacaggaactgcgaaatgctcacgagattaggaca cgcgccaaggcgggggcagggagctgcgagcgctggggacgcagccggggcgcagaagcgccaggcccaggcccaggccca

agtgaccgtgctcctacccagctctgcttcacagcgcccacctgtctccgcccctcggcccctcggcccggctttgcctaa 15 gccctggctccaagcccattccatcccaactcagactctgagtctcaccctaagaagtactctcatagtttcttccctaa ğtttcttaccgcatgctttcagactgggctcttctttgttctcttgtgctgaggatcttattttaaatgcaagtcacaccta 20 ttctgcaactgcaggtcagaaatggtttcacagtggggtgccaggaagcagggaagctgcaggagccagttctactgggg tacactccaagcggtaggtactctgtgggttgctcctttttaaaacttaagggaaagttggagattgagcataagggccc ttgagtaagactgtgtcttatgctttcctttatccctctgtatacaggagaccaactagaagatgagaagtctgct 25 gatecetgatgaeetgggetteeeagaagagatgtetgtggetteeettgatetgaetgggggeetgeeagaggttgeea ccccggagtctgaggaggccttcaccctgcctctcctcaatgaccctgagcccaagccctcagtggaacctgtcaagagc atcagcagcatggagctgaagaccgagccctttgatgacttcctgttcccagcatcatccaggcccagtggctctgagac agcccgctccgtgccagacatggacctatctgggtccttctatgcagcagactgggagcctctgcacagtggctccctgg 30 ggatggggcccatggccacagagctggagcccctgtgcactccggtggtcacctgtactcccagctgcactgcttacacg tcttccttcgtcttcacctaccccgaggctgactccttccccagctgtgcagctgcccaccgcaagggcagcagcag 35 attggaattaacctggtgctggatattttcaaattgtatctagtgcagctgattttaacaataactactgtgttcctggc agctatatccatgtactgtagtttttcttcaacatcaatgttcattgtaatgttactgatcatgcattgttgaggtggtc 40 tgaatgttctgacattaacagttttccatgaaaacgttttattgtgtttttaatttattattaataagatggattctcagat ttgtttgcttattgttccaagacattgtcaataaaagcatttaagttgaatgcgaccaaccttgtgctcttttcattctg gaagtcttgtaagtttctgaaaggtattattggagaccagtttgtcaagaagggtagctgctggagggggacacaccctc tgtctgatcccttatcaaagaggacaaggaaactatagagctgattttagaatattttacaaatacatgccttccattgg 45 aatgctaagattttctactgcttctggggacgggaaaccgctgtgtaacagcttttgtgggaatacattttttctgtttc agtactcgcagggggaaatattttaaattttgttgtgctaatattaaattcagatgttttgatcttaaaggaaccctttaa gcaaacagaacctagctttgtacagactattttaactttttattctcacaaaatcacgtggagggttattctacttcaaa gatgagcaaattgaagaatggttagaataaacaactttcttgatattccgttatcggcattagaatcttcctgctcgtta 50 55 gaagaagagcttcagcgccagtcttctaatgctttggtgataatgaaaatcactgggtgcttatggggtgtcatattcaa 60 tcgagttaaaagttttaattcaaaatgacagttttactgaggttgatgttetcgtctatgatatctctgcccctcccata aaaatggacatttaaaagcaacttaccgctctttagatcactcctatatcacacaccacttggggtgctgtttctgctag acttgtgatgacagtggccttaggatccctgtttgctgttcaaagggcaaatattttatagcctttaaatatacctaaac ggccaggagcggtggctcacacctgtaattccagcactttgggaggctgagacaggaggatcactggagtccaggagttt 65 gagaccagcctgggcaacatggcaaaacccagtgtgcttctgttgtcccagctacactactcaggaggctgaggcaggag tatgacttgagcctgggagggggggggttgcagagaactgatattgcaccaccactgcactccagcctgggtgacacagca aaaccctatctcaaaaaaaaaaaaaaaaaaaaaaaggaacccagctggttcctgtaggtgtgcaataataacaaccagaggaa gaaaaggaagacgatttcccagatgaagaagggcagctggaccttcggac (SEQ ID NO:12027) gcagccgggcggcgcagaagcgccaggcccgcgcgccacccctctggcgccaccgtggttgagcccgtgacgtttaca 70 ctcattcataaaacgcttgttataaaagcagtggctgcgggcctcgtactccaaccgcatctgcagcgagcaactgaga agocaagactgagocggoggocggoggogaagogaacgagcagtgacogtgotoctacocagototgottcacagogocca cctgtctccgccctcggcccctcgcccggctttgcctaaccgccacgatgatgttctcgggcttcaacgcagactacga 80 ataacgggaacgcagcggcaggatggaagagacaggcactgcgctgcggaatgcctggggaggaaaagggggagacctttc atccaggatgagggacatttaagatgaaatgtccgtggcaggatcgtttctcttcactgctgcatgcggcactgggaact

cgccccacctgtgtcccggaacctgctcgctcacgtcggctttccccttctgttttgttctaggacttctgcacggacctg 10 taaaacttaagggaaagttggagattgagcataagggcccttgagtaagactgtgtcttatgctttcctttatccctctg tatacaggagacagaccaactagaagatgagaagtctgctttgcagaccgagattgccaacctgctgaaggagaaggaaa aactagagttcatcctggcagctcaccgacctgcctgcaagatccctgatgacctgggcttcccagaagagatgtctgtg 15 gcttcccttgatctgactgggggcctgccagaggttgccacccggagtctgaggaggccttcaccctgcctctcctcaa tgaccotgagcccaagccotcagtggaacctgtcaagagcatcagcagcatggagctgaagaccgagccctttgatgact tcctgttcccagcatcatccaggcccagtggctctgagacagcccgctccgtgccagacatggacctatctgggtccttc tatgcagcagactgggagcctctgcacagtggctccctggggatggggcccatggccacagagctggagcccctgtgcac 20 ccagctgtgcagctgcccaccgcaagggcagcagcaatgagccttcctctgactcgctcagctcaccacgctgctg gccctgtgagggggcagggaaggggaggcagccggcacccacaagtgccactgcccgagctggtgcattacagagaggag aaacacatcttccctagagggttcctgtagacctagggaggaccttatctgtgcgtgaaacacaccaggctgtgggcctc aaggacttgaaagcatccatgtgtggactcaagtccttacctcttccggagatgtagcaaaacgcatggagtgtgtattg ttcccagtgacacttcagagagctggtagttagtagcatgttgagccaggcctgggtctgtgtctcttttctctttctcc 25 ttagtetteteatageattaaetaatetattgggtteattattggaattaaeetggtgetggatatttteaaattgtate tagigcagetgattttaacaataactactgigiteetggcaatagigtgttetgattagaaatgaecaatattataetaa gaāaāgažacgactttattttctggtagažagaaataāatagctātātēcatgtactgtagttīttcttcaacatcaatg ttcattgtaatgttactgatcatgcattgttgaggtggtctgaatgttctgacattaacagttttccatgaaaacgtttt 30 35 tccccacagncaggatagctgtgaaaaggggtatcaacacgaggcctccttcagcctgagccctttagtgactacaatga gcagagctaccctgccaacctacaacgtcatgtagnagaaatgaccaactttcactggaataagncactgatatgttag 40 ggattgtgaaaanccccttctccaaggcataggaatcggaactctcctgattgtaaggaaaagccaatgaaggcttccaa gcaggggggttaacatgaacagatttgttatttttttggatgaaatatgctatttctcaacataaggagaagatcagcct atttetaaatacaggagetetgaaeggagttacagteagaggateaggeaagaaatttettetatgeeacaagegetat ttcctctgcagataactaatactccacaagaaagtttgccagagtagagaaaatacaaaggaatgtaacacagacctgag 45 gtcaatttccagctgcctgtgtgacctcaacaaagatacttaacctctctgggcctatttcctcacatgttaaatctgga taataatatatgtototoaagacagttgtggggagaaaacagogtatttaaattgottaggagaatgootggoagataat aagtgtttaatacatgaaactgatttttattactgttattaaaaaatatttagaacaccaactccctgaatacaacagaa 55 ggctccgagtactactgcgtgactttatgcgagtgtcgccgccttctgggcttgttttcccggaagcaactcggcgcgga 60 acacctgtgaaccccgcgcccttteccccacggtcccggagatgaagtggggtgcaacggagactcagctgagcgtcca gtttcgggcaatacaaatctctcggcttctacgagcagccacacgaccccgcggaccgtcgctcctgaacttgaccgaga tgcaaactteggagtgttetcaaegtgggggeegaeteteggagaeegeeetaaaettaagteeeettaggetegeeea cctggacttcacatagccaccttaagggcggtattcccgccccggaagtgcgggtggcagcgtacttggattctcagcc . 65 tccagccccgcgcggtggcggcgcgggtggatgacttcgggccccacaagtggaaacaacaaccaccctcgcccgcacc cctggcccaaaacactggccaggttccctcgtcccgggtccctgcatccccgcatccccgtccgcagccgtgaacttg agccccctccatcagaggttgcgagcgtcgccgctcggcagccaccgtcactagacagtcaaaccccaagacgtcagcc ggagggtaggagaaagagggcccgactgtaggagggcagcggagcattacctcatcccgtgagcctccgcgggcccaga

ctcagggaacaggtggcacagcttaaacagaaagtcatgaaccacgttaacagtgggtgccaactcatgctaacgcagca aacttgacaagttgcgacggagagaaaaaaagaagtgtccgagaactaaagccaagggtatccaagttggactgggttcgg 20 tgcgggctgccccgcttttgcggacgggctgtccccgcgcgaacggaacgttggactttcgttaacattgaccaagaactg tgcttctgtagtactccttaagaacacaaagcggggggaggttggggagggcggcaggaggggggtttgtgagagcga tgittgtaaataagagatttggagcactctgagtttaccaittgtaataaagtaiatataitttiiitatgttitgtticig aaaattccagaaaggatatttaagaaaatacaataaactattggaaagtactcccctaacctcttttctgcatcatctgt agatcctagtctatctaggtggagttgaaagagttaagaatgctcgataaaatcactctcagtgcttcttactattaagc agtaaaaactgttctctattagacttagaaataaatgtacctgatgtacctgatgctatgtcaggcttcatactccacgc . 30 gcaggaacagtgctagtattgctcgagcccgagggctggaggttagggggatgaaggtctgcttccacgctttgcactgaa ttagggctagaattggggataggggtaggggcgattccttcgggagccgaggcttaagtcctcggggtcctgtactcga tgecgttteteetabetetgageeteagaactgtetteagttteegtacaagggtaaaaaggegetetetgeeecatece 40 ccccagccgcggcccccgcctccccccgcactgcaccctcggtgttggctgcagcccgcgagcagttcccgtcaatccct ccccccttacacaggatgtccatattaggacatctgcgtcagcaggtttccacggcctttccctgtagccctggggggag ccatccccgaaacccctcatcttggggggcccacgagacctctgagacaggaactgcgaaatgctcacgagattaggaca cgcgccaaggcgggggcagggagctgcgagcgctggggacgcagcagccggagcgcagaagcgccaggcccagagcccaggcccaggcccagagcccaggcccagagcccaggcccaggcccaggcccaggcccagagcccaggcccagagccagagccagagcccagagcccagagcccagagcccagagcccagagcccagagcccagagcccagagcccagaagcccagagcccagagcccagagcccagagcccagagcccagagcccagagcccagagcccagaagcccagagcccagagcccagaagcccagagcccagagcccagagcccagagcccagaagccagaagcccagaa egectegtactecaacegeatetgeagegageaactgagecaagaetgageeggeggegegegeagegaaegage agtgaccgtgctcctacccagctctgcttcacagcgcccacctgtctccgccctcgccctcgcccggctttgcctaa ccgccacgatgatgttctcgggcttcaacgcagactacgaggcgtcatcctcccgctgcagcagcggtccccggcggggatagcctctcttactaccactcacccgcagactccttcccagcatgggctcgcctgtcaacgcgcaggtaaggctggc caccettteggagtecegececetegetgggettaetecagggetggegttgtgaagaceatgacaggaggecgage geagageattggeaggagggeaaggtggaacaggtgaggaaetetagegtaetetteetgggaatgtggggetgggt 60 gccctggctccaagcccattccaactccaactcagactctgagtctcaccctaagaagtactctcatagtttcttccctaa gtttcttaccgcatgctttcagactgggctcttctttgttctcttgctgatgatcttattttaaatgcaagtcacaccta ttotgcaactgcaggtcagaaatggtttcacagtggggtgccaggaagcagggaagctgcaggagccagttctactgggg tacactccaagcggtaggtactctgtgggttgctcctttttaaaacttaagggaaagttggagattgagcataagggccc attggaattaacctggtgctggatattttcaaattgtatctagtgcagctgattttaacaataactactgtgttcctggc

agctatatecatgtaetgtagtttttettcaacatcaatgttcattgtaatgttactgatcatgcattgttgaggtggtc tgaatgttctgacattaacagttttccatgaaaacgttttattgtgtttttaatttattattattaagatggattctcagat ttgtttgcttattgttccaagacattgtcaataaaagcatttaagttgaatgcgaccaaccttgtgctcttttcattctg gaagtettgtaagtttetgaaaggtattattggagaccagtttgtcaagaagggtagetgetggagggggacacacecte tgtctgatcccttatcaaagaggacaaggaaactatagagctgattttagaatattttacaaatacatgccttccattgg aatgctaagattttctactgcttctggggacgggaaaccgctgtgtgtaacagcttttgtgggaatacattttttctgtttc agtactcgcagggggaaatatttaaattttgttgtgctaatattaaattcagatgttttgatcttaaaggaaccctttaa gcaaacagaacctagctttgtacagactattttaactttttattctcacaaaatcacgtggagggttattctacttcaaa gatgagcaaattgaagaatggttagaataaacaactttcttgatattccgttatcggcattagaatcttcctgctcgtta tcgtatccagcaggctgaactgcctcttgatacttggttaaaaaaattttcaggccgggcgcggtggccatgcctgta atcctagcactttgggaggccgaggcaggcggatcacctgaggtcgggagttcgagaccagcctgaccaacatggagaaa ccccgtctttactaaaaatacaaaattagcctggtgtggtgcatgcctgtaatcctagctacttgagaggctgagac 20 tcgagttaaaagttttaattcaaaatgacagttttactgaggttgatgttctcgtctatgatatctctgccctcccata aaaatggacatttaaaagcaacttaccgctctttagatcactcctatatcacacaccacttggggtgctgtttctgctag 25 acttgtgatgacagtggccttaggatccctgtttgctgttcaaagggcaaatattttatagcctttaaatatacctaaac ggccaggagcggtggctcacacctgtaattccagcactttgggaggctgagacaggaggatcactggagtccaggagttt gagaccagcctgggcaacatggcaaaacccagtgtgcttctgttgtcccagctacactactcaggaggctgaggcag tatgacttgageetggggagggggaggttgcagagaactgatattgcaccaecactgcactccageetgggtgacacagca 30 aaaccctatctcaaaaaaaaaaaaaaaaaaaaaaggaacccagctggttcctgtaggtgtgcaataataacaaccagaggaa gaaaaggaagacgatttcccagatgaagaagggcagctggaccttcggacgcagccgggcggccgcagaagcgcccaggc gcgaacgagcagtgaccgtgctcctacccagctctgcttcacagcgcccacctgtctccgccctcggcccctcgcccgg 35 40 gacaggcactgcgctgcggaatgcctgggaggaaaagggggagacctttcatccaggatgagggacattttaagatgaaat gtccgtggcaggatcgtttctcttcactgctgcatgcggcactgggaactcgcccacctgtgtccggaacctgctcgct cacgleggettteccettetgttttgttetaggaettetgeaeggaeetggeegteteeagtgeeaaetteatteceaeg cagagcccctcaccctttcggagtccccgcccctccgctggggcttactccagggctggcgttgtgaagaccatgacag gaggccgagcgcagagcattggcaggaggggcaaggtggaacaggtgaggaactctagcgtactcttcctgggaatgtgg gtaactgggagccctggctccaagcccattccatcccaactcagactctgagtctcaccctaagaagtactctcatagtt 60 ggttecetggggatggggeceatggagetgaagacetatetgggteettetatgcageagaetgggageetetgeacagt getetgagacageecgeteegtgecagacatggacetatetgggteettetatgcageagaetgggageetetgeacagt ggctecetggggatggggeceatggecacagagetggageecetgtgcaeteeggtggteacetgtaeteecagetgeac tgcttacacgtcttccttcgtcttcacctaccccgaggctgactccttccccagctgtgcagctgcccaccgcaagggca 65 gcagcagcaatgagccttcctctgactcgctcagctcacccacgctgctggccctgtgaggggcagggaagggaggca acctagggaggaccttatctgtgcgtgaaacacaccaggctgtgggcctcaaggacttgaaagcatccatgtgtgggactc aagtccttacctcttccggagatgtagcaaaacgcatggagtgtgtattgttcccagtgacacttcagagagctggtagt tagtagcatgttgagccaggcctgggfctgtgtctcttttctctttctccttagtcttctcatagcaftaactaatctat tgggttcattattggaattaacctggtgctggatattttcaaattgtatctagtgcagctgattttaacaataactactg 75

ncactgatatgttagggttgnntggtagggcagcataacactnnctntcctgacagaactgggagtgagagataaggctg gagagaagaaggagttggattgtgaaaanccccttctccaaggcataggaatcggaactctcctgattgtaaggaaaagcc gtcctaagtcttgaaatttctaaatacaggagctctgaacggagttacagtcagaggatcaggcaagaaaatttcttcta tgccacaagcgctatttcctctgcagataactaatactccacaagaaagtttgccagagtagagaaaatacaaaggaatg taacacagacctgaggtcaatttccagctgcctgtgtgacctcaacaaagatacttaacctctctgggcctatttcctca catgttaaatctggataataatatatgtctctcaagacagttgtggggagaaaacagcgtatttaaattgcttaggagaa tgcctggcagataataagtgtttaatacatgaaactgatttttattactgttattaaaaaatatttagaacaccaactcc ${\tt cactgtatacctacctaccccaccccctccccagctcagtgcctggctcacagtaggctttcagttaccctctgcagatcacctgtataccctaccccagctcagatcacccagttaccctagcagatcaccctagcagatcaccctagcagatcacccagctcaccagtagcctggctcacagtaggctttcagttaccctaccccagctcagatcacccagctcagatcaccagtaggcttaccccagctcagatcacccagatcacagtaggcttaccccagctcagatcaccagatcacagatcacccagatcacagatcacccagatcacagatcacccagatcacagatcacagatcacagatcacagatcacccagatcaca$ agtgaaagctaggtgagtgcccggagtgaagaaaagttggcaggtttcccactgataccagctgctgtttggtttctgaac actcaaagccgcaaataccttagggctgggggcaatgaacccaaggctgaattccaagttcagaagcagcgaagtctgaa tttagaacctaggacttaaactgctgcaggtccaacttcaagccccagttttagacagaggcttgggaaagatctgactt ctaacccggttccccctccctcccctcgatgcttctcacaggaaagtacacctggtcctgccaaatcgcactctta 20 agtttcggatcgcctacacctgtgaacccccgcgccctttcccccacggtcccggagatgaagtggggtgcaacggagactcagctgagcgtccagttcggagcgtccagttcccggagcaccgccgtcgctcc 25 tgaacttgaccgagatgcaaacttcggagtgttctcaacgtgggggccgactctcggagaccgccctaaacttaagtccccttaagctcgccccacctggacttcacatagccaccttaaggcggtattcccgcccccggaagtgcgggtggcagcgta cttggattctcagcctccagccccgcgcggtggccgcggtggatgacttcgggccccacaagtggaaacaacca cccctcgcccgcacccctggcccaaaacaactggccaggttccctcgtcccgggtccctgcatcccccgcatccccgtcc geageegtgaacttgageeeeeteeateagaggttgegagegtegeegeteggeageeacegteactagaeagteaaae 30 cccaagacgtcagcccacaatgcaccgggcgggccgggaaaaacggcccggggaggggaccggggaacagagggccgaga ggcgtgcggcagggggggggggaggtaggaaagaagggcccgactgtaggagggcagcagcattacctcatcccgtgagc gccaatgggaaggccttggggtgacatcatgggctattttttaggggttgactggtagcagataagtgttgagctcgggct gggcccgactgtaggagggcagcggagcattacctcatcccgtgagcctccgcgggcccagagaagaatcttctagggtg gagtctccatggtgacgggcgggcccgcccctgagagcgacgcgagccaatgggaaggccttggggtgacatcatggg ctatttttaggggttgactggtagcagataagtgttgagctcgggctggataagggctcagagttgcactgagtgtggct 40 ccggagacaagtggcagagtcccggagcgaacttttgcaagcctttcctgcgtcttaggcttctccacggcggtaaagac cgcgagccgcggctgccgggcgccccttccccctagcagcggaggaggggacaagtcgtcggagtccgggcgaccaagac ccgccgccggccggccactgcagggtccgcactgatccgctccgcggggagagccgctgctctgggaagtgagttcgcct cgacagccagcgggtgcgtgcgctcttagagaaactttccctgtcaaaggctccggggggcgcgggtgtcccccgcttgc cagagccctgttgcggccccgaaacttgtgcgcgcacgccaaactaacctcacgtgaagtgacggactgttctatgactg caaagatggaaacgaccttctatgacgatgccctcaacgcctcgttcctcccgtccgagagcggaccttatggctacagt aaccccaagatcctgaaacagagcatgaccctgaacctggccgacccagtggggagcctgaagccgcacctccgcgccaa gaactcggacctcctcacctcgcccgacgtggggctgctcaagctggcgtcgcccgagctggagcgcctgataatccagt ccagcaacgggcacatcaccaccacgccgacccccagttcctgtgccccaagaacgtgacagatgagcaggagggg ttegeegagggettegtgegegeetggeegaactgeacagecagaacacgetgeecagegteacgteggeggegeagec ggtcaacgggcaggcatggtggctcccgcggtagcctcggtggcaggggcagcggcagcggcttcagcgccagcctgcacctgcaccagccggcagcggcgcacacctcagcacctcagcacctcagcacctcagcacctcagcacctcagcacctcagcaccagccgcgagcagcggcggcgccctcc tacggcggcgcggcctggcctttcccgcgcaaccccagcagcagcagcagccgcaccacctgccccagcagatgcccgtgcagcacccggcgcgcgagacacccgctgt cgaaaaaggaagctggagagaatcgccggctggaggaaaaagtgaaaaccttgaaagctcagaactcggagctggcgtc 60 cacggccaacatgctcagggaacaggtggcacagcttaaacagaaagtcatgaaccacgttaacagtgggtgccaactca agacagacttgagaacttgacaagttgcgacggagagaaaaaagaagtgtccgagaactaaagccaagggtatccaagtt 65 gggageggcegcetgegggetgeecegethtgeggaegggetgteecegegegaaeggaaegttggaethtegttaaeat 70 tcctgcccagtgttgtttgtaaataagagatttggagcactctgagtttaccatttgtaataaagtatataatttttta tgttttgtttctgaaaattccagaaaggatatttaagaaaatacaataaactattggaaagtactcccctaacctcttt ctgcatcatctgtagatcctagtctatctaggtggagttgaaagagttaagaatgctcgataaaatcactctcagtgctt toatactccacgctcccccagcgtatctatatggaattgcttaccaaaggctagtgcgatgtttcaggaggctggaggaa ggggggttgcagtggagaggacagcccactgagaagtcaaacatttcaaagtttggattgcatcaaggggggttgcattataaagttggatg tgaccatttataatgttagaaattttacaataggtgcttattctcaaagcaggaattggtggcagattttacaaaagatg tatccttccaatttggaatcttctctttgacaattcctagataaaaagatggcctttgtcttatgaatatttataacagc attctgtcacaataaatgtattcaaataccaataacagatcttgaattgcttccctttactacttttttgtcccaagtt atatactgaagtttttatttttagttgctgaggtt (SEQ ID NO:12031)

ggccgccggctcgccgcgcaccaggggccggcggacagaagagggccgagcggccgagcgctcgaggcttgggggaccgcggggcgcg gccgcgctgccgggcgggaggctggggggccggggccggggccgtgcccggagcgggtcggagcgggccggggc cgggggacggcggctccccgcggggttccagcggctcggggatcccgggccgggcccagcagggaccatggcagccgggag catcaccacgotgoocgoottgoocgaggatggcggcagcggoottcocgoocggccacttcaaggaccccaagcggc tgtactgcaaaaacgggggcttcttcctgcgcatccaccccgacggccgagttgacggggtccggggagaagagcgaccct gaaggaagattggaagattactggcttctaaatgtgttacggatgagtgtttctttttttgaacgattggaatctaataact acaatacttaccggtcaaggaaatacaccagttggtatgtggcactgaaacgaactgggcagtataaacttggatccaaa acaggacctgggcagaaagctatacttttttcttccaatgtctgctaagagctgattttaatggccacatctaatctcatt tcacatgaaagaagaagtatatttttagaaattttgttaatgagagtaaaagaaataaatgtgtatagctcagttttggata attggtcaaacaattttttatccagtagtaaaatatgtaaccattgtcccagtaaagaaaaataacaaaagttgtaaaat gtatattctcccttttatattgcatctgctgttacccagtgaagcttacctagagcaatgatctttttcacgcatttgct ttattcgaaaagaggcttttaaaatgtgcatgtttagaaacaaaatttcttcatggaaatcatatacattagaaaatcac agtcagatgtttaatcaatccaaaatgtccactatttcttatgtcattcgttagtctacatgtttctaaacatataaatgtgaatttaatcaattcctttcatagtctatagatttataaatcctgtgcagttccttatgatagagtttataaaacagtcctgtgta 20 gtagcattatgtaaaggctcaaaacattaccctaacaaagtaaagttttcaatacaaattctttgccttgtggatatcaa gaaatcccaaaatattttcttaccactgtaaattcaagaagcttttgaaatgctgaatatttctttggctgctacttgga ggcttatctacctgtacattttttggggtcagctctttttaacttcttgctgctctttttcccaaaaggtaaaaatataga ttgaaaagttaaaacattttgcatggctgcagttcctttgtttcttgagataagattccaaagaacttagattcatttct 25 ttcacattitataaggitgattittcaattaaatgcaaatttgtgtggcaggatttttattgccattaacatatttigt ggctgctttttctacacatccagatggtccctctaactgggctttctctaattttgtgatgttctgtcattgtctcccaa agtatttaggagaagccctttaaaaagctgccttcctctaccactttgctggaaagcttcacaattgtcacagacaaaga 30 ctggtgaaaaacatgcaaagaagaagtcacagaaacatgtctcaattcccatgtgctgtgactgtagactgtcttac catagactgtettacecateceetggatatgetettgtttttteeetetaatagetatggaaagatgeatagaaagagta taatgttttaaaacataaggcattcatctgccatttttcaattacatgctgacttcccttacaattgagatttgcccata ggttaaacatggttagaaacaactgaaagcataaaagaaaaatctaggccgggtgcagtggctcatgcctatattccctg atttaagatggtagcactagtcttaaattgtataaaatatcccctaacatgtttaaatgtccatttttattcattatgct ttgaaaaataattatggggaaatacatgtttgttattaaatttattattaaagatagtagcactagtcttaaatttgata 40 agtaccactaatcaaaagttcggcatgtagctcatgatctatgctgtttctatgtcgtggaagcaccggatgggggtagt cttgaatcaetaactgactgaaaattgaatgggcaaataagtgcttttgtctccagagtatgcgggagacccttccacct 45 tttttattattttaatatactgtaagccaaactgaaataacatttgctgttttataggtttgaagaacataggaaaaact aagaggttttgtttttatttttgctgatgaagagatatgtttaaatatgttgtattgttttgttttgtttagttacaggacaata ataatctgcagaatgtgggtttcctggtgtttcctctgactctagtgcactgatgatctctgataaggctcagctgcttt a tagt to to together the constant of the co50 55 ataagagttcacatgaaaaaaatcaattcatttgaaaaggcaagatgcaggagaggaagccttgcaaacctgcagactgctttttgcccaatatagattgggtaaggctgcaaaacataagcttaattagctcacatgctctgctctcacgtggcacc 60 agtggatagtgtgagagaattaggetgtagaacaaatggcettetettteageatteacaceactacaaaatcatetttt atatcaacagaagaataagcataaactaagcaaaaggtcaataagtacctgaaaccaagattggctagagatatatctta aaaatcaagctttaagtacatggacatttttaaataaaatatttaaagacaatttagaaaattgccttaatatcattgtt 65 ggctaaatagaataggggacatgcatattaaggaaaaggtcatggagaaataatattggtatcaaacaatacattgatt aaatcagtgacataaataattcttagcttattttatatttccttgtcttaaatactgagctcagtaagttgtgttagggg attatteteagttgagactttettatatgacattttactatgttttgactteetgactattaaaaataaatagtagaaa caattttcataaagtgaagaattatataatcactgctttataactgactttattatattatttcaaagttcatttaaag 70 gctactattcatcctctgtgatggaatggtcaggaatttgttttctcatagtttaattccaacaacaatattagtcgtat cataaacagaagaataggtggtatgttcctaatgatattattctactaatggaataaactgtaatattagaaattatgc 75 ttaacataactttcactaacacacacatatgtagatttcacaaaatccacctataattggtcaaagtggttgagaatata ttttttagtaattgcatgcaaaatttttctagcttccatcctttctccctcgtttcttctttttttgggggagctggtaa 80 aatettacagatgetgetataaataagtagaaaatataaattteateaetaaaatatgetattttaaaatetattteeta tattgtatttctaatcagatgtattactcttattatttctattgtatgtgttaatgattttatgtaaaaatgtaattgct tttcatgagtagtatgaataaaattgattagtttgtg (SEQ ID NO:12032)

agaatatgctgtcaacagggatgggaaggaagaccacctttactgctatacacatttgtaccttttagatgttgatcaata tgacattagacaggtacaaaagctctagaaatgaggactttcctcagtgatgactttttttcaccaccaaagtcactcagg catcctgacaagggtaagtgaggggagcctccttggaaaataaactcacttggatagtgaactcctgcacatacctcaaa gcccatctgaaatgtcccctcctacaggaagttttccctgaccctccaagaagcagagttctatttcactggggaaaaca tttottottottettttttttccotgeoctgeacatgagetagaaaacattteatgaaactgggagtttetgtgetggge tetgteeeteeceattetaetteeeeteeeteageatggaageetetggaagtggggetetgaeteecageetacagag agatteetaggaagtgttegaetgataaaegeatggeeaaaagtgaaetggggatgaggteeaagaeatetgeggtgggg 10 ggttetecagaeettagtgttetteeaetaeaaagtgggteeaaeagagaaaggtetgtgtteaeeaggtggeeetgaee ctgggagagtccagggcagggtgcagctgcattcatgctgctggggaacatgccctcaggttactcaccccatggacatg ttggccccagggactgaaaagcttaggaaatggtattgagaaatctggggcagccccaaaaggggagaggccatggggag 15 agtcagaaaagggggcaacaagttcgtgaccgtgcaggccaccttcgggacccaagtggtggagaaggtggtgctggtc agcctgcagagcgggtacctcttcatccagacagacaagaccatctacacccctggctccacagttctatcggatctt 25 caccgtcaaccacaagctgctacccgtgggccggacggtcatggtcaacattgagaacccggaaggcatcccggtcaagc aggactccttgtcttctcagaaccagcttggcgtcttgcccttgtcttgggacattccggaactcgtcaacatgggccag tggaagatccgagcctactatgaaaactcaccacagcaggtcttctccactgagttttgaggtgaaggagtacgtgctgcc 30 cagtttcgaggtcatagtggagcctacagagaaattctactacatctataacgagaagggcctggaggtcaccatcaccg ccaggttcctctacgggaagaaagtggagggaactgcctttgtcatcttcgggatccaggatggcgaacagaggatttcc ctgcctgaatccctcaagcgcattccgattgaggatggctcgggggaggttgtgctgagccggaaggtactgctggacgg ggtgcagaacctccgagcagaagacctggtggggaagtctttgtacgtgtctgccaccgtcatcttgcactcaggcagtg acatggtgcaggcagagcgcagcgggatccccatcgtgacctctccctaccagatccacttcaccaagacacccaagtac 35 ttcaaaccaggaatgccctttgacctcatggtgttcgtgacgaaccctgatggctctccagcctaccgagtccccgtggc agaagcccttgagcatcacggtgcgcacgaagaagcaggagctctcggaggcagagcaggctaccaggaccatgcaggct gtgctgaataagaagaacaaactgacgcagagtaagatctgggacgtggtggagaaggcagacatcggctgcaccccggg cagtgggaaggattacgccggtgtcttctccgacgcagggctgaccttcacgagcagcagtggccagcagaccgcccaga gggcagaacttcagtgcccgcagccagccgccgacgacgttccgtgcagctcacggagaagcgaatggacaaagtc ggcaagtaccccaaggagctgcgcaagtgctgcgaggacggcatgcgggagaaccccatgaggttctcgtgccagcgccg gacccgtttcatctccctgggcgaggcgtgcaagaaggtcttcctggactgctgcaactacatcacagagctgcggcggc agcacgcgcgggccagccacctgggcctggccaggagtaacctggatgaggacatcattgcagaagagaacatcgtttcc 50 cgaagtgagttcccagagagctggctgtggaacgttgaggacttgaaagagccaccgaaaaatggaatctctacgaagct catgaatatatttttgaaagactccatcaccacgtgggagattctggctgtcagcatgtcggacaagaaagggatctgtg tggcagaccccttcgaggtcacagtaatgcaggacttcttcatcgacctgcggctaccctactctgttgttcgaaacgag caggtggaaatccgagccgttctctacaattaccggcagaaccaagagctcaaggtgagggtggaactactccacaatcc agcettetgeageetggeeaceaecaagaggegteaceageagaeegtaaceateeeceeaagteetegttgteegtte 55 60 gaagcagaagcccgacggggtcttccaggaggatgcgcccgtgatacaccaagaaatgattggtggattacggaacaaca acgagaaagacatggccctcacggcctttgttctcatctcgctgcaggaggctaaagatatttgcgaggagcaggtcaac 65 agcctgccaggcagcatcactaaagcaggagacttccttgaagccaactacatgaacctacagagatcctacactgtggc cattgctggctatgctctggcccagatgggcaggctgaaggggcctcttcttaacaaatttctgaccacagccaaagata agaaccgctgggaggaccctggtaagcagctctacaacgtggaggccacatcctatgccctcttggccctactgcagcta aaagactttgactttgtgcctcccgtcgtgcgttggctcaatgaacagagatactacggtggtggctatggctctaccca ggccaccttcatggtgttccaagccttggctcaataccaaaaggacgccctgaccaccaggaactgaaccttgatgtgt 70 ccctccaactgcccagccgcagctccaagatcacccaccgtatccactgggaatctgccagcctcctgcgatcagaagag accaaggaaaatgagggtttcacagtcacagctgaaggaaaaggccaaggcaccttgtcggtggtgacaatgtaccatgc taaggccaaagatcaactcacctgtaataaattcgacctcaaggtcaccataaaaccagcaccggaaacagaaaagaggc ctcaggatgccaagaacactatgatccttgagatctgtaccaggtaccggggagaccaggatgccactatgtctatattg gacatatccatgatgactggctttgctccagacacagatgacctgaagcagctggccaatggtgttgacagatacatctc caagtatgagctggacaaagccttctccgataggaacaccctcatcatctacctggacaaggtctcacactctgaggatg 75

aaacaatgccaggacctcggcgccttcaccgagagcatggttgtctttgggtgccccaactgaccacacccccattccat accaccaggaactgaaccttgatgtccctccaactgccagccgcagctccaagatcaccaccgtatccactgggaa
tctgccagcctcctgcgatcagaagag (SEQ ID NO:12034)
ctcctccccatcctctcctctgtccctctgtccctctgcactgtccctgcactgtcccagcaccatgggacccacctcaggtcc cagoctgotgotcotgotactaacccacotcoccotggototggggagtcocatgtactotatcatcacccccaacatot 10 tgcggctggagagcgaggagaccatggtgctggaggcccacgacgcgcaaggggatgttccagtcactgttactgtccac 15 tgagaacccggaaggcatcccggtcaagcaggactccttgtcttctcagaaccagcttggcgtcttgcccttgtcttggg acattccggaactcgtcaacatgggccagtggaagatccgagcctactatgaaaactcaccacagcaggtcttctccact gagtttgaggtgaaggagtacgtgctgcccagtttcgaggtcatagtggagcctacagagaaattctactacatctataa Cgagaagggcctggaggtcaccatcaccgccaggttcctctacgggaagaaagtggagggaactgcctttgtcatcttcg 20 gtgctgagccggaaggtactgctggacggggtgcagaacctccgagcagaagacctggtggggaagtctttgtacgtgtc agatccaettcaccaagacacccaagtacttcaaaccaggaatgccetttgacctcatggtgttcgtgacgaaccctgat ggctctccagcctaccgagtccccgtggcagtccagggcgaggacactgtgcagtctctaacccagggagatggcgtggc caaactcagcatcaacacacaccccagccagaagcccttgagcatcacggtgcgcacgaagaagcaggagctctcggagg 25 cagageaggetaccaggaccatgeaggetetgeectacageaccgtgggcaactecaacaattacctgcateteteagtg ctacgtacagageteagacecggggagacceteaacgtcaactteetectgcgaatggacegegcccaegaggccaagat ccgctactacctacctgatcatgaacaagggcaggctgttgaaggcgggacgccaggtgcgagagcccggacaggacc 30 cggccagtcagaagaccggcagcctgtacctgggcagcagatgaccctgaagatagagggtgaccacggggcccgggtgg tactggtggccgtggacaagggcgtgttcgtgctgaataagaagaacaaactgacgcagagtaagatctgggacgtggtg gagaaggcagacatcggctgcaccccgggcagtgggaaggattacgccggtgtcttctccgacgcagggctgaccttcac 35 ccaccgaaaaatggaatctctacgaagctcatgaatatatttttgaaagactccatcaccacgtgggagattctggctgt cagcatgtcggacaagaaagggatctgtgtggcagacccttcgaggtcacagtaatgcaggacttcttcatcgacctgc 40 ggctaccctactctgttgttcgaaacgagcaggtggaaatccgagcgttctctacaattaccggcagaaccaagagctc aaggtgagggtggaactactccacaatccagccttctgcagcctggccaccaccaagaggcgtcaccagcagaccgtaac catccccccaagtcctcgttgtccgttccatatgtcatcgtgccgctaaagaccggcctgcaggaagtggaagtcaagg actgtggctgttcgcaccctggatccagaacgcctgggccgtgaaggagtgcagaaagaggacatcccacctgcagacct 45 cagtgaccaagtcccggacaccgagtctgagaccagaattctcctgcaagggaccccagtggcccagatgacagaggatg ccgtcgacgcggaacggctgaagcacctcattgtgaccccctcgggctgcggggaacagaacatgatcggcatgacgccc acggtcatcgctgtgcattacctggatgaaacggagcagtgggagaagttcggcctagagaagcggcagggggccttgga gctcatcaagaaggggtacacccagcagctggccttcagacaacccagctctgcctttgcggccttcgtgaaacgggcac ccagcacctggctgaccgcctacgtggtcaaggtcttctctctggctgtcaacctcatcgccatcgactcccaagtcctc tgcggggctgttaaatggctgatcctggagaagcagaagccgacggggtcttccaggaggatgcgccgtgatacacca agaaatgattggtggattacggaacaacaacgagaagacatggccctcacggcctttgttctcatctcgctgcaggaggctaaaagacattgctggagagacttccttgaagccaactac 50 atgaacctacagagatcctacactgtggccattgctggctatgctctggccagatgggcaggctgaagggcctcttct
taacaaatttctgaccacagccaaagataagaaccgctgggaggaccctggtaagcagctctacaacgtggaggccacat
cctatgccctctttggccctactgcagctaaaagactttgactttgtgcctccggtcgtgggttggctcaatgaacagaga 55 tactacggtggtggctatggctctacccaggccaccttcatggtgttccaagccttggctcaataccaaaaggacgccc aatotgccagcctcctgcgatcagaagagaccaaggaaaatgagggtttcacagtcacagctgaaggaaaaggccaaggc accttgtcggtggtgacaatgtaccatgctaaggccaaagatcaactcacctgtaataaattcgacctcaaggtcaccat 60 aaaaccagcaccggaaacagaaaagaggcctcaggatgccaagaacactatgatccttgagatctgtaccaggtaccggg gagaccaggatgccactatgtctatattggacatatccatgatgactggctttgctccagacacagatgacctgaagcag ctggccaatggtgttgacagatacatctccaagtatgagctggacaaagccttctccgataggaacaccctcatcatcta cctggacaaggteteacaetetgaggatgaetgtetagettteaaagtteaecaataetttaatgtagagettateeage ctggagcagtcaaggtctacgcctattacaacctggaggaaagctgtacccggttctaccatccggaaaaggaggatgga 65 aagotgaacaagototgocgtgatgaactgtgocgotgtgocgagagaattgottcatacaaaagtoggatgacaaggt caccctggaagaacggctggacaaggcctgtgagccaggagtggactatgtgtacaagacccgactggtcaaggttcagc tgtccaatgactttgacgagtacatcatggccattgagcagaccatcaagtcaggctcggatgaggtgcaggttggacag cagcgcacgttcatcagccccatcaagtgcagagaagccctgaagctggaggagaaaaaacactacctcatgtggggtct ctcctccgatttctggggagagaagcccaacctcagctacatcatcgggaaggacacttgggtggagcactggcctgagg 70 aggacgaatgccaagacgaagagaaccagaaacaatgccaggacctcggcgccttcaccgagagcatggttgtctttgggtgcccaactgaccacaccccattcc (SEQ ID NO:12035) tgacattagacaggtacaaaagctctagaaatgaggactttcctcagtgatgacttttttcaccaccaaagtcactcagt catcctgacaagggtacagtgaggggagcctccttggaaaataaactcacttggatagtgaactcctgcacatacctcaaa gcccatctgaaatgtcccctcctacaggaagttttccctgaccctccaagaagcagagttctatttcactggggaaaaca 75 tttcttcttcttctttttttttccctgccctgcacatgagctagaaaacatttcatgaaactgggagtttctgtgctgggc tctgtccctccccattctacttcccctccctcagcatggaagcctctggaagtggggctctgactcccaqcctacaqaq agattectaggaagtgttegactgataaacgcatggccaaaagtgaactggggatgaggtecaagacatetgeggtgggg ggttctccagaccttagtgttcttccactacaaagtgggtccaacagagaaaggtctgtgttcaccaggtggccctgacc ctgggagagtccagggcagggtgcagctgcattcatgctgctggggaacatgccctcaggttactcaccccatggacatg

ttggccccagggactgaaaagcttaggaaatggtattgagaaatctggggcagccccaaaaggggagagccatggggag aaggggggetgagtggggaaaggcaggagccagataaaaagccagctccagcaggcgctgctcactcctcccatcct ctccctctgtccctctgtccctctgaccctgcactgtcccagcaccatgtttctcccattctacttccctcctcagcatt ggaagctcgtaagtgggctctgactcccagcctacagagagattccttaagaagtggttcgactgataaacgcattgcca aaagtgaactgggatgaggtccaagacatctgcggtgggggttctccagaccttagtgttcttccactacaaagtgggtc caacagagaaaggtctgtgttcaccaggtggccctgaccctggagagtccagggcagggtgcagctgcattcatgctgct ggggaacatgccctcaggttactcaccccatgacatgttggccccagggactgaaaagcttaggaaatggtattgagaaa tctggggcagccaaaaggggagaggccatgggggagaaggggggctgagtgggggaaagcaggagcgagataaaagcca getecageaggegetgeteactecteceatectetecetetgtecetetgtecetetgaeeetgeaetgteceageaee atgggacccacctcaggtcccagcctgctgctcctgctactacccacctccccctggctctggggagtcccatgtactc tatcateacececaacatettgeggetggagagegaggacatggtgetggaggeecaegaegegeaaggggatgtteeagteaetgttaetgteeaegaetteecaggeaaaaaaetagtgetgteeagtgagaagaetgtgetgaeeetgeeaee aaccacatgggcaacgtcaccttcacgatcccagccaacagggagttcaagtcagaaaaggggcgcaacaagttcgtgac 20 categtgacetetecetaccagatecaettcaccaagacaeccaagtaettcaaaccaggaatgeeetttgaceteatgg tgttcgtgacgaaccctgatggctctccagcctaccgagtccccgtggcagtccagggcgaggacactgtgcagtctcta 25 gaagcaggagctctcggaggcagagcaggctaccaggaccatgcaggctctgccctacagcaccgtgggcaactccaaca attacctgcatctctcagtgctacgtacagagctcagacccggggagaccctcaacgtcaacttcctcctgcgaatggac cgcgcccacgaggccaagatccgctactacacctacctgatcatgaacaagggcaggctgttgaaggcgggacgccaggt gegagageceggecaggacetggtggtgetgecectgtceateaceaeegaetteateeetteetteegeetggtggegt 30 ggctcgctggtggtaaaaagcggccagtcagaagaccggcagcctgtacctgggcagcagatgaccctgaagatagagg tgaccacggggcccgggtggtactggtggccgtggacaagggcgtgttcgtgctgaataagaagaacaaactgacgcaga gtaagatetgggacgtggtggagaaggcagacateggetgcacceegggeagtgggaaggattaegeeggtgtettetee 40 accggcagaaccaagagctcaaggtgagggtggaactactccacaatccagccttctgcagcctggccaccaccaagagg cgtcaccagcagaccgtaaccatcccccccaagtcctcgttgtccgttccatatgtcatcgtgccgctaaagaccggcct aaggaatcagaatgaacaaaactgtggctgttcgcaccctggatccagaacgcctgggccgtgaaggagtgcagaaagag gacatcccacctgcagacctcagtgaccaagtcccggacaccgagtctgagaccagaattctcctgcaagggaccccagt ggcccagatgacagaggatgccgtcgacgcggaacggctgaagcacctcattgtgaccccctcgggctgcgggggaacaga acatgateggcatgacgcccaeggtcategctgtgcattacctggatgaaacggagcagtgggagaagttcggcctagag aagcggcagggggccttggagctcatcaagaaggggtacacccagcagctggccttcagacaacccagctctgcctttgc ggccttcgtgaaacgggcacccagcacctggctgaccgcctacgtggtcaaggtcttctctctggctgtcaacctcatcg ccatcgactcccaagtcctctgcggggctgttaaatggctgatcctggagaagcagaagcccgacggggtcttccaggag gatgcgccgtgatacaccaagaaatgattggtggattacggaacaacaacgagaaagacatggccctcacggcctttgt tctcatctcgctgcaggaggctaaagatatttgcgaggagcaggtcaacagcctgccaggcagcatcactaaagcaggag acttccttgaagccaactacatgaacctacagagatcctacactgtggccattgctggctatgctctggccagatgggc acttecttgaagecaactacatyaactacagyaateetatatygyttattystystattystatty 55 cacccaccgtatccactgggaatctgccagctcctgcgatcagaagagaccaaggaaaatgagggtttcacagtcacag ctgaaggaaaaggccaaggcaccttgtcggtggtgacaatgtaccatgctaaggccaaggatcaactcacctgtaataaa 60 ttcgacctcaaggtcaccataaaaccagcaccggaaacagaaaagaggcctcaggatgccaagaacactatgatccttga gatctgtaccaggtaccggggagaccaggatgccactatgtctatattggacatatccatgatgactggctttgctcag acacagatgacctgaagcagctggccaatggtgttgacagatacatctccaagtatgagctggacaaagccttctccgat aggaacaccctcatcatctacctggacaaggtctcacactctgaggatgactgtctagctttcaaagttcaccaatactt 65 taatgtagagcttatccagcctggagcagtcaaggtctacgcctattacaacctggaggaaagctgtacccggttctacc atccggaaaaggaggatggaaagctgaacaagctctgccgtgatgaactgtgccgctgtgctgaggagaattgcttcata caaaagtoggatgacaaggtoaccotggaagaacggotggacaaggoctgtgagccaggagtggactatgtgtacaagac ccgactggtcaaggttcagctgtccaatgactttgacgagtacatcatggccattgagcagaccatcaagtcaggctcgg atgaggtgcaggttggacagcagcgcacgttcatcagccccatcaagtgcagagaagccctgaagctggaggagaagaaa cactacctcatgtggggtctctcctccgatttctggggagagagcccaacctcagctacatcatcatcgggaaggacacttg ggtggagcactggcctgaggaggacgaatgccaagacgaagagaaccagaaacaatgccaggacctcggcgccttcaccg agagcatggttgtctttgggtgccccaactgaccacaccccattccatgaacctacagagatcctacactgtggccatt acgatcccagccaacagggagttcaagtcagaaaaggggcgcaacaagttcgtgaccgtgcaggccaccttcgggaccca

gctccacagttctctatcggatcttcaccgtcaaccacaagctgctacccgtgggccggacggtcatggtcaacattgag aacceggaaggeateeeggteaageaggaeteettgtetteteagaaceagettggegtettgeeettgtettgggaeat tccggaactcgtcaacatgggccagtggaagatccgagcctactatgaaaactcaccacagcaggtcttctccactgagt ttgaggtgaaggagtacgtgctgcccagtttcgaggtcatagtggagcctacagagaaattctactacatctataacgag aagggcctggaggtcaccatcaccgccaggttcctctacgggaagaaagtggagggaactgcctttgtcatcttcgggat ccaggatggcgaacagaggatttccctgcctgaatccctcaagcgcattccgattgaggatggctcgggggaggttgtgc tgagccggaaggtactgctggacggggtgcagaacctccgagcagaagacctggtggggaagtctttgtacgtgtctgcc ccacttcaccaagacacccaagtacttcaaaccaggaatgccctttgacctcatggtgttcgtgacgaaccctgatggct ctccagcctaccgagtccccgtggcagtccagggcgaggacactgtgcagtctctaacccagggagatggcgtggccaaa ctcagcatcaacacacaccccagccagaagccettgagcatcacggtgcgcacgaagaagcaggagctetcggaggcaga gcaggctaccaggaccatgcaggctctgccctacagcaccgtgggcaactccaacaattacctgcatctctcagtgctac gtacagageteagaeeeggggagaeeeteaaegteaaetteeteetgegaatggaeegegeeeaegaggeeaagateege atgtcggacaagaaagggatctgtgtggcagaccccttcgaggtcacagtaatgcaggacttcttcatcgacctgcggctaccctactctgttgttgtcacaggtaatccggttactctacaattaccggcagaaccaagagctcaagg tgagggtggaactactccacaatccageettetgcageetggeeaccaccaagaggegtcaecagcagaccgtaaccate 30 ccccccaagtcctcgttgtccgttccatatgtcatcgtgccgctaaagaccggcctgcaggaagtggaagtcaaggctgc tggctgttcgcaccctggatccagaacgcctgggccgtgaaggagtgcagaaagaggacatcccacctgcagacctcagt gaccaagtcccggacaccgagtctgagaccagaattctcctgcaagggaccccagtggcccagatgacagaggatgccgt cgacgcggaacggctgaagcacctcattgtgaccccctcgggctgcggggaacagaacatgatcggcatgacgcccacgg acggtggtggctatggctctacccaggccaccttcatggtgttccaagccttggctcaataccaaaaggacgcccctgac tgccagcctcctgcgatcagaagagaccaaggaaaatgagggtttcacagtcacagctgaaggaaaaggccaaggcacct tgtcggtggtgacaatgtaccatgctaaggccaaagatcaactcacctgtaataaattcgacctcaaggtcaccataaaa ccagcaccggaaacagaaagaggcctcaggatgccaagaacactatgatccttgagatctgtaccaggtaccggggaga ccaggatgccactatgtctatatttggacatatccatgatgactggctttgctccagacacagatgacctgaagcagctgg ccaatggtgttgacagatacatctccaagtatgagctggacaaagccttctccgataggaacacctcatcatctacctg gacaaggtctcacactctgaggatgactgtctagctttcaaagttcaccaatactttaatgtagagcttatccagcctgg agcagtcaaggtctacgcctattacaacctggaggaaagctgtacccggttctaccatccggaaaaggaggatggaaagctgaacaagctctgccgtgatgaactgtgccgctgtgctgaggagaattgcttcatacaaaagtcggatgacaaggtcacc 60 ttcagatgcatcttatcaaagtataaacattccagtaacacagaacatggttccttcatcccgacttctggtctattata tcgtcacaggagaacagacagcagaattagtgtctgattcagtctggttaaatattgaagaaaaatgtggcaaccagctc caggttcatctgtctcctgatgcagatgcatattctccaggccaaactgtgtctcttaatatggcaactggaatggattc ctgggtggcattagcagcagtggacagtgctgtgtatggagtccaaagaggagccaaaaagcccttggaaagagtatttc aattettagagaagagtgatetgggetgtgggeaggtggtggcetcaacaatgccaatgtgttccacctagctggactt accttcctcactaatgcaaatgcagatgactcccaagaaaatgatgaaccttgtaaagaaattctcaggccaagaagaac gctgcaaaagaagatagaagaaatagctgctaaatataaacattcagtagtgaagaaatgttgttacgatggagcctgcg ttaataatgatgaaacctgtgagcagcgagctgcacggattagtttagggccaagatgcatcaaagctttcactgaatgt tgtgtcgtcgcaagccagctccgtgctaalatctctcataaagacatgcaattgggaaggctacacatgaagaccctgtt

tggaaacaggaaatcattggaacatttttcattctgacccattaattgaaaagcagaaactgaagaaaaattaaaagaa gggatgttgagcattatgtcctacagaaatgctgactactcttacagtgtgtggaaggtggaagtgctagcacttggtt tgtggctagttgagaattatcaattagataatggatctttcaaggaaaattcacagtatcaaccaataaaattacagggt accttgcctgttgaagcccgagagaacagcttatatcttacagcctttactgtgattggaattagaaaggctttcgatat atgcccctggtgaaaatcgacacagctctaattaaagctgacaactttctgcttgaaaatacactgccagcccagagca cctttacattggccatttctgcgtatgctctttccctgggagataaaactcacccacagtttcgttcaattgtttcagct ttgaagagagagctttggttaaaggtaatccaccatttatcgtttttggaaagacaatcttcagcataaagacagctc tgtacctaacactggtacggcacgtatggtagaaacaactgcctatgctttactcaccagtctgaacttgaaagatataa 10 attatgttaacccagtcatcaaatggctatcagaagagcagaggtatggaggtggcttttattcaacccaggacacaatc aatgccattgagggcctgacggaatattcactcctggttaaacaactccgcttgagtatggacatcgatgtttcttacaa gcataaaggtgccttacataattataaaatgacagacaagaatttccttgggaggccagtagaggtgcttctcaatgatg acctcattgtcagtacaggatttggcagtggcttggctacagtacatgtaacaactgtagttcacaaaaccagtacctct gaggaagtttgcagcttttatttgaaaatcgatactcaggatattgaagcatcccactacagaggctacggaaactctga ttacaaacgcatagtagcatgtgccagctacaagcccagcagggaagaatcatcatctggatcctctcatgcggtgatgg acatctccttgcctactggaatcagtgcaaatgaagaagacttaaaagcccttgtggaaggggtggatcaactattcactgattaccaaatcaaagatggacatgttattctgcaactgaattcgattccctccagtgatttcctttgtgtacgattccg gatatttgaactctttgaagttgggtttctcagtcctgccactttcacagtgtacgaataccacagaccagataaacagt acaaaactggggaagctgttgctgagaaagactctgagattaccttcattaaaaaggtaacctgtactaacgctgagctg gtaaaaqqaagacagtacttaattatgggtaaagaagccctccagataaaatacaatttcagtttcaggtacatctaccc tttagattccttgacctggattgaatactggcctagagacacaacatgttcatcgtgtcaagcatttttagctaatttag 25 atgaatttgccgaagatatctttttaaatggatgctaaaattcctgaagttcagctgcatacagtttgcacttatggact cctgttgttgaagttcgtttttttttttttttttttttaaacattcatagctggtcttatttgtaaagctcactttac ttagaattagtggcacttgcttttattagagaatgatttcaaatgctgtaactttctgaaataacatggccttggagggc atgaagacagatactcctccaaggttattggacaccggaaacaataaattggaacactcctcaaacctaccactcagga 30 ctacctccaaccatgggcctttttgggaatactttgtttttaatcttcctggggaaaacctggggacaggagcaaacata tgtcatttcagcaccaaaaatattccgtgttggagcatctgaaaatattgtgattcaagtttatggatacactgaagcat ttgatgcaacaatctctattaaaagttatcctgataaaaaatttagttactcctcaggccatgttcatttatcctcagag aataaattccaaaactctgcaatcttaacaatacaaccaaaacaattgcctggaggacaaaacccagtttcttatgtgta 35 agagaaactgtcttaaccttcatagatcctgaaggatcagaagttgacatggtagaagaaattgatcatattggaattatctcttttcctgacttcaagattccgtctaatcctagatatggtatgtgacgatcaaggctaaatataaagagactttcaacactggaaccgcatattttgaagttaaagaatatgtcttgccacatttttctgtctcaatcgagccagaatataaa 40 ttcattggttacaagaactttaagaattttgaaattactataaaagcaagatatttttataataaagtagtcactgaggc tgacgtttatatcacatttggaataagagaagacttaaaaagatgatcaaaaagaaatgatgcaaacagcaatgcaaaaca caatgttgataaatggaattgctcaagtcacatttgattctgaaacagcagtcaaagaactgtcatactacagtttagaa gatttaaacaacaagtacctttatattgctgtaacagtcatagagtctacaggtggattttctgaagaggcagaaatacc tggcatcaaatatgtcctctcccctacaaactgaatttggttgctactcctcttttcctgaagcctgggattccatatc gtaaaccaagagacatctgacttggatccaagcaaaagtgtaacacgtgttgatgatggagtagcttcctttgtgcttaa teteceatetggagtgaeggtgetggagtttaatgteaaaaetgatgeteeagatetteeagaagaaaateaggeeaggg ctagtgggagaacatctgaatattattgttacccccaaaagcccatatattgacaaaataactcactataattacttgat 50 tttatecaagggcaaaattatecattttggcaegagggagaaatttteagatgcatettateaaagtataaacatteeag gattcagtctggttaaatattgaagaaaaatgtggcaaccagctccaggttcatctgtctcctgatgcagatgcatattc tccaggccaaactgtgtctcttaatatggcaactggaatggattcctgggtggcattagcagcagtggacagtgctgtgt atggagtccaaagaggagccaaaaagcccttggaaagagtatttcaattcttagagaagagtgatctgggctgtgtgggcaggtggcctcaacaatgccaatgtgttccacctagctggacttaccttcctcactaatgcaaatgcagatgactccca agaaaatgatgaaccttgtaaagaaattctcaggccaagaagaacgctgcaaaagaagatagaagaaatagctgctaaat ataaacattcagtagtgaagaaatgttgttacgatggagcctgcgttaataatgatgaaacctgtgagcagcgagctgcacggattagtttagtttagggccaagccagctccgtgcaccggattagtttagtttagggccaagccagctccgtgctaatatetc tcataaagacatgcaattgggaaggctacacatgaagaccctgttaccagtaagccagaaattcggaagttatttc 60 cagaaagctggttgtgggaagttcatcttgttcccagaagaaaacagttgcagtttgccctacctgattctctaaccacc tgggaaattcaaggcattggcatttcaaacactggtatatgtgttgctgatatatgtcaaggcaaaggtgttcaaaggtgt cttcctggaaatgaatataccatattctgttgtacgaggagaacagatccaattgaaaggaactgtttacaactatagga cttctgggatgcagttctgtgttaaaatgtctgctgtggagggaatctgcacttcggaaagcccagtcattgatcatcag ggcacaaagtcctccaaatgtgtgcgccagaaagtagaggctcctccagtcacttggtgacattcactgtgcttcctct 65 ggaaattggccttcacaacatcaatttttcactggagacttggtttggaaaagaaatcttagtaaaaacattacgagtgg tgccagaaggtgtcaaaagggaaagctattctggtgttactttggatcctaggggtatttatggtaccattagcagacga aaggagttcccatacaggatacccttagatttggtccccaaaacagaaatcaaaaggattttgagtgtaaaaggactgct tgtaggtgagatcttgtctgcagttctaagtcaggaaggcatcaatatcctaacccacctccccaaagggagtgcagagg cggagctgatgagcgttgtcccagtattctatgtttttcactacctggaaacaggaaatcattggaacatttttcattct 70 gacccattaattgaaaagcagaaactgaagaaaaattaaaagaagggatgttgagcattatgtcctacagaaatgctga ctactcttacagtgtgtgggaagggtggaagtgctagcacttggttaacagcttttgctttaagagtacttggacaagtaa ataaatacgtagagcagaaccaaaattcaatttgtaattctttattgtggctagttgagaattatcaattagataatgga tettteaaggaaaatteacagtateaaccaataaaattacagggtacettgeetgttgaageecgagagaacagettata tettacageetttaetgtgattggaattagaaaggetttegatatatgeeeeetggtgaaaategaeaegetetaatta aagetgacaactttetgettgaaaatacaetgecageecagageacetttacattggecatttetgegtatgetetttee ctgggagataaaactcacccacagtttcgttcaattgtttcagctttgaagagagaagctttggttaaaggtaatccacccatttatcgtttttggaaagacaatcttcagcataaagacagctctgtacctaacactggtacggcacgtatggtagaaacaactgcctatgctttactcaccagtctgaacttgaaagatataaattatgttaacccagtcatcaaatggctatcagaa gagcagaggtatggaggtggcttttattcaacccaggacaccatcaatgccattgagggcctgacggaatattcactcct ggttaaacaactccgcttgagtatggacatcgatgtttcttacaagcataaaggtgccttacataattataaaatgacag acaagaatttccttgggaggccagtagaggtgcttctcaatgatgacctcattgtcagtacaggatttggcagtggcttg gctacagtacatgtaacaactgtagttcacaaaaccagtacctctgaggaagtttgcagctttatttgaaaatcgatac

tcaggatattgaagcatcccactacagaggctacggaaactctgattacaaacgcatagtagcatgtgccagctacaagc ccagcagggaagaatcatcatctggatcctctcatgcggtgatggacatctccttgcctactggaatcagtgcaaatgaa gaagacttaaaagcccttgtggaaggggtggatcaactattcactgattaccaaatcaaagatggacatgttattctgca actgaattcgattccctccagtgatttcctttgtgtacgattccggatatttgaactctttgaagttgggtttctcagtc ctgccactttcacagtttacgaataccacagaccagataaacagtgtaccatgttttatagcacttccaatatcaaaatt cagaaagtctgtgaaggagccgcgtgcaagtgtgtagaagctgattgtgggcaaatgcaggaagaattggatctgacaat ctctgcagagacaagaaacaacagcatgtaaaccagagattgcatatgcttataaagttagcatcactaccatcactg tagaaaatgtttttgtcaagtacaaggcaacccttctggatatctacaaaactggggaagctgttgctgagaaagactct gagattacettcattaaaaaggtaaeetgtaetaaegetgagetggtaaaaggaagacagtaettaattatgggtaaaga agccctccagataaaatacaatttcagtttcaggtacatctaccctttagattccttgacctggattgaatactggccta gagacacaacatgttcatcgtgtcaagcatttttagctaatttagatgaatttgccgaagatatctttttaaatggatgc tttttaaacattcatagctggtcttatttgtaaagctcactttacttagaattagtggcacttgcttttattagagaatg atttcaaatgctgtaactttctgaaataacatggccttggagggcatgaagacagatactcctccaaggttattggacac cggaaacaataaattggaacacctcctcaaacctaccactcaggaatgtttgctggggccgaaagaacagtccattgaaa gggagtattacaaaaacatggcctttgcttgaaagaaaataccaaggaacaggaaactgatcattaaagcctgagtttgc tttc (SEQ ID NO:12038) ctacctccaaccatgggccttttgggaatactttgttttttaatcttcctggggaaaacctggggacaggagcaaacatatgtcatttcagcaccaaaaatattccgtgttggagcatctgaaaatattgtgattcaagtttatggatacactgaagcat 20 ttgatgcaacaatctctattaaaagttatcctgataaaaaatttagttactcctcaggccatgttcatttatcctcagag aataaattccaaaactctgcaatcttaacaatacaaccaaaacaattgcctggaggacaaaacccagtttcttatgtgta agagaaactgtcttaaccttcatagatcctgaaggatcagaagttgacatggtagaagaaattgatcatattggaattat 25 ctcttttcctgacttcaagattccgtctaatcctagatatggtatgtggacgatcaaggctasatataaagaggactttt caacaactggaaccgcatattttgaagttaaagaatatgtcttgccacatttttctgtctcaatcgagccagaatataat ttcattggttacaagaactttaagaattttgaaattactataaaagcaagatatttttataataaagtagtcactgaggc tgacgtttatatcacatttggaataagagaagacttaaaagatgatcaaaaagaaatgatgcaaacagcaatgcaaaca caatgttgataaatggaattgctcaagtcacatttgattctgaaacagcagtcaaagaactgtcatactacagtttagaa 30 gatttaaacaacaagtacctttatattgctgtaacagtcatagagtctacaggtggattttctgaagaggcagaaatacc tggcatcaaatatgtcctctccctacaaactgaatttggttgctactcctcttttcctgaagcctgggattccatatc gtaaaccaagagacatetgaettggateeaageaaaagtgtaacaegtgttgatgatggagtagetteetttgtgcttaa tctcccatctggagtgacggtgctggagtttaatgtcaaaactgatgctccagatcttccagaagaaaatcaggccaggg 35 ctagtgggagaacatctgaatattattgttacccccaaaagcccatatattgacaaaataactcactataattacttgat tttäteeaagggeaaaattateeatttiggeaegagggagaatttteagaiggeatettateaaagtataaacatteeag taacacagaacatggtteetteateeggettettggtetattatategteacaggagaacaggagaattagtgtet gattcagtctggttaaatattgaagaaaaatgtggcaaccagctccaggttcatctgtctcctgatgcagatgcatattc 40 tccaggccaaactgtgtctcttaatatggcaactggaatggattcctgggtggcattagcagcagtggacagtgctgtgt atggagtccaaagaggagccaaaaagcccttggaaagagtatttcaattcttagagaagagtgatctgggctgtggggca ggtggtggcctcaacaatgccaatgtgttccacctagctggacttaccttcctcactaatgcaaatgcagatgactccca agaaaatgatgaaccttgtaaagaaattctcaggccaagaagacgctgcaaaagaagatagaagaaatagctgctaaat ataaacattcagtagtgaagaaatgttgttacgatggagcctgcgttaataatgatgaaacctgtgagcagcgagctgca 45 cggattagtttagggccaagatgcatcaaagctttcactgaatgttgtgtcgtcgcaagccagctccgtgctaatatctc cagaaagctggttgtgggaagttcatcttgttcccagaagaaaacagttgcagtttgccctacctgattctctaaccacc tgggaaattcaaggcattggcatttcaaacactggtatatgtgttgctgatactgtcaaggcaaaggtgttcaaagatgt cttcctggaaatgaatataccatattctgttgtacgaggagaacagatccaattgaaaggaactgtttacaactatagga 50 cttctgggatgcagttctgtgttaaaatgtctgctgtggagggaatctgcacttcggaaagcccagtcattgatcatcag ggcacaaagtcctccaaatgtgtgcgccagaaagtagagggctcctccagtcacttggtgacattcactgtgcttcctct ggaaattggccttcacaacatcaatttttcactggagacttggtttggaaaagaaatcttagtaaaaacattacgagtgg tgccagaaggtgtcaaaagggaaagctattctggtgttactttggatcctaggggtatttatggtaccattagcagacga aaggagttcccatacaggatacccttagatttggtccccaaaacagaaatcaaaaggattttgagtgtaaaaggactgct tgtaggtgagatettgtetgeagttetaagteaggaaggeateaatateetaacecaceteeccaaagggagtgeagagg cggagctgatgagggttgtcccagtattctatgtttttcactacotggaaacaggaaatcattggaacatttttcattct gaccoattaattgaaaagcagaaactgaagaaaaattaaaagaagggatgttggacattatgtcctacagaaatgctga ctactcttacagtgtgtggaagggtggaagtgctagcacttggttaacagcttttgctttaagagtacttggacaagtaa ataaatacgtagagcagaaccaaaattcaatttgtaattctttattgtggctagttgagaattatcaattagataatgga 60 tctttcaaggaaaattcacagtatcaaccaataaaattacagggtaccttgcctgttgaagcccgagagaacagcttata tcttacagcctttactgtgaattggaattagaaaggctttcgatatatgccccctggtgaaaatcgacacagctctaatta aagetgacaactttetgettgaaaatacactgecageecagageacetttacattggecatttetgegtatgetetttee catttatcgtttttggaaagacaatcttcagcataaagacagctctgtacctaacactggtacggcacgtatggtagaaa 65 caactgcctatgctttactcaccagtctgaacttgaaagatataaattatgttaacccagtcatcaaatggctatcagaa gagcagaggtatggaggtggcttttattcaacccaggacaccatcaatgccattgagggcctgacggaatattcactcct ggttaaacaactccgcttgagtatggacatcgatgtttcttacaagcataaaggtgccttacataattataaaatgacag acaagaatttccttgggaggccagtagaggtgcttctcaatgatgacctcattgtcagtacaggattttggcagtggcttg gctacagtacatgtaacaactgtagttcacaaaaccagtacctctgaggaagtttgcagcttttatttgaaaatcgatac 70 tcaggatattgaagcatcccactacagaggctacggaaactctgattacaaacgcatagtagcatgtgccagctacaagc ccagcagggaagaatcatcatctggatcctctcatgcggtgatggacatctccttgctactggaatcagtgcaaatgaa gaagacttaaaagcccttgtggaaggggtggatcaactattcactgattaccaaatcaaagatggacatgttattctgca actgaattcgattccctccagtgatttcctttgtgtacgattccggatatttgaactctttgaagttgggtttctcagtcctgccactttcacagtttacgattaccacagaccagataaacagtgtaccatgttttatagcacttccaatatcaaaatt 75 tagaaaatgtttttgtcaagtacaaggcaacccttctggatatatctacaaaaactggggaagctgttgctgagaaagactct
gagattaccttcattaaaaaggtaacctgtactaacgctgagctggtaaaaggaagacagtacttaattatgggtaaaga
agccctccagataaaatacaatttcagtttcaggtacatctaccctttagattccttgacctggattgaatactggccta gagacacaacatgttcatcgtgtcaagcatttttagctaatttagatgaatttgccgaagatatcttttaaatggatgc tttttaaacattcatagctggtcttatttgtaaagctcactttacttagaattagtggcacttgcttttattagagaatg

cgtgttgatgatgagtagcttcctttgtgcttaatctcccatctggagtgacggtgctggagtttaatgtcaaaactga tgctccagatcttccagaagaaaatcaggccagggaaggttaccgagcaatagcatactcatctctcagccaaagttacc tttatattgattggactgataaccataaggctttgctagtgggagaacatctgaatattattgttacccccaaaagccca tatattgacaaaataactcactataattacttgattttatccaagggcaaaattatccactttggcacgagggagaaatt ttcagatgcatcttatcaaagtataaacattccagtaacacagaacatggttccttcatcccgacttctggtctattata 10 to g to a caggaga a caga cag a cag a cag a cag a tag type to gather a cag to the cag tcaggitcatctgtctcctgatgcagatgcatattctccaggccaaactgtgtctcttaatatggcaactggaatggattc ctgggtggcattagcagcagtggacagtgctgtgtatggagtccaaagaggagccaaaaagcccttggaaagagtatttc aattettagagaagagtgatetggggetgtggggeaggtggtggeeteaacaatgeeaatgtgtteeacetagetggaett accttcctcactaatgcaaatgcagatgactcccaagaaatgatgaaccttgtaaagaaattctcaggccaagaagaac gctgcaaaagaagatagaagaaatagctgctaaatataaacattcagtagtgaagaaatgttgttacgatggagcctgcg ttaataatgatgaaacctgtgagcagcgagctgcacggattagtttagggccaagatgcatcaaagctttcactgaatgt tgtgtcgtcgcaagccagctccgtgctaatatctctcataaagacatgcaattgggaaggctacacatgaagaccctgttaccagtaagcaagccagaaattcggagttattttccagaaagctggttgtgggaagttcatcttgttcccagaagaaaac agttgcagtttgccctacctgattctctaaccacctgggaaattcaaggcattgcgggatttcaaaacactggtatatgtgtt
gctgatactgtcaaaggcaaaggtgttcaaagatgtcttctggaaatgaatataccatattctgttgtacgaggagaaca
gatccaattgaaaggaactgtttacaactataggacttctgggatgcagttctgtgtgtaaaatgtctgctgtgtggagggaa
tctgcacttcggaaaggccagtcattgatcatcagggcacaaagtcctccaaatgtgtgcgccagaaagtagagggctcc tccagtcacttggtgacattcactgtgcttcctctggaaattggccttcacaacatcaatttttcactggagacttggtt tggaaaagaaatcttagtaaaaacattacgagtggtgccagaaggtgtcaaaagggaaagctattctggtgtactttgg 25 atcctaggggtatttatggtaccattagcagacgaaaggagttcccatacaggatacccttagattttggtcccaaaaca gaaatcaaaaggattttgagtgtaaaaggactgcttgtaggtgagatcttgtctgcagttctaagtcaggaaggcatcaa tatcctaacccacctccccaaagggagtgcagaggcggagctgatgatgagcgttgtcccagtattctatgttttcactacc tggaaacaggaaatcattggaacatttttcattctgacccattaattgaaaagcagaaactgaagaaaaattaaaagaa 30 tgtggctagttgagaattatcaattagataatggatctttcaaggaaaattcacagtatcaaccaataaaattacagggt accttgcctgttgaagcccgagagaacagcttatatcttacagcctttactgtgattggaattagaaaggctttcgatat atgccccctggtgaaaatcgacacagctctaattaaagctgacaactttctgcttgaaaatacactgccagcccagagca cctttacattggccatttctgcgtatgctctttccctgggagataaaactcacccacagtttcgttcaattgtttcagct 35 ttgaagagagagagctttggttaaaggtaatccacccatttatcgttttttggaaagacaatcttcagcataaagacagctc tgtacctaacactggtacggcacgtatggtagaaacaactgcctatgctttactcaccagtctgaacttgaaagatataa attatgttaacccagtcatcaaatggctatcagaagagcagaggtatggaggtggcttttattcaacccaggacacaatc aatgccattgagggcctgacggaatattcactcctggttaaacaactccgcttgagtatggacatcgatgtttcttacaa gcataaaggtgccttacataattataaaatgacagacaagaatttccttgggaggccagtagaggtgcttctcaatgatg acctcattgtcagtacaggatttggcagtggcttggctacagtacatgtaacaactgtagttcacaaaaccagtacctct gaggaagtttgcagcttttatttgaaaatcgatactcaggatattgaagcatcccactacagaggctacggaaactctga 40 ttacaaacgcatagtagcatgtgccagctacaagcccagcagggaagaatcatcatctggatcctctcatgcggtgatgg acatctccttgcctactggaatcagtgcaaatgaagaagacttaaaagcccttgtggaaggggtggatcaactattcact gattaccaaatcaaagatggacatgttattctgcaactgaattcgattccctccagtgatttcctttgtgtacgattccg 45 gatatttgaactctttgaagttgggtttctcagtcctgccactttcacagtgtacgaataccacagaccagataaacagt gtaccatgttttatagcacttccaatatcaaaattcagaaagtctgtgaaggagccgcgtgcaagtgtgtagaagctgat atatgettataaagttageateacatecateategtagaaaatgtttttgteaagtaeaaggeaaccettetggatatet acaaaactggggaagctgttgctgagaaagactctgagattaccttcattaaaaaggtaacctgtactaacgctgagctg 50 gtaaaaggaagacagtacttaattatgggtaaagaagccctccagataaaatacaatttcagtttcaggtacatctaccc tttagattccttgacctggattgaatactggcctagagacacaacatgttcatcgtgtcaagcatttttagctaatttag atgaatttgccgaagatatetttttaaatggatgetaaaatteetgaagtteagetgeataeagtttgeaettatggaet cctgttgttgaagttcgttttttttgttttcttcttttttaaacattcatagctggtcttatttgtaaagctcactttac ttagaattagtggcacttgcttttattagagaatgatttcaaatgctgtaactttctgaaataacatggccttggagggc atgaagacagatactcctccaaggttattggacaccggaaacaataaattggaacacctcctcaaacctaccactcagga ggaacaggaaactgatcattaaagcctgagtitgctitcctacctccaaccatgggccttttgggaatacttttgtttttt aatcttcctggggaaaacctggggacaggagcaaacatatgtcatttcagcaccaaaaatattccgtgtttggagcatctg aaaatattgtgattcaagtttatggatacactgaagcatttgatgcaacaatctctattaaaagttatcctgataaaaaa tttagttactcctcaggccatgttcatttatcctcagagaataaattccaaaactctgcaatcttaacaatacaaccaaa 60 agagtttattcgttgaatgacgacttgaagccagccaaaagagaaactgtcttaaccttcatagatcctgaaggatcagaagttgacatggtagaagaaattgatcatattggaattatctctttcctgacttcaagattccgtctaatcctagatatg 65 gtatgtggacgatcaaggctaaatataaagaggacttttcaacaactggaaccgcatattttgaagttaaagaatatgtc ttgccacatttttctgtctcaatcgagccagaatataatttcattggttacaagaactttaagaattttgaaattactat aaaagcaagatatttttataataaagtagtcactgaggctgacgtttatatcacatttggaataagagaagacttaaaag atgatcaaaaagaaatgatgcaaacagcaatgcaaaacacaatgttgataaatggaattgctcaagtcacattttgattct gaaacagcagtcaaagaactgtcatactacagtttagaagatttaaacaacaagtacctttatattgctgtaacagtcat 70 agagtctacaggtggattttctgaagaggcagaaatacctggcatcaaatatgtcctctcccctacaaactgaatttgg ttgctactcctcttttcctgaagcctgggattccatatcccatcaaggtgcaggttaaagattcgcttgaccagttggta ggaggagtcccagtaatactgaatgcacaaacaattgatgtaaaccaagagacatctgacttggatccaagcaaaagtgt <u>aacacgtgttgatgatggagtagetteetttgtgettaateteecatetggagtgacggtgetggagtttaatgteaaaa</u> ctgatgctccagatcttccagaagaaaatcaggccagggaaggttaccgagcaatagcatactcatctctcagccaaagt tacctttatattgattggactgataaccataaggctttgctagtgggagaacatctgaatattattgttacccccaaaag cccatatattgacaaaataactcactataattacttgatttatccaagggcaaaattatccattttggcacgagggaga aattttcagatgcatcttatcaaagtataaacattccagtaacacagaacatggttccttcatcccgacttctggtctat tatatcgtcacaggagaacagacagcagaattagtgtctgattcagtctggttaaatattgaagaaaaatgtggcaaccagctccaggttcatctgtctcctgatgcagatgcatattctccaggccaaactgtgtctcttaatatggcaactggaatgg

gaacgctgcaaaagaagatagaagaaatagctgctaaatataaacattcagtagtgaagaaatgttgttacgatggagcc tgcgttaataatgatgaaacctgtgagcagcgggctgcacggattagtttagggccaagatgcatcaaagctttcactga atgttgtgtcgtcgcaagccagctccgtgctaatatctctcataaagacatgcaattggaaaggctacacatgaagaccc tgttaccagtaagcaagccagaaattcggagttattttccagaaagctggttgtgggaagttcatcttgttcccagaaga aaacagttgcagtttgccctacctgattctctaaccacctgggaaattcaaggcattggcatttcaaacactggtatatg tgttgctgatactgtcaaggcaaaggtgttcaaagatgtcttcctggaaatgaatataccatattctgtttgtacgaggag aacagatccaattgaaaggaactgtttacaactataggacttctgggatgcagttctgtgttaaaatgtctgctgtggag ggaatctgcacttcggaaagcccagtcattgatcatcagggcacaaagtcctccaaatgtgtgcgccagaaagtagaggg ctcctccagtcacttggtgacattcactgtgcttcctctggaaattggccttcacaacatcaatttttcactggagactt 10 ggtttggaaaagaaatcttagtaaaaacattacgagtggtgccagaaggtgtcaaaaagggaaagctattctggtgttact ttggatcctaggggtatttatggtaccattagcagacgaaaggagttcccatacaggatacccttagatttggtccccaa aacagaaatcaaaaggattttgagtgtaaaaggactgctgtaggtgagatcttgtctgcagttctaagtcaggaaggca tcaatatcctaacccacctccccaaagggagtgcagaggcggagctgatgagcgttgtcccagtattctatgtttttcac tacctggaaacaggaaatcattggaacatttttcattctgacccattaattgaaaagcagaaactgaagaaaaattaaa agaagggatgttgagcattatgtectacagaaatgctgactactcttacagtgtgtggaagggtggaagtgctagcactt ttattgtggctagttgagaattatcaattagataatggatctttcaaggaaaattcacagtatcaaccaataaaattaca gggtaccttgcctgttgaagcccgagagaacagcttatatcttacagcctttactgtgattggaattagaaaggctttcg atatatgececetggtgaaaategacacagetetaattaaagetgacaactttetgettgaaaatacaetgecageceag 20 agcacctttacattggccatttctgcgtatgctctttccctgggagataaaactcacccacagtttcgttcaattgtttc agctttqaaqaqaqaagctttggttaaaqgtaatccacccatttatcgtttttggaaaqacaatcttcagcataaagaca gctctgtacctaacactggtacggcacgtatggtagaaacaactgcctatgctttactcaccagtctgaacttgaaagat ataaattatgttaacccagtcatcaaatggctatcagaagagcagaggtatggaggtggcttttattcaacccaggacac catcaatgccattgagggcctgacggaatattcactcctggttaaacaactccgcttgagtatggacatcgatgtttctt 25 gatgacctcattgtcagtacaggatttggcagtggcttggctacagtacatgtaacaactgtagttcacaaaaccagtac ctctgaggaagtttgcagcttttatttgaaaatcgatactcaggatattgaagcatcccactacagaggctacggaaact ctgattacaaacgcatagtagcatgtgccagctacaagcccagcagggaagaatcatcatctggatcctctcatgggtg atggacateteettgeetaetggaateagtgeaaatgaagaettaaaageeettgtggaagggtggateaaetatt 30 ${\tt cactgattaccaaatcaaagatggacatgttattctgcaactgaattcgattccctccagtgatttcctttgtgtacgatgattccctccagtgatttcctttgtgtacgatgattccctccagtgatttcctttgtgtacgatgattccctccagtgatttcctttgtgtacgatgattccctccagtgatttcccttccagtgattccctccagtgatttccctttgtgtacgattccctccagtgatttcccttccagtgattcccttccagtgattccctccagtgatttcccttccagtgattcccttcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttcccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgattcccttccagtgatt$ tccggatatttgaactctttgaagttgggtttctcagtcctgccactttcacagtttacgaataccacagaccagataaa cagtgtaccatgttttatagcacttccaatatcaaaattcagaaagtctgtgaaggagccgcgtgcaagtgtgtagaagc ttgcatatgcttataaagttagcatcacatccatcatgtagaaaatgtttttgtcaagtacaaggcaacccttctggat 35 atctacaaaactggggaagctgttgctgagaaagactctgagattaccttcattaaaaaggtaacctgtactaacgctga gctggtaaaaggaagacagtacttaattatgggtaaagaagccctccagataaaatacaatttcagtttcaggtacatct accetttagatteettgacetggattgaatactggeetagagacacaacatgtteategtgteaageatttttagetaat ttagatgaatttgccgaagatatctttttaaatggatgctaaaattcctgaagttcagctgcatacagtttgcacttatg gactcctgttgttgaagttcgtttttttgttttcttctttttttaaacattcataqctggtcttatttgtaaagctcact 40 ttacttagaattagtggcacttgcttttattagagaatgatttcaaatgctgtaactttctgaaataacatggccttgga gggcatgaagacagatactcctccaaggttattggacaccggaaacaataaattggaacacctcctcaaacctaccactc ccaaggaacaggaaactgatcattaaagcctgagtttgctttcctacctccaaccatgggccttttgggaatactttgtt ttttaatctteetggggaaaacctggggacaggagcaaacatatgteattteagcaccaaaaatatteegtgttggagca 45 tctgaaaatattgtgattcaagtttatggatacactgaagcatttgatgcaacaatctctattaaaagttatcctgataa aaaatttagttactcctcaggccatgttcatttatcctcagagaataaattccaaaactctgcaatcttaacaatacaac caaaacaattgcctggaggacaaaacccagtttcttatgtgtatttggaagttgtatcaaagcatttttcaaaatcaaaa agaatgccaataacctatgacaatggatttetetteatteatacagacaaacctgtttataetecagaccagteagtaaa 50 cagaagttgacatggtagaagaaattgatcatattggaattatctcttttcctgacttcaagattccgtctaatcctaga tatggtatgtggacgatcaaggctaaatataaagaggacttttcaacaactggaaccgcatattttgaagttaaagaata tgtettgccacatttttctgtctcaatcgagccagaatataatttcattggttacaagaactttaagaattttgaaatta ctataaaagcaagatatttttataataaagtagtcactgaggctgacgtttatatcacatttggaataagagaagactta aaagatgatcaaaaagaaatgatgcaaacagcaatgcaaaacacaatgttgataaatggaattgctcaagtcacatttga ttctgaaacagcagtcaaagaactgtcatactacagtttagaagatttaaacaacaagtacctttatattgctgtaacag tcatagagtctacaggtggattttctgaagaggcagaaatacctggcatcaaatatgtcctctcccctacaaactgaat ttggttgctactcctttttcctgaagcctgggattccatatcccatcaaggtgcaggttaaagattcgcttgaccagtt ggtaggaggagtcccagtaatactgaatgcacaaacaattgatgtaaaccaagagacatctgacttggatccaagcaaaa gtgtaacacgtgttgatgatggagtagcttcctttgtgcttaatctcccatctggagtgacggtgctggagtttaatgtc 60 aaaactgatgccccagatcttccagaagaaaatcaggccagggaaggttaccgagcaatagcatactcatctctcagcca gagaaattttcagatgcatcttatcaaagtataaacattccagtaacacagaacatggttccttcatcccgacttctggt ctattatatcgtcacaggagaacagacagcagaattagtgtctgattcagtctggttaaatattgaagaaaaatgtggca 65 accagetecageteateteteteeteeteatgeagatgeatatteteeaggeeaaaetgtgtetettaatatggeaaetgga atggattcctgggtggcattagcagcagtggacagtgctgtgtatggagtccaaagaggagccaaaaagcccttggaaag agtatttcaattettagagaagagtgatetgggetgtggggcaggtggtggcetcaacaatgccaatgtgttccacctag ctggacttaccttcctcactaatgcaaatgcagatgactcccaagaaaatgatgaccttgtaaagaaattctcaggcca agaagaacgctgcaaaagaagatagaagaaatagctgctaaatataaacattcagtagtgaagaaatgttgttacgatgg 70 agcctgcgttaataatgatgaaaacctgtgagcagcgggctgcacggattagtttagggccaagatgcatcaaagctttca ctgaatgttgtgtcgtcgcaagccagctccgtgctaatatctctcataaagacatgcaattgggaaggctacacatgaag accetgttaccagtaagcaagccagaaatteggagttattttccagaaagctggttgtgggaagttcatettgttcccag aagaaaacagttgcagtttgccctacctgattctctaaccacctgggaaattcaaggcattggcatttcaaacactggta tatgtgttgctgatactgtcaaggcaaaggtgttcaaagatgtcttcctggaaatgaatataccatattctgttgtacga ggagaacagatccaattgaaaggaactgtttacaactataggacttctgggatgcagttctgtgttaaaatgtctgctgt ggagggaatctgcacttcggaaagcccagtcattgatcatcagggcacaaagtcctccaaatgtgtgcgccagaaagtag agggctcctccagtcacttggtgacattcactgtgcttcctctggaaattggccttcacaacatcaatttttcactggag acttggtttggaaaagaaatcttagtaaaaacattacgagtggtgccagaaggtgtcaaaagggaaagctattctggtgt tactitggatcctaggggtatttatggtaccattagcagacgaaaggagttcccatacaggatacccttagatttggtcc 80 ccaaaacagaaatcaaaaggattttgagtgtaaaaggactgcttgtaggtgagatcttgtctgcagttctaagtcaggaa

taaaagaagggatgttgagcattatgtcctacagaaatgctgactactcttacagtgtgtggaagggtggaagtgctagcacttggttaacagettttgetttaagagtaettggacaagtaaataaatacgtagagcagaaccaaaattcaatttgtaa ttctttattgtggctagttgagaattatcaattagataatggatctttcaaggaaaattcaccagtatcaaccaataaaat tacagggtaccttgcctgttgaagcccgagagaacagcttatatcttacagcctttactgtgattggaattagaaaggct ttcgatatatgcccctggtgaaaatcgacacagctctaattaaagctgacaactttctgcttgaaaatacactgccagc ccagagcacctttacattggccatttctgcgtatgctctttccctgggagataaaactcaccacagtttcgttcaattg tttcagctttgaagagagaagctttggttaaaggtaatccacccatttatcgtttttggaaagacaatcttcagcataaa gacagetetgtacetaacaetggtacggcacgtatggtagaaacaaetgcetatgetttactcaccagtetgaaettgaa agatataaattatgttaacccagtcatcaaatggctatcagaagagcagaggtatggaggtggcttttattcaacccagg acaccatcaatgccattgagggcctgacggaatattcactcctggttaaacaactccgcttgagtatggacatcgatgtt aactotgattacaaacgcatagtagcatgtgccagctacaagcccagcagggaagaatcatcatctggatcctctcatgc
ggtgatggacatctccttgcctactggaatcagtgcaaatgaagaagacttaaaagcccttgtggaaggggtggatcaac
tattcactgattaccaaatcaaagatggacatgttattctgcaactgaattcgattccctccagtgatttcctttgtgta cgattccggatatttgaactctttgaagttgggtttctcagtcctgccactttcacagtttacgaataccacagaccagataacaacagtgtaccacatttcaacagttttacgaataccacagttgaacagtgtacacatgtgtgtag aagetgattgtgggcaaatgcaggaagaattggatetgacaatetetgcagagacaagaaaacaaacagcatgtaaacca 20 gagattgcatatgcttataaagttagcatcacatccatcactgtagaaaatgtttttgtcaagtacaaggcaacccttct ggatatctacaaaactggggaagctgttgctgagaaagactctgagattaccttcattaaaaaggtaacctgtactaacg Ctgagctggtaaaaggaagacagtacttaattatgggtaaagaagccctccagataaaatacaatttcagtttcaggtac atctaccctttagattccttgacctggattgaatactggcctagagacacaacatgttcatcgtgtcaagcatttttagc taatttagatgaatttgccgaagatatctttttaaatggatgctaaaattcctgaagttcagctgcatacagtttgcact 25 cactttacttagaattagtggcacttgcttttattagagaatgatttcaaatgctgtaactttctgaaataacatggcct tggagggcatgaagacagatactcctccaaggttattggacaccggaaacaataaattggaacacctcctcaaacctacc 30 aagcttcagtatgcaaattttcaatgacatgtgcctgtggattctgaaaattcacagatctgtctatccttagctgagac tgaaggcatctacttcccaatgaccaaatcctggtgctgtggcgacactgagcaggaactccattagaatatcaatatca ctctgcagacattccatgatgtaagctatgttttctcttgttgcaattacacttaatttaccaccagctgcttcaatgtc atgggctatcttgaaaaatgaagctcctttcgtagtcaaactggatgcaagacacagcaaatgagaagttactaaattgt tggagtcctcatagctactgcctgctttaatgaacaaaccaattcttgatgcagggcatagttttccaaaggagaaatca taaaaccatttggaaatttggatgatctcaaggtcctgatgatgtggagccactcctatgggggtagctgtgtggctttaact 35 ttgggggcaactttgagggaataaagtctcaaaaagagggaataaagtctcaagattgttcgtgacccatagtaacttct
ggcttaaaggaccattcggcaagtttttaaatgtatttctataatttccatgtagttctttatatttctat ttaaaacctctattttagctcgtttcctttgacactgctctggcagggaaaggggtggcactgcctcattactgccaggt aggggtagaagtccattatccacttggtctccattgatacccaaagtggggagagggctcctgttactgctggtgagggtg 40 ggagteccccactaagtttctgctaatactgtcctggtggcttgctactattcccatgaagcctccactgatactacat tacttttgggtggtggcaaatgtcctgcctctccactagccctcctgctctaaaacaacccgagtagggagtgggaagga agctttgttactggtaggtgggagctgaagtccagacttgccacattgtcccactgatgctacagggaggaggaagcggg ccacattactgcctgatagggatgaaagcccagctccctacctggccttcgctgataccagcctgctacaggagtgaag agagatttgaaggeeteaatatageetgtegagggtggaagtettgeteeeaatgggeetttageageatgggtggtgt 45 ggggccatagetgtctctgtactgcttggctagagtggagtatttgaggtccaaaagttttctgtctttctagccctttg gttagaaagagcagacttttgttggaagtatttttttgtgtttacctgttgtatttccaggttcctagcttctccagcac agtctgggatgtgtgagacacagagaaaatccagtgatgttactaccgtatggtttcttgggtcccaacgtctctagcta atctgctccaccttttggagttttcttatttgttttagatcagggatttagtcatatttaataggagaaatattggaaaaa tacttctactctacttcctggaagttcctgtttattttttatgtccttttcctctggctagaccgtaagagacttacga aacaaacacttacacattctactaaactcaatgtccaaagtttgtgaacttcttgaatattgcttgttcatttccacccc ${\tt caacaacttcccag} {\tt tttactacacttgcccatccctag} {\tt tttgttgttgcttaatcccttggcctagtgccaccatact$ 55 atctaattagttaaataacagaatcacataaaaaaggacttgaataaatgtagcatcctaccatgttcctggatagaaagactgctatcgtaatcatactagttcctggatagaaagactgctatcgtaatcatccatgctatcatcatcatcatcatcatcatgtagataattataaactcaatgcaattcaacaggattttaaaaaactaga 60 agacagatagtcacaggaaactcatatattataggtgctttgcgtataatgaagatggtccttcaaatcagttgggaaa agatgggttattcaataaatggtgttgggtaaaattggttatacattggtgagaaataaagtgaaactcctactttgtat 65 agaatatttttattcctttgaaatagaaaaggtcttactaagcaaaacacagaagtaataaatgaataaatgaagacaaa cttgttaagcaaggtagattacaagaaaatatttacaacatttgacaggccacagattattatccagcctcatctgataa gaaaacttcaacataaagatatctgtttttttttttataaggttcctcaaagtgagccaatcacttcttaagctgaacaa 70 tgaaaaggtgccctttctcagaaaccacagttaccattcagctttgtgaccagaggtttgactgtaccctagtccctact ttgtcctaaggattttccaagataatatatttctgcatttgttttgcttttacttcactccaaattgaaatctatttgtg ggataagactaaagaaatgcttataggaaaattgatagcaccaaattcctatcttaaaaaatgaaaaaggtttcaaatca 75 atgacctcagcttttactttaagaaaatagaaaaagcaggataagctaaagccaaagtaaacagaagaaaggaaattata aagataagagcagaaatcaatgaatagaaaacaaaagaaaaaatcaaaccaaaccagctgattctttaagcagatctata aatatcactacagatcctacagatataaaaagtataagggcatactttgaataattttatgactataaattaggcaactt agataaaacaaatttettgaaagacacaaacaaccaaageteacetaaaataeteacaaattgaatagtettatagetat ጸበ tacaaaattgaggccaggcgcagtggctcaagcctttaatcccagcactttgggagggctaggaaggcggatcacgaggtcaggaggtttgagaccagcctgactaacatggtgaaaccctgtctctactaaaagtacaaaaattagccaggcttggtggt gcgtgcctgtaatcccatctactcaggagactgaggcaggagattgcttgaacctgggaggcaaagttgtggtgagccg

tatagttaaaagtetteecacaaageaaaetetagaeeeagatggetteaatggtaaattetaetggaeaateaaaeagg aaacagtaataatteteeacaatgtettteataaaattgatgeggaggagataeteteeaacteattetatgaaaetage attaccctgataccaaaatcatacagagacagtgtaggaaaacagatcagtatccttcatgaacataaatgaagtac 5 aatgcagtettatgcataaateagagetteattgttetacagataaggtaatgtaggattgttggttgcccetecaggte tgttaaattcacctccttccccagagagcatccttcttaaggacagggagcctcaatatgtcagtcctcacagcacctcc ctcagtcttcagcacttaccagctcatcaccaccaaccgataccacattggataatttcatgaattactttagagcaaatg attacagatgtaaaaagaaaagtgtgtgaaatagtatccttagtgctcacaaatacaatgatttcattgtttttaaaaat 10 aaaaaatgacaaatgtotaatgcttggtggtaatgctttattgaatgtgttatacactggttcctcattcctgaagtt agaaataataccttcctcttttcatttggttatgtttgctgaaacaaatcaaaggctgagattgaaacacacgctacttc agtgagetgeaggettetaggaaaggeaagatgeacatttaaagcagacagaagtaagagaattgacteettteeacttga ggacccatatggatttgaaatattatgacattggagctggagtggttggagtggacaacaacagtagtgttataggccatgga atgtcaaaagaacatggaaccctgttaaaatcattaaacatcaaaactctcccctctggtgatatggtttggctgtg 15 tccccatccaaatctcatcttgaactcccatgtgttgtgggaggcacccagtgggaggtaattgaatcatggggggaggtctttcccatgtgtttcccatgtgttttataaagtggtgtttataaaggggagcttccctgcacaag ctctcttctcttgtctgccaccatgtgagacatgcctttcaccttccgccatgattgtgaggcctccccaaccatgtgga 20 actittaagttcattaaacctcttccttttgtaaattgctcagtctcaaatatgtctttatcagcaacgtgaaaacagac caagcatccatgaatcagaaaagtcctatcttctcttagttatcatccaggactccaaggaaccataattagccaacctg ttcacatttccttttcattcactagcctcgaagtttccaggggacagggactctgtcctattcatttctgtaaccttacc 25 acctgacccagaatagctgttccctgaagatttggtggattataaatgtggatgtcttatttctttgaaagtgtgagctt caggiactgaicacgitaliccaattatcaattlagiatctttcttcaccattaaactgigaaattcttgagggaagaac ctatgactgatttatctctgtaaactcatgccaccagtattcaaaatcacctagcacatagtaaacactcaatgtttg ttgaatgactgaaggaatggatgaaaatgaacctccttgcttctgaccagtggatgagttgcttggccgtgttcctacag cctagagctcatcccctaaagcatctgaagttacccattagtgcaatggttcttgaacgctggtgttgatcagaatcatc 30 tggatgcccaggttctctgaaataagatagggtctaggcatttgtatttttaccaaggaggtgtgatggagtcagatgca agaaggctagttgaagaaaccacatgagagtttagtgtagtgtattagaagactggtttggctctgtcgctagtggctac ccagaaagatcccttccagctctacccacttacaacatggtcaaattttggtctgattttttaaatcgtagtacaatatat atgacataaaattcaccattttagccactttaaatgtacaattctgtagcattaactacattcacattgttgtgcaacca 35 ggaatcacagcatttgccctattatgactggtttagttgacttgcatacacctcctaaggctcaaccacttttagcatag
tgtcagaattttctttgtttttaaggctgaataatattctgttgtatctgtaaataacatctttattcatttgtccatca
acagactgttgagttcctcccatcttttgactattgtgaaaaatgctgctatgaacctgagtgtacagacatctggttga 40 gtactgctttcaattcattgtttatatggatcatatggtaattttatgtttaatttttttggaactgctacattgttttc cacagtgtacatcattttacatttccatcagcaatgcacaaaggttccaatttctccacattcttaccaacattttttat tttctgtttcttatttatttgtttatttattctgagacagagtctcactctgtcacctaggctggagtgcagcagggtga tctcagctcactgcaacctctgcctcccatgttcaagtgattctcctcctcagcctcccaagtaaatggaattacaggt gcccaccaccacgcccaggtaattttttgcatttttttagtagtgatgaggtttcaccatgttggtcaggctggtcttga 45 actectgaeeteaagtgatecaeeegeeteageeteeeaaagtgetgggattaeaggtatgaaceaetgeaeeeaggeea ttttttgctttttagataatagtcatcctagtgggtatgaagtggtätttcattgtggttttgatttatatttccctaat gatcagtgatattgagcatctttcaagtgcttattggccattttcttctttggagaaatgtctatgcaagtcctttgctc attttttaatccagttgctttttgttattctttttgatttgaaagtgttctttatacctcttgtatactaatcccttatc agatatgatttataaatatttteettetteeatggattgeeettttaetetgttgatagtgttetttgatacaaaata 50 atttttaatttgaatgaagcccaattaatctattttgtttcttttgttgcctgtgcttttggtgcctatcccaagaaac gctatttttatttattttttctgtttcttgagctacttttgtagttttcagtgtataagtttttgctacctggttaggt 60 atacttctaagtattttctactttttgatgctattgcacattgaatcgttttcttaatttggtggtagcggggattgtgc attgttagtacataaaaatgcaactcatttttgtgtgttgattttgtatcctgcagctttaacaaattcatgttagttc taacagacttattctatgaatcattagggttttctacataaaagatcatgtcacctacaaacagagataattttactcca ccccttcccgttgcaatgccttttatgtctttttcttgcctaattgttctggctaagacttccactaccatgttgaatag aagtggtgaaagtagacatccttgtcttgttccaatcttagagccaaagctttcagtctttcacggcctgaaagactttg 65 taatatgiteteaaggttaaagaaetteagaagttttetaageaagagaeeattttattaaettagttggeageaattet gagagattagaatgaaaagatagaggataagaagtatctggcaggtataatatttgagtgtgctgaatatacttttagt tttgtataggtgttaaaaaatggcaaaggaggcogggcgtggtggctcacgcctgtaatcccagcactttgggaggccga ggcgggcagatcatgaggtcaggagatcgagaccatcctggctaaaacagtgaaaccctatctctactaaaaatacaaaa aactogctgggcatggtggtggacacctgtagtcccagctactcgggaggctgaggcaggagaatggtgtgaacctggaa 70 ggtggagcttgcagtgagccgagatcacgccactgcactccagcctgggcgacagagagactccgtctcaaaagaaaa aaaaaatggcaaaggaaagaatgaaaaataaagcaaggtcccagaagagccaaaaatcttaatcaaaattgactgaaca ttacggaatgaaatggtttttcctttactccaattaacgacttcacaagaagattccatcctcgtttataagattaaccc aaaaccagcacttaaaaccagaagccttgaaaggatggagtttggggacccttctcatgtctattcccagaagggggtct tettetggggteetgteecetaaagagetaggeaaaaagtatgettgeeacatetgttgaaagatagaaagttggtetaa aaatacatgagagggaactgaaacatttcagagaaggcaagactcagaagtaagaaccaaaagaggaaggtaaaattct agttacaaagaaaagaggaatggaaattaaattgtcttacagagaaaatccagaactgccccctcttcccttactactcc atcaaaaaaggggaaaaatagtcaatgggaaagttttgagaaaaatagatctctgcattcttctggttgagaattcagacaacttgaactagagagctgggtaatttcttgactaaaggtgtgttagatctgaaagggtttttcttaaaattgtctgtgt teateceteceatettagagaggaacacaggattaagagaetettggagetteececagggteacegagetaataggatca agacaaagetacaaagteattteetgacatetetecagggetettttttetggacececcatateaacatgatgattt attacattggattagcaactctccttgagctttcctcagtaccaggtttacatctcagtctgtgggtctcagagaaagta cccaatcagcagcaacattacctggaaactcatcagaagtgccctcctcagccccaccccagatctatgcaatcagaaa

ctctggaaatgcaggccagtcctaacaagcccaccagggaattctggtgcactaaggtttgagatccactgatcaaagaa ataatatteetttetteattataatageatgaataataactaacatgtattteacaatttacaaaagagetttatgete ttgttaaatttgagggtagtcttctcaaaatctctgtgaggctagaaagtcagatattgaaacacctgttttatgggttc aaagataggttcaaaagagagtaaatgattgttggggtggcaggtccagagagggcaggatcaaaactgcaattgagtct tetgeettataaaccagcatagetteeccaaggcacgtcacttetegataaaatggtgacaactagagtgteettteaga tcattcttagaagcatggagtgctaggtcaattgtgtaattgatgaggaaataataatactaagaactcccatcttctac gtccttatatacaatcctgtcaggtagaagctgagtctcagagagaacaagttgccctcccaggaccaccaggtaagctc atccagatcacagagggcagcactgactcctacccagtgctcttgactgtacatctaatactttctactaagaaaaccc 10 cttctctttagaccaatggttttcaaatcttggtgtgcattggaatcacctggaaagcttgttaaaacacagattgtccc accccaagagtttctgattctgtaggctggggtggggacccatgaaagtgcatttctaataaggtcccaagtgatgctga tgccaccagtgtgtgtggacaaccetttgagtggtgaagetetggacaccetaatttgcaaggetaatcaggcatatgtggc aaatgaatacgaactgaaattetgactccaatatetteactgatattectaatecatagcatacacacagteccattegt ttcccttttagcttttaatctacatttatcctttcttcctctgccactgccttctctccagttagctcaaaccaggtaac 15 acataaccgcctcctaactcatccgcccagttggtttctttggctttaatctagacttcttatctccaccagatttgcct ${\tt taccaaagcaccaatttcttaaggcagggtagaattaaaaatcttctgttcctcctcattgcctaaaactcctaaactt}$ atgattcaaggtcttccatgaccttcatggaccagtctaacgttttagcctgtcctaagtgacatgcctccaccacatac ttcatgetttccaetttcttctccatgtctttgttcatgcatttccatttcttctacctgcgatgtcctccttcgccat ctctgtagatttaaaaatcctacagggctcatctcaaatgccctttccttcatgaagcctttcatgaaatccccatcgag 20 aggttttccctctctcagctctccaaagcacagatgtctgcgtttgtgggctattatcttacgttgttttgtattaaaatttctccagctttacacatttgtcatcctcttaaggacaaacatcttattatggtcaatgtgaagctatagaggataatttaatgaaatattccaagggctagtcattacacatgactgattatctctgtaaactcatccacactcatccacctgatttt 25 ctgctctgggaacactgaccttcttttagttctttgaacacattgatttctggtcaagatgactcagtaacttcaacctt 30 tgttgtgcccttggtgctgtgaagatatagatatatattaaccactgcacaccagaaatcagaaatagcacaacagagaa taaagtcattgagccatcttctgagctccaaaagacaaattttctccaaaaagacaaattcaggctctaaaacaatacct taaggaaccagaagtggaatagaaaattaaggtggtaagcagggctaaaccacatgcctgttgagcccaggtttggaaga agacaatggcaggtaggaatgtggtttctgatgggtaataggtactgttttcatttactttctgttgcttataacagaat atctgaaactgggtgctttataaagaaaaggaatttatgtcttgcagttagggaaactgagaagtcaaaagttgagggct 35 gcaattgacaagtgcettettgctggtggggatactetgaagagtettgaggtggtategggcataccactetcagtgag gggactgagcatactaggtcaggtctttcttcctccttcttataaagctatcagtcccactcttatgataacccattaatc aaagactccacctctcaatactgccacatgggggattaaatttcagcatgagtttttgatgagacaaatattccaatgat agcagttattaaaagtacatgcttgagagaagggattggagtcagcctcagtgcttaaactcaaaagctaggatgaggc tctaacactcctgaaagaaggagttgctgctggctccttaccagggctatatcttttacagagcaggagacctaaagagg caggaggacccggacatcgtttggaaaccaagcactaaaacaggccatctgttatacccccaatatcctctcaggacaag gttaggtggttcttgcattgctatagagaaatacctgagattgggtaatttataaagaaaagaagtttaattggctcata attetgcaggcttcacaggaagcatggtgctggcatctgctcagcttctggagagggccccaagaagatttgctcaaggca gaaggttaagggagagctggcacatcacatggtgagaaaggaagctagaggagagagggcaaggtgcaggtgaggtgcacaagtta ccacagccagatctcttgagaactcacttactttcatgaggacagcacaagccataaggtgtagggagccaaagtccca tgggacatgaccaactcagcattccactggaggctatatgatcaaacagcaaactgtttatcacgaatgcaggatgtgag caaactcacaactggtcctgccaacagaaggtttgttggaggcaatcactccctggtgcctgaggtaatctactgcaaca 50 tctagagaatgcagtcttgcaagcctactctggacagggcagctggcaccttattccatccccttctcactatcttttt ttgcctaataaatacagaggctgtgtaaagctcagggcccttgtccactagaggcaagttgccccctgaccccttcttc caaatatactcttttgtctcttgtcttttattctcacatttgccccctttgttcagttccactaggtccgtgcgggttat atactggtgccctgagcagcaacagaatcaggctctcaacaagtgtcatccgaacatgggactttgaggacatgaacgaa gaaggtctgctggagcagaggaacagaaattgacaaggtgaacagggaccctgggacgagtctgccagcagcggatataa 55 ggtcagttacctaaagaggtactgatcagtgcctaaagagatactgggagcagtgctttaaagaagtactgggaatggg aaattttctgaatcagggtaacaaggggaagaatttgtctattaaagaaaaacattatgtgcagttgcttaaagttgtat ttgtgtgggcaataaagctttttaatcaccttggtgcaggtgggctgagtccaaaaaaggagtcagcaaagggagataga ggtggggcagttttataggatttgggtaggtagtggaaagttacagttaaaagtggttatctcttgtgggcagagggcagg ggtcacaaggtgctgggtggggaaatcatgagactctttttctgggacaggagtgtcacaaggtcaattgatcagttggg 60 65 tatacagagtcctccttttttagcagtgagtaagttgagacctattcctgtcttcttatattaataagtaaaataaagca 70 aaatagaggtgaagtgttggtgtcatgaggggaacaggaagcagttcggtcctatttgcaaattgattttgggggggtaa agaaaactagtgtacctttgcctgtccaattaataagtagacacatgtagatggaggagccacagaggaagaagagaact ttgtaaggcaaaactggaaatgtaaagggaaaagatgagagggagcaccaaaagaggtgtcttgcacccagactcaggg ggtgtatgagaaagcgcatagtgtctacaagcaacctttcattgctattcataggattgggtataagtaaacaagaaggg 75 ggggctaggaggagagtctgaagaacaaggggaaggtagccaaggatggagtgaaatgtagggcaaatgtcttaaaggaa atgagaggttctaagaggagggctagtggcttgtaacccacatggaagaggttacgaaaggatgatagaatggaatgagc ctgtgaggctggaaggaggaattttccttggtccaagaaccatttgccttgtgtgggaagagtttgataggtggaagttt cagtgggagggtaggcgggagtgactgatgagaaggagaaaactggccataagggacagaagttggaatgctagctgctcctttagctaccttatcagcataagctttgccctgagtgatgggatctgatgccttttgatggcgcttgcagtgaatgac 80 cctagcttccttggaagtagagcagctttaagaagagtttttatgaagaaggcattaataatggaggaccctcgtatagt

actgccatcaataaaccaagtgtgatcagagtgaggaacaggaaagaaggaaatatgggaaaatggagtgaatgctaggt ggalcagagagatacagtcatggggalcaggtgtggtatcaggaataatgtgggaggccagattgaagtccaggccagga acaatggtaattgtgggagactcaacaaagagtgagttcaactgaaggagccgggggagggggagagcggcagaaagtat tgtttagacagaaaggctgcagggcactgtccaagctcttgtgtaaggattctgaccgcacagccttgtactttggctgt gtgtaatgaaaagggttgggatgagttagggagagctagtgtgggagtagcttctagggctgtttttaaggaacataaag aggagtggggaaaggatttaggatctatggggtcagctaggtttccttttgtgagtttatgtaatggtttagtcaggatg 10 ggtttgggagattagccggacacagatcaggagggagagcacttgtatttttatgaagaattatgccgataggtaacgga tgaggaagaaatttggggttttggagggggatacacgatattcccttgagaatagatgttggaggagcaggagggtgtcct gttgggaagattcataggaggggctataaagtagaaggccatcaaaatattgaataaggtgacaagcagatggacagaaa agtaaattatgagaaagggcttgactgaagtaatggaggctgtccctgaagccttgtgggcagtacagcccaggtaagttg 15 ctgagactgatgggtgtcagggtcagtccaagtgtaagtgaagagaggctggggtgaagagtgcaaaggaatagtaaaga aagcatetteaagateeagaacagaataatgggttgtggagggaggtattgaggataggagagtatatgggtttggeace acagagtggataggcaagacaatttggttgataagctgaagatcctggacaggctttagtcccttcaaagcctgttgtgg gatgggatactggcattgagcaggataagggtaattaggttttaatgggatggtagggttgcgtgatcggtcaccaagga gggagtagaggtatcccatacttgtgggttaagatagggagtcaggaggggaggttgtgaaggaggctttgaactgggga 25 ttgaaggtgaggttaattaagtcctgttgtggggtttgagggccataatctaatttttgaagcttttttaatgttgggt tggattgggtaataaaatgcatattgagagtaagacagccttctggcccctctgaacctagggcagtaaaatgtctaaga 30 ggagaggtcagataaagtaaaggaacattaatcttgactatgccttcagctcttgccacctctctaagaggaaattgtt cagcgtaggggagtagaggctgaggaagaattgggacctggctcagcctggtgaggagtggcctggtgaggagcagcctg 35 gggaggaggagagagattagatgggttogtagaaaagaaggattcaaaggactcggagcttggtgaggagactgaaggaa cagacaggagagaaagaagaagatttgggacaagtcgcattgggagcagagactaggaagggagtgatgtgtaaagaat gcctggacatcaggcacctcagaccatttgcccattttatgacaaaaattatctaagtcttgtagggtggagaaatcaaa agtgccattttctggccatttggaacaattatcgagtttgtattggggccaaatggtgttgcagaagaaaataagatgct taggttttaggtcaggtgagagttgaagaggttttaggttttttagaacacaggctaaggcagaagaaggaggaatggag ggggtgggtcagttttataagatttgggtaggtagtggaaagtttacagttaaggtggtatctcttgagggcagaggtg ggggtcacaaggtgctgggtgggaaatcctgagacttatcatccagggaaggagtgtcacaaggtcgattgatcagttg 50 gggtggggcaggaacaaatcgcatggtggaatgtcatcagttaaggcaggaactcactatttcacttcttttgtggttct tcagtttcttcaggccatctggatgtacacgtgaaggttacggggatatatgatggcttagcttgggctcagaggcctga cactaaceteetgcagaageeacaaaaggttattacacataaaceatggttteeacaggcaggcactettgatgtggaaa attgggatagagcaggattaaaacaagctcatcaaaaaggtcttaaagttgattcttcagttttctccacttggagttta gttcatactgtacttctgccattatctccttattattctgcggaacagcaggctgaatctaaaaattggaaagaatttgt 55 tgtcctactcacagctccaattgaatataaaaaacaggagagggatgaaaaattggcctataccgcctcctccagatg cagaaacatetgtaccateteetteagtggcagaaatagagateecagtacaaagaattttatgetetgetgtcataget ggagagcccttaggaccttgtgcttttcctatttctgtaaggcctgatccaaataatccacagcagtttattcatgaaca ctctccactagaatttaagttgttgaaggaattaaaaactagtgtggtcaataatggagtacaaagccaatggttcctgg 65 agcgacaaagccaacaaggtctgcccaggacggcagcatccctctggcaaaggagcaaggagcagcacagacacaggcaaagcctaaacaagtacaatgtggccacctcccaggacctgcaccactgccctctggctctgtgggcagccacttgcaaaa 70 taatggccactattgtcatctctctctctctctgatgtagctttccaaattcaatttaagtaaacagtaacctttgaa gggaaagagattacagagggcccatgaattagttgaagagtaattaaaagctaggcatgtaaaaccacacattacgcttt 75 ccaaatctggccataaactggccccaaaacaggccataaacaaaatctctgcagcaccatgacatgtttgtgatggccat aggcattcccaaaccactaatgatagcatgagcaatctgtgccttaaggacatgttcctgctgcagacagctagccagag cccatecetttgttttggcccatecetttgttteecataaggaatgettteagttaatetatgatetatagaaaegatge

ctgttttcaagactgtttgccagattgaagtccataaacttggtcagcccgaaaactcaattacaagatctaagctattc tgcctgtggctttaagcacatggttaaagtatattatttaagtetetecttctagatatgctttcagattttettttaa acttettgttacttatttcagetttccatattgataattaatgcagtcaattgctcagttatgactgtgatatcatcagg atteetttaagtaaaaggeaatteaaageggtattgeaeteeceeatacetaatgetttaacaetgtttaetgatgggte tggtaaacatggaaaagctgcagtctagtagagaccacataattcaatcactcgatctgagttcactagcactcagagag ctaaggttactctgtttatttattaaagaatttttacaaccttaagctcactctggactttccagccttatgtggcaaat gtagccatcaatttatggggtcaagacttacttacagcatgggatatgaggcttacaaatgagactttgataacccagga ttttaaatgttgaagaacacgggatatcagagtgaaaaaggtttagggaaaattctgacaagggaaaattctaacctgat atcaataactggaaagacaggttaaaccctgcaaggggatacattgacatttttttcttcctcacttgctcttttctgctg tctgaatatgggcatgagggcaagagtcattttagaccaccaagtgaccttgaggatagaagccttatactagaggtggt gggaaagaaaaaacagaaggactcataaagaaaaaaataataaacctcagtattaagatggaaaaattccccccaattggt ctataggttgaacttcatctctattaaatttcagctatgtttttgcagaatttgatatgctgatcataaaatttatatga aaatgcaagagacacagaatagtcaaaactttgaaaagaagaagttggaggacttacacttgttgattttaaggctttt tacaaagctataataatcaagacaatgtgttactgacataatgatagacatattgatcaatatagacaatggatgaatgg aagaaattttgctgagacaactaagtatttatatgcaaaataatgagtttgaatggctaccatatacaaaaattaactca agacagagtettgetetgteaceeagaceagagtgeagtggeatgateteageteactgeaageteeaetteetgagtte 20 ggagtttcaccatgttagccaggatggtctcaatctcttgacctcgtgatctgcccacctcagcctcccaaagtgctggg attacaggcatgagccaccacgcctggcctaccattacttttaatggcaaaaatgcagttacttttgcaccaccctaata gaactaaatgtaagagctaaaactacaaaactgttagaagaaagcataggagcaaatcttaatgacatgagggttggcaa ttgttttttagatatgacaccaaaagcatcaaggacaaaagaaaaaatggataaattggacttcctccaaattaagaga 25 acttttgtcctgcaagcaatactattaagaaagtgaaaagacaagtcacaaatgggagaacatttttgcacataatata
tttaataataggctgacatccagaatacataaatacctacaactcaataccaaaaagacagcccaatttaaaaatgggc aaggatatgaataaacatttctctaaagaagatacaaaaatggtcaatatgcacatgaaaagatgctcaatatcaatatc tattaggaaaatacaaattaaaacacaaaatataaaacacaagatatcaatttacactcaccaggatggctgttatcaaa aagacagataacaagtattggcaaggatttggggaaattgtaaccttcatacattgctggtaggaatataaaatttgcag 30 caggtttggaaaacagtttagcagtttctcaaaaagcctgggcatggtggctcatgcctacaatcccagtgctttaggga gctgaggtgagaggattgcttgagcccaggagttggagaccagcctgagtaacacagtgagacctcttttctaccaaaaa gaagagagttaaacatagggtaccatataagccagcaatccatctcctagatatgtacccaagaaagttgaaaacatata ctgacacaaaaacttacatatgaatcttcatattagccttataataatagccaaaaagtagaaacaacccaaatacccat caactaattaaaatatggtgtatetatacatattatttggccataaaaggaagtaetgatacatgtcataacacaaatga 35 accttggaagcactatgatctctgtattagtcagctcttgtattgctataaagaactacctgagactgggtaacttataa agaaaaaaggettaattgagteacagtteeacaggetgeacagggateatggeecaggagaceteaggaaacaettatg cacatgagatttgggttgggggacactaatccaaacaatatcattctgccccagcccctcccaaatcctgtgtccttctcac attggaagatacaatcatcccttctcaacagtttcatttcagtattaactcaaaaatccaaagtctcatctgagacaaga tetteteatagetecagtagacagtgececagtggggaatetgtatggggetgeaaceceacatttetectetgtaetg cccaatagaggttetecatgagggetecattectgtagcatacttetacetggacatecaggtgtttteatacatectet aaaatctaggtaggggctcccaagccttaactcttgccctctgcacatccgcaggcttaataccacatggaaaccaccaa tgcttatggcttgcaccctatgaagcagtagtctgagacatatctgggcccttttggccatggctgggatgcagggaaca 50 gtgtcctgaagtggcacagggcagcggggccatgggcccatgaaaccttctttcctcctaggcctccagacctgt gatgggagggtctgcctcgacggtctctagaatgtgtttgaggcatattcctcattgtcttggctattaatatttggctc ctctttacttatgcaaatttctacagcctgattaattcctttccaaaaaaatggggttttcttttctactacatggtcag gtcacaaattttccaaacttttacgcttccctttgaaatgtaagttccagttgcaggtcatttctttgatcacaaatata agcatatatttgtagaatcagccaggccacatcttgaatgttttgctgcttagaaactgcttccaccagataccctaaat 55 cattgctatcaggttcaaaattctacatatctctagggcaagggcacaatgcctccaagacctttgctaatgcataagaa aattgacctttgctccagttcccaataagttccccatcttcatctgaggtctccttagcctggacttcattgtccatatc agtatcagcattttcatcacaataatttaactagtctctaagaagttccaaactttcccttatcttcctatcttcttctg agccctccaaactgctccaacctctgcccattacccgggttccaaagctgcttccacattttcggtatctttatagcaat gctccattcctgataccaattttctgtattagtctcttctcgcactcctgtaaagaactacctgagactgggtaatttat 60 aaagaaaagaggtttaattgactcacagttccacaagctgtataggaagcatggttcagaaggccacaggaaacttacaa aatcacctcctaccaggctcctcctccaacattggggattatgatttgacatgagatttgggtagggacacaactccaaa ccatatcaatcccatttatatgaaatgtccacaatagataaatctatagagacataaaatagattggtgcttgcctagtg 65 ctggacgtgacaggagggtgtgagtaaaagaggcaatggagtgataggtacagggtttcttttttggggtgatgaaaatat tataaaattagattgtggttatagttgtataactcttgaatatcctaaaaatatattgaattttccattttcaattttaaa tgggtgaatcttatggtatgtgaattatatctcaataaaactgcaaaaaatgcacaatttgcaattgcaaaaatatggaa 70 ctcataagtggaggataagctatgaggatgcaaaggcataagaatgatataatggagacttttgggaactcagggaaagggtgagaggatgaaggctacaccattgggtacagtgtacactgttcaagtgatggctgcaccaaaatctcagaa actgctgaaatcaatagtgaaaggatggactattcaataatgacacagttaattgaatatcatattttaaaaaattagatc 75 cttacctcacactataacataacaataaattccaggtgaattatagaccaaatatgaaaagcaaaattttaatattttag aagacaatttttatgaccttaagttagaaaatgatttttaaaaacaggatgcaaaaacactaatcataaagagatatttt aggccaagcatggtggctcacacctgtaatcctagtactttgggaagctgaggcaggtggatcacttgaggtcaggagtt caagacaagcctggccaatagggtgaaacatgtctctactaaaaaatacaaaaattagctggaaatcgctcgaacccagga aataaataaaaataaagagagattttaataaggtgcattaaaataaaaactatccatcaaagacaccatgaataaagtt tggagtgcagtggtgcaatctcggcttactgcaaacttcacctcccaggttcaagcaattctcctgcctcagcctcctga

gtagctgggattacaggtgtgtgccaccatgcctggctaattttttgtattttttgtagacacggggtttcaccatgttgg tcaggctgagctcaaacccctgacctcgtgatccaccttcctcagcctcccaaagtgctgggattacaggcatgagccac cgtgcctggcctaccatgaatatttttttaaaggtagcatccagaattaataatcttctccaacaaatttcattagtagt cagggaactgcaaattaaaatcaaagtaaaatactactttccactcattagactaaaatccattcaagtctgataatacc agtaaaagttagtgatacaccttccattttcatctgttctgtgctgctaccaaagaatacctgagactaggtaatttata aataatagaaatgtatttctaatggttctagaggctgagaagtccaagattgaagggccagcctctgcagagagccttct tgctgtgtcatgccatggcagaagggcaaagagggcaagagagcaaaagcaaattcacagcatcaatcccttttat aatcagcattactctattaatgagggcaagaccctcatggcctaatcacctctaaaaggtcacacctcttaatactattg caatggtaattaagtttetaatacatactttttgggagacattttcaaactatagcacctaccctatagcccaacatttc tactcctaggagtatgccctagagaaattctgcataaatatctaaagaggccattgttgcattgttaggtactggaaa attggaatcaattactatgtctaccagcagcagaagatggctttttaaaagttttggtttattcatgaaatggaatattgcataaagtatgctccatctcaccagatgaaaacatttttcactaggactatttcaaaagtagtcttatcactgggcttct ctattatgcataaaaattttaagtgaacatgttetttgacctagtactectacttttaggaatttgeccaaaagggacaa tgacagtggagagggaaagagagagaaagaaggagaatatgggagtgagagggtacacaaaggaaattttagttgcagc tccaaatttttactttttacacaatgaagcgaatatggcaaaataagatttgttaaagttgggcagcaggtacacagata ttctatcattatcctttgaatatttctgtagatttaagttgtccattaaaaaaataaaatacacacataatttttaagat 20 tagtttttttctatttcctggccttcgcatgcactgttaactttacctggaattctttatgcagtaattaagagcaaaggt gtagagcaagactgcttgagcttggatcccagcactgagttgatttagggagaataacttaatctcttaatcccaagaga aaalalgatataalagtitigagcicataaagtittcataagcattaaatgigacctatatatgtaaagcaatctaacag tgcctatagtatttataagtgtctgcattaccaaattcatcattatcatggcatgtcatgtcaccatccactacattacc atcactgtcaccatcatcatcatcaccaccaccatcatcattaactccctttgtctagtcaattcatatttgttcttcgt 25 attttagatacetgttaaaatattttttcaaagatgtetaetetgattetteagtacaaatttgatttaataagateeta gttctacagcaatacaggtatattagaaaaacctgcaaaggtggggaccagcttaatgccagagccccccactgcttata 30 gatgttgataagacgttcccatgatgaggcagtttggtccttgcttccatagagtgtgatgcttcttgcactttttccca gcagaatgtggtagggatgttccttcaggtgggcctttgcctggcagggtatgataaggatgttcctgtgccttggaatc aggtagttagacaggatgtttctcacagcctgaacccccatggaatgtttcactttgaccagggtctgcgaaatagcagg gggcttacaaaatggtgtagtttggactaacacettggaacacaaaagtttettggggccaaggetggcgtattagtetg ttttcatgctgctagtaaagacatacctgagactgggtaatttataaagaggaaaagaggtttaatggactcacaattcca catggctggaggcctcacaatcatgagggaggcaaaggaggagcaaaggcacgtcttacatggtggtaggcaagagaacgtgtggggaactgccctttataaaaccatcagatcttgtgatacttattcactatcaaaagaacagcacgggaaaaat 40 gatggggcagatagaagtaacctaaaatactaacatgttgtttttggggtcatgaaattataaatgattatgcacccctta tttagtggcatttattatattcacaatattgtacaaccactagetetaettecaaaacatttteateaetecaaaataaa 45 accttgtacccattaagcagttactccccattatttcctctcttagctcctagcaaccaccaacctgctttctgtctcta gggatttatttattetggatattecataaaaatggaggcacaatatgtacettttatgtetggettetttcaccaageat gtttttgaggctaatccacattgcagcatgtatcagtacttcatttctttttatgaataactgtatacagaccacaattt gttatocatittttggtttatggacatttigggttgittccatototoaactattgigaatagigctgctatgtatatttg tgtacaagaatttggttacctattttcaattctttatgtatatatctaagatgaaattgcagggttatatgctaatcct 50 atgtttagcattttttttttaggaaccattaaactgttttccaaatctgatgccccattttatattcctactagcaatgta agcaagttccaatttctccatatcctcaacaacacttgttattttctatttttgttatagccattctaatgagtgtaaag tetttteactttattgataatgteetttgatgeeeaaaagttgtttattttgatgaageatatttateaatttattett ttattgctcatgcttttgatgtcacctctaagaatttataaccaaatcagaggtaatgaaggtttacccctctattttctctctaagagtttatagttttgactcatttactaggtcgctgattcattttttatattttttgatcatattgatgtaggaa gaggtccaactttactcatttgcatgtggatattcagctgtgccagcaccatttgtgaagagtctatcatctcctcattt aataatagtattgacacctttgttgaaagtcaattgataataatgatgtatgagttatttctggaatctaaattctattcc attgatctacatgtctatccttgtatcagtatcacactatcttgattactgtagatttgtagtaagttttgaaactagaa agtgtgagtactgcaatattctttttaaaagattgtcagggcctcttgcaatttaatagggatatgaggat 60 tgttttgtagttttggggtacaagtctttcacctttaaattttggtgaaatttattcctaggtattgcatttttttatgc 65 tattgtaaataaaattatttctcaatttcctgttggatgttcattgcaggtgtatagaaactcaactgattctttgtgt tgatettatgetgagaccagetcagttggggagaccetaacetagaagcaetagaggaattaaagacacaaacacagaaa tatagaggtgtaaagtgggaaatcaggcgtctcacagccttcagagctgagagcttcaaacagagatttacccacatatt tattaacagcaagccagtcattagcattgtttctatagatattagattaactaaaagtatcccttatgggaaacgaaggg aagggctgaaataaagggatgggttgggctagttatctgcagcaggagcatgtccttaagtcatagatcactcatgctat 70 tgttgtggtttaagaatgcctttaagcggttttctgccctgtgtgggacaggtgttccttgccctcattccggtaagcc cacaaccttccagcgtggcattatggccatcatgaacatgtcacggtgctgcagcggtttttatggccagttttggggc cagtttatggccagattttggggggcctgttcccaacatcttataccttgcaattttgctgaattttgcttgttaacttt tcatttggatgccttttatttcctttccttgcctaatttccctggctagaacttccagtatgatgttgaataaccatggt gaaatgggcattcttgtctttttcctgatgttagagagaaatttttcagtctttaaccattgagtataatgttagctgtg

attttctatttcttcttgagtaactttttagcaatttatgtattttagaaatttgttcatttaatctaggttatttaatt tattggtgtgcattttttcatagtattatcttataatcttttaatttttgtaaagttgataatgtccccaccttacctga tettagttatttgtgtettetetgtattetttttgtettettettetgtettageatagetaaaggtttgteaactttgt tgatcttttaaagagtcaacttttgctttcagcatgcattactttttaaatagaaatatatacacctaagttgcattaca aaggagttgtcctccacacacttattctttcccaccatcagaggtttatggtccccgcaaaagtcaccatcagttgggct gttcaccaatcagaacctctgccacatcagctctgtgggtttcctctcatgccatctgtaccaacaatgagcacagtctg ggtttcctgatgttttctatagcatggtgcccctccctgggacacctcagaagccacaatgatattcattaaacttcttc ctgcaagtactccctctattgctccttctactcaccaagcttagtgtcagggaatatgctggtggggagtatgaatctta gcttctcactcccagactcggctcccaacctgctgttgccaagtcttggggacatctataaatgccttctaaatacctgt cttggcctatccccagccacagattcctccctagagcaggctacctctgaggcatctatactgagatcttaatcacagag cctggttcatctggagacaaagttgaacttagaagatggaggagaaattcttatctgccctctgctagttgacacttcct tctaaaggcactaactgaacaaatctattgcccattacttaggaaattgctaagggcatcgttaaagtacttcaggctgt gagtggcagagaggttctgagtacaactctaactttcagtttcaatggcctaatccccaactcaactgctgaccttgagt gtaaaaataaacaagatcttaaacatcttagggccagcattctgggtcttctttttgttatttggggagcataaactattc tcatatcattggcttgcagaaaaattgagcttctcctcttccttgccccatgtcaccttgaggtgaccacagccctgcct tctatgtaatcctgcttggtcagcaggcacatcagagctcagtggcttgtgacatactttccttcaagcctgctcgaagg gccatactcatcattgagactgggaaccttagaaaccatgaacccagtgccaatgggtagatacagaattctcaaactca tgaaaaaacatcctttttaactctctccgtgtgcataaagaattctaagatgtactgatcaagattcccaattttctaac ccacactcccccagatccactctgagtcccaggatgctgattttaggggctacattgcctagactgtccattattccctc 30 ttcccatctggttcagtcactgggaagcactggtaggaggtcagagtggggagaaggatggttaggatactttctgcccctg caagtggtattgtttattcttttgatccttctagctgttaaggaagaaaaaataattttttcctcaatgctcataagtt cttggaatggacccctgtaacaaaagacagattaacacgagaaaagtttattaacgtacatattttatacgtacatagga gctatccagggaatgaataattcttaaaaaggtgactttgaattccagctcatatagcatcttcaacaacgttcagtaac ttatgcaaaagaggtacattttagggtgtcaaattctggtctcccacaaagcatagggatgacagaccacctcaccatcc
ctgttgcttcttttaagcctgctcacccctccaaaaatattttcattctatactgtctctttaaactctcaggggggg 40 gccctctgttatcctgccctctgtgtcagtataagccaaaggtttgaatcctggctctgcaactatctacctctgtgcct ctccttgtttatgaaattacagggctggagacaaagatcacaatgtgaagacaaaattggagagcggtcctaatcagcca gagcaaaatttctggctcttgctcttccccatcctgggttgaatcataggaacaggtggcaagatgccagggtcaggaga ttccagaagtggcagcaagctcagtgttaccaggtcagggatgacctgtcttattattgaaatctcagagatatgctcca 45 attocogococagagacacattgagagacaactgoggaacttgctatgttcctgaacaggcaatgagctgtcttccaagaa aaaacctgagacccttcaagtctcaggtcttacttagcacatataccaggtcttacacaggacacatggttacaactgac caggagttcgagaccagcccgggcaacatgacaaaaccccatctctacaaaaaatagtcaggcatggtggcatgcacctg tagteteagetaettgggaggetgagatgagaggattgettgaggttgagaetgeagtgaageatgateatgeeacegea gccagaccctgctctagctgctttaggtccatttaccctcatagaccccagtcttgttattcatatttcatatttgga aatggaaacttagaaacttgcaagtccacagcatgagatcctgcctccggtgtctgctggttccagaaagtgccaggg gccaacttagatgacaccatgttctctgcacaatcttaggaatgctcctagtctgatgtccccattgcaaaatttacatt atcttttaacaaaacgtctttccaaggagggcatttaaaataactgaggttcttcttgctaaggacgttcctgacacaa gagataatttagcatttcctttcattaaaaagtttgaaatcctgtaatttgtgataatgtggatgaacctagaggatgt ttagccgggcatgatggcacacacctgtaatcctagctactcaggaggctgaggtggggaggatggcttgaactcagaagg 60 aaagttgctatcttagaaaaagacagtagagcagtggttaccagagactggggaggaaagaggaggaggtgagaaatgggca gcagttgatcaacgggtacaaagttaccatgagataggagaaacaagtgctggtgctctgctccaagtagggtgacggta gttaataatgaattotgtatatataaatagotagaagagggttttoaatatoattattatttoaaaagaaatgataaa tgtttcagaggatggatatgtaattaccctgatttgatcattgcacaatgtatacatgtagcaaaacatcacattgtgtc 65 tctgaatccatgataccactgaaaccagcacacatgatcgcagtaaaacctcattatacttcctccactatcaccaatac cctttattctctggaacatgaaacattctgttgttgtcatatcatgcaaattatcactagtaggagagcagagagtggaa atgttccaggtataaagacccacaagataaagaagctcagagtcgttagaaacaggagcagatgtacagggttttgcctga ctcacactcaaggttgcataagcaagatttcaaaattaatcctattctggagacctcaacccaatgtacaatgttcctga 70 tetgeaggāaaetttattteetaettetgeatgeeaagtttetaeetetagatetgtttggtteagttgetgagaageet gacataccaggactgcctgagacaagccacaagctggtgagttgtaggcattttttccattactttctgattcataggct caacgcacctcaaagctggaaatgccgggtctgggtacaccctggggaaCtgcaaagcctgcacacttgggggaaatgat caagatgagaggcaggggtggggatggcatgtgcaccaggagatgttagagaaaccctgaggaagagcagcagcagcag 75 gtgatggggagagtgggcagcaagcgaggccaggacagccactctgctcagtcaccagtccacacccaggggctcac tctgcccctctgagcacccaaggacgttaaagagctggaactgttagtctaaatataggaccatccaagctctgaaccaa tagaagctacatgctagccagttgtaaaaatgaaattaagtaatgtgtgcacagcatttaacatagcatctgagcttcaggagcactcaattaatgaccacagttgtgattctttaggcagatgcatttttttccaactttgatcagaggtcttatttag 80 cttctccagatttcaagaatctggctcagtgatatgaaatacaagacttgtgaaaagtgtcaattgcaagagaaatggaa ggataaagtatacaggtgggtggaaaagaaattcacagtcactgccagaaaaaaattcttgaagaatcaagtcctgatga

tgttagggettatagttettattataaagagttttatgtaeteatteagtgaaeatttattggtgeeteetttageeagg tactatcataagagctgaaaataaaagcataatccagtccttgatcttgaggaacatgctgtgtgtagcagataacataa taagtgettatetagatgeatgeagtgttatgtgataagagtaatatgacagaggatacagattaggetteacagagaag gagaagggactggaggtgaggctgagaagaggcaaaactcagaaaagatgttgtgctgggcagtctggacattatctttga agcccaccatataagtcatagggctactggaggttttaagctaaaagtgactattcaatttcaacttaagagaagata ggttgagagggaacatggcttgagatgagccatgagcaaaggaaagactacaacaaagccaggagtgaggagtgtgtgaa gcaagaaagtgacagttgaaagcagtgcagaggggatgaatctgagaggcatctatgaggtggaactcaaatgacatgat aataatacagggcatttctctgtgtcagatgctgtcctaagtccttactccattgatcttcacagcaactcagcatagtt 10 aatattttatgcataaagaaatcggcacttgaaggagtaattggccccagattacactgcctataaggattcaaatccag gtttgtttggctccaaaaactggctcctaattttcagcagtgccccatttggggtggctgaattttgaggtccctgcatgat acccactttgctcacttcagtgcctaaaactgagtatggttcatagtaggtgttcaataagtgttgatgatgcagtgaataca tgcatggggagatatgcatcaggcaatgggaaattcaactctaaggcttaggggaaagctggagcttgaagacagagctt tagaaaacagtagcatagaagggagtaggaaccatgagtttagacaatacaattcaggaagaactttgtagcaaggataa agaggcaaaaaattaaagaggtgagagctaagtgtggtgcctggggaatcttaaggtgtgggcacggggaggagatgcca gcaaagaacatgaataaaaagcggtagcacagccctcccatctggaagccaaaaagaattgtaaatggaggaagttagc agaaggatcaaatacttgaagagggtggaattggaataaaaccagggcatttgaaaaattgggttgtcactgcaatctta 20 acaagagaagttttggcaggatgatggaggcagaaagctgagagaatcatcagttagaacgtttttgacttcagagaaca gaaaatgcagttcataatggctttaaaacaggggcttgtttttccccagcaatttgagaggccaaggcgggtgcatcag gaggtcaagagaccgagaccatcctggccaacatggtgaatccccatctctactaaaaatacaaaaattagcggggcatg gtggtgcacgcctatagtcccatctactcaggaggctgaggcaggagaatcacttgaacccaggaggtggaggttgcagt 25 aaggtgaatagttcaagggtgggtttaggactcagtgataataggattctgcctggcttctcatggttctctaggtcttc cattcatggcaccatgccctcactaggcatgctgccagagcaggagggcaggtggagggttctcttgtgtctstat cagggaagaagagctttctcagaagcccccagcagactcccttttcatattatggtccagcaatgagtcacagacctatg caccacctgcaaaggagccagagaaaacaaacgcccagcgcttttagcctgaaaatgagaatctggtttgctggggaaga taaagggtgtcggaaaatggctgttgggtaaatcattgatgtctgccactaggaatgaaaggcaaatcaggaactggcac 30 tcatggattgcggtgtttgtgttgtgtggtcatcattttgttctttgtttcacagaacagagaaagtggattgaacaagga cgcatttccccagtacatccacaacatgctgtccacatctcgttctcggtttatcagaaataccaacgagagcggtgaag aagtcaccaccttttttgattatgattacggtgctccctgtcataaatttgacgtgaagcaaattggggcccaactcctg cctccgctctactcgctggtgttcatctttggttttgtgggcaacatgctggtcgtcctcatcttaataaactgcaaaaa gctgaagtgcttgactgacatttacctgctcaacctggccatctctgatctgctttttcttattactctcccattgtggg ctcactctgctgcaaatgagtgggtctttgggaatgcaatgtgcaaattattcacagggctgtatcacatcggttatttt ggcggaatettetteateateeteetgacaategatagatacetggetattgteeatgetgtgtgtetgetttaaaagceag ctaaatgccagaaagaagattctgtttatgtctgtggcccttattttccacgaggatggaataatttccacacaataatg 40 aggaacatttttggggctggtcctgccgctgctcatcatggtcatctgctactcgggaatcctgaaaaccctgcttcggtg tcgaaacgagaagaagaggcatagggcagtgagagtcatcttcaccatcatgattgtttactttctcttctggactccct ataacattgtcattctcctgaacaccttccaggaattcttcggcctgagtaactgtgaaagcaccagtcaactggaccaa gccacgcaggtgacagagactcttgggatgactcactgctgcatcaatcccatctattgccttcgttggggagaagtt cagaaggtatctctcggtgttcttccgaaagcacatcaccaagcgcttctgcaaacaatgtccagttttctacagggaga 45 cagtggatggatgacttcaacaacacgccttccactggggagcaggaagtctcggctggtttataaaacgaggagcag tttgattgttgtttataaagggagataacaatctgtatataacaacaaacttcaagggtttgttgaacaatagaaacctg taaagcaggtgcccaggaacctcagggctgtgtgtactaatacagactatgtcacccaatgcatatccaacatgtgctca gggaataatccagaaaaactgtgggtagagactttgactctccagaaagctcatctcagctcctgaaaaatgcctcatta ccttgtgctaatcctcttttctagtcttcataatttcttcacaatctctgattctgtcaatgtcttgaaatcaaggg $\verb|ccagctg|| aggtg|| agas | aggtg|| a$ aggaggagacatgagcatgagctggacataagatgatgagcaaaggtgagcaaagggctcacgcattcagccaggagatgat actggtccttagcccatctgccacgtgtatttaaccttgaagggttcaccaggtcagggagagtttgggaactgcaata acctgggagttttggtgggtccgatgattctcttttgcataagtgcatgacatatttttgctttattacagtttatca tggcacccatgcaccttacatttgaaatctatgaaatatcatgctccattgttcagatgcttcttaggccacatcccct 55 gacggggatcgtgtggaaccactgcagaactatttccggaatcaactaagtggagagaccaggaaggctgcatcagaac tettttecccacageettttteacatagetettggetgtaggattgccccactccaaaaaccagtgtgtggaggtecagg 60 agtgagaccaggaaagaatgtgaaagtgactacacaaggactcctcgatggtcgtggaaaaggaaagtcaattggcagag ccctgaagccagtcttcaggacaaagaaggagcctagagacagaaatgacagatctctgctttggaaatcacacgtctg gctgggttggaaaacagtattttccaaactacettccagttcctcatttttgaatacaggcatagagttcagactttttt 65 aaacgtgaaaatgctgtattagtcacagagataattctagctttgagcttaagaattttgagcaggtggtatgtttggga gcagcatctaagtaatgatgtcgtttgaatcacagtatacgctccatcgctgtcatctcagctggatctccattctctca ggcttgctgccaaaagccttttgtgttttgttttgtatcattatgaagtcatgcgtttaatcacattcgagtgtttcagt gcttcgcagatgtccttgatgctcatattgttccctattttgccagtgggaactcctaaatcaaattggcttctaatcaa agettttaaaceetattggtaaagaatggaaggtggagaageteeetgaagtaageaaagaettteetettagtegagee 75 cctgcccttgtggtgtgacttgcagtgcgccctacaggccacaaccccatgccctccaccactggctctgctgctgga atgtgagcagaagtgacatctgcctcatccaagcagagcctcttgctcagccacaggaaggcccattccagatcacaccc gtcagccgtgcgccctggtgaatgagaagacacagggagctgcagccacatataacatgagcaagaagtctgtgtttgc tgtgataagccactgagttttaggggttgtttgttaagaagcacaaaaaccgattaagacatgtggtatatagtgacttc ጸበ atatatagaatctggaaaactatCcatttattttcaatcatggaattcaatatgacaagcatcccggagggtctacctat gccagactgggttggaaacagaaagacagatgttaatgccagtgtcctttacacctccaagtccaqqgccagctgtggag tgggaggggtagagaaggtcctgtgcacagtcacagtgcgctgtgcagagcaggaacagaggcatctgtgaaaagtgctg

agagcctggaggacagagtgactaatgcaatgacagtcttgcatcataggaataacagccacagcaggattttattgctg ccaaagaaactgccatttaaaaattgccagccatccgggaggctgaggcaggagaatggcatgaatccaggaggcggagc ccagccatctctctttctaaagtggaatcctcaagtctcgtttattctggggacatttgagtaggctgttcgagttaagc 5 agoccaccocatgocacotocottgatotgtgatatococagoagotggggaggttggagoattttgcaaagaggococg aagootocagaaagtaaacottcaagagoocatoottoottoottottttgtttttgctcattatgaaaacttocotgaca aattgaaaaggetteaggtgagattageecacaggaaaaaecaceaagggeeaeceagaggggeeacactgtgacagaag aaqtctattqqtqctqttttttccaacaqcatqtqcttqttttacatctctqtqttcacattttqqtaattctcccaatatt tcaaactttgtcattatttctatatctgttatggtaatctgtgatcagtgatctttgatgtcactattgtagttgttttg 20 tttttttttgaggcagagtcgcactctgattgcccaggctggagtgcaatgatgtgatttcagctcactgcaacctctgc ctccccaggctcaggtgattctcccacttcagcctcccaagctgggactacaggtgtgcaccatcacacccggctaattt tttttttgtatttttaggagagacagggttttgccatgttgcccaggctggccttaaactcctagactcaaacaaccac 25 ctgcctcagcttcccaaagggctgggattacaggcatgagccactgtgcccagcccaagacacaataatattgaaattaa gccaattaataaccctacaatggcctctaagtgttcaagtgaagggaaaagtcccacgtctctcactttaaatcaaaatc tagaaatgattaagettagtaaggaggacatattgaaagtcaaggecaaaageteacetetgeaceagttageeaaattg cgacttcacaggaaaagttcttgaaggatatttaagctctactccagggaacatgcaaatgaagagaaaacaaagcagcc atattgctaatatggagaaagtttgagtggtctggagaaaagatccaaccagccacaacatttccttaagtcaaagccta 30 atccagagcaagactctaactctcttcaatgctatgaaggcggagagaggtgaggaagctgcagaagaaaagtttgaagc tagcggaggttggtttgtgaggtttaatgaaagacaacatctccataacataaaaatgcaagatgaagcaagtagca cctggatgacacacatctgtttacagcatggtttactgatatttcaagcccactattgagaactattgctagaaaaa aagattcctttcaaaaatattactgctctgcaccatgtcgatcaagagctgtgttggagatgtacgagaatattcatgttg ttttcatccctgctaacacaacatccattctgcagtccatggaccaagactttcaagtcttattaagaaatatttca 40 attgatggatctgagcaaagcaaattgaaaagcttctggaaagtagtcattattctagatgccattaggaacatttgtaa ttcatgggaggaggtcaaaataccaacattaacaggagtgtgaaagacattgattccaacccccatagatgactttcagg ggttcacgtcttcagtggaggaagttgctgtagatgtggtggaaacagcaagagaactagaactagaagtggagcctgaa gttgtgactgaattgccgcactctcatgatcaaacttgaacagatgaagagttgcttcttacatatgagcagtgaaagtg gtctcttgagatggaatctcctcctggtgaagatgctgtgaacacggttaaaatgacaacaatcgatttagaatattaca 45 taaatttagttaataaagcagtggcagggtttgagaggattgactccaattttgaaagaagtgggtaaaatgctatcaaa tagcatcacatggtatggagaaatcttttgtgaagggaagagtcgaccaaggtggcaaattgcattgtcatcttatttta agaaattgccacagccacccccagctttagcaaccaccaccctgatcagtaagcagccatcaacatcaaaacaagaccgc catcctcttcagcaaaaacactatgacttgctgaaggctcagatgatggttagcatttttagcaatacaatatttttaat taaggtatgcacattggtttttctgacataatactattgcatacttaatagactacagtataggataaacacactttta tatgcactgggaaaccaaaaaggttatttttgagatatttgctttactgtggtggtctgaagctgaactcacaatctcac 55 ctccttttgcaagtccccattcctcatatggtttcttcagagccccttctttggctttgaggagagatgccctcactcg tgatgtgatgggtgtggatacagggctggtgctgtcatcttctagtaagccctgggagaggtgtctgagcccaggtgtca gtggttttctttggaactgtgagtgcataacacttctttgccttcagccttaggccatagttgctagttctgggacaacc 60 agaaaagccctacataatctcgtgttatgtgcagagctgagtatagagctccaggtatgatctgactcacttaagatcac agtgagtetattgtattgtagtgagettagettagacatetgttaetgtaectacatggeactageeteacgcetagaca ccgatetgaaagaaatcccctaaatgcatagagaagacttctcagctgagctaaggggctcccaccaggtttgagcctat ctaatgaatccatgaggtagacagcctgcacatgtccacttggtttgatgaattgcacaaatccctatgggggatgtggt tcatgggctgggaagtgggttaccctgggaaaggtctacaggacagaggcagggatggagacaacagcatggtgagttcc 65 attgttgaggcacatgggtaacaaagcgtggcactggatggggtagattetteetatttetgtgaggateagggggaet ccctggctctcctgctaaaggtggctctagggacaggaagagtgtacttcttgacagggatgtcagagcactgatggtga caatcagtgtgacactgctcacatgactgaacaaccgagaagagcccgactgtctactgaacaacgggaagagcccgact gaacaattaatcgaaaagtgcatgggaaaagtcaggattgaaacatcatgttttaaaagacattgttttgatactgtgag aatgtacctaagtttttcctttttctgtttttcccaattttatacaatgagcatgtgttggttttataattagacattt tgtttgtttggtttggttttgagacacagettgetgteacecaggttggagtgcaatggecaatettggtteactgcaa ectecatetectgggtteaagagatteteceactteagectectgagtagetgggactataggggegeaceaceacatec agctaattttgtgtatttttagtagagatggggtttcaccatgctggccaggttggtctcaaactcctgacctcaagtta tccactcgccttggcttcccaaagtgctgggattataggcatgagccaccgcacttggcctagacatttgtttttaaaaa taaaagattcatttgctctttttacagcccgtctcactgttgactgatattgaccaggagtcaactcaggccccagggat tttcacaacagetgetgtatggcagggtttctgctcactgtgctcatgtagttggcccttgcacccaaagtgaataatta acattetececatectgttgacgatgetetgaaaatatggtecagaaatggtgtgagcaaggagacagcaatget

tggaacataggtgcagtgactagacatggggcagctgtttaaagacaaaaagg.cccaaaaaggagggatggcacgaaac accetecaatatgggcatggagtetagagtgacaaagtgateaaaagtteattteetatggggtgteegaatgtaettaa taataaaaagagaacaagagccatgcaaactgagagggacaaagtagaaagagtagcagcaccaagcaactaagtcaca gcatgataagctgctagcttgttgtcattattgtatccagaacaacatttcatttaaatgctgaagaatttcccatgggt cccactttcttgtgaatccttgggctgaaccccctgtcctgagtggttactagaacacctctggaccagaaacaca aaagtggagtaacacacactgcaaagctgtgcttccttgtttcagcctgtgaatcctcaccttgtttcccatctagccta tatttttcaaactaacttggccatagaatcatgtagtatttagggtggaagctgcccaggtctagcacgtcatttaaca gatgaggaaatggaagcttgggcagtggaagtatcttgccgaggtcacacagcaagtcagcagcacagcgtgtgtgactc cagaacatggcaaagcctcagctctgcatggtgaaagtaagaaccagcaattgccacaaacagaaatacagtgttggtcc 20 gtaactaagagtttgatgtttactgagtgcatagtatgtgctagatgctggccgtggatgcctcatagaatcctcccaac aactcatgaaatgactactgtcattcagcccaatacccagacgagaaagctgagggtaagacaggtttcaagcttggcag tctgactacagaggccactggcttagcccctgggttagtctgcctctgtaggattgggggcacgtaattttgctgtttgg ggtctcatttgccttcttagagatcacaagccaaagctttttattctagagccaaggtcacggaagccagagggcatct 25 gagagettgatatgaetgtatatagtatagteataaagaaeetgaaettgaeeatataettatgteatgtggaaaattte tcatagcttcagatagattatatctggagtgaagaatcctgccacctatgtatctggcatagtgtgagtcctcataaatg cttactggtttgaagggcaacaaaatagtgaacagagtgaaaatccccactaagatcctgggtccagaaaaagatgggaa acctgtttagctcacccgtgagcccatagttaaaactctttagacaacaggttttttccgtttacagagaacaataatat tgggtggtgagcatctgtgtgggggttggggttggggataggggatacggggagagtggagaaaaaagggggcacagggttaa 30 attttettaaeettttageettaetgttgaaaageeetgtgatettgtaeaaateatttgettettggatagtaatttet tttactaaaatgtgggcttttgactagatgaatgtaaatgttcttctagctctgatatcctttattctttatattttcta 35 40 agatttgcagagagatgagtcttagctgaaatcttgaaatcttatcttctgctaaggagaactaaaccctctccagtgag atgccttctgaatatgtgcccacaagaagttgtgtctaagtctggttctctttttttctttttcctccagacaagagggaa gcctaaaaatggtcaaaattaatattaaattacaaacgccaaataaaattttcctctaatatatcagtttcatggcacag ttagtatataattetttatggtteaaaattaaaaatgagettttetaggggetteteteagetgeetagtetaaggtgea gggagtttgagactcacagggtttaataagagaaaattctcagctagagcagctgaacttaaatagactaggcaagacag ctggttataagactaaactacccagaatgcatgacattcatctgtggtggcagacgaaacatttttatattattatttc ttgggtatgtatgacaactcttaattgtggcaactcaaactacaaacacaaacttcacagaaaatgtgaggattttacaa ttggctgttgtcatctatgaccttccctgggacttgggcacccggccatttcactctgactacatcatgtcaccaaacat $\tt ctgatggtcttgccttttaattctctttttgaggactgagagggatggtagcatggtagttaagagtgcaggcttcccgc$ attcaaaatcggttgcttactagctgtgtggctttgagcaagttactcaccctctctgtgcttcaaggtccttgtctgca 55 atctatgtaggcaattaaaaacctattgatgtataaaacagtttgcattcatggagggcaactaaatacattctaggact ttataaaagatcactttttatttatgcacagggtggaacaagatggattatcaagtgtcaagtccaatctatgacatcaa 60 ttattatacateggageeetgeeaaaaaateaatgtgaageaaategeageeegeeteetgeeteetgetetaeteaetgg atctacctgctcaacctggccatctctgacctgtttttccttcttactgtccccttctgggctcactatgctgccgccca gtgggactttggaaatacaatgtgtcaactcttgacagggctctattttataggcttcttctctctggaatcttcttcatca tectectgacaategataggtacetggetgtegtecatgetgttttgctttaaaagccaggacggteacetttggggtg gtgacaagtgtgatcacttgggtggtggtgtgttttgcgtctctcccaggaatcatctttaccagatctcaaaaagaagg tettggggetggteetgeegetgettgteatggteatetgetactegggaateetaaaaaetetgetteggtgtegaaat gagaagaagaggeacagggetgtgaggettatetteaceateatgattgtttattttetettetgggeteeetaeaaeat 70 tgtccttctcctgaacaccttccaggaattctttggcctgaataattgcagtagctctaacaggttggaccaagctatgcaggtggcaggagacctttggaccaagctatgcaggagagacctttggaggagaagttcagaaac tacctcttagtcttcttccaaaagcacattgccaaacgcttctgcaaatgctgttctattttccagcaagaggctcccga gcgagcaagctcagtttacacccgatccactggggagcaggaaatatctgtgggcttgtgacacggactcaagtgggctg gtttagtgatctgaacagaaataccaaaattatttcagaaatgtacaactttttacctagtacaaggcaacatataggtt gtaaatgtgttttaaaacaggtetttgtettgetatggggagaaaagacatgaatatgattagtaaagaaatgacaetttt catgtgtgatttcccctccaaggtatggttaataagtttcactgacttagaaccaggcgagagacttgtggcctgggaga gctggggaagcttcttaaatgagaaggaatttgagttggatcatctattgctggcaaagacagaagcctcactgcaagca

tggccaaaggaggtcaggaaggatgagcatttagggcaaggagaccaccaacagccctcaggtcagggtgaggatggcc tctgctaagctcaaggcgtgaggatgggaaggaggaggtattcgtaaggatgggaaggagggggtattcgtgcagcat atgaggatgcagagtcagcagaactggggtggatttggtttggaagtgagggtcagagaggagtcagagagaatccctag tcttcaagcagattggagaaacccttgaaaagacatcaagcacagaaggaggaggaggaggtttaggtcaagaagaaggattggtgaaaaggtgggtctggtttgcagagcttgaacacagtctcacccagactccaggctgtctttcactgaat gttactcattcagggatagcacatgagcaaagcattgagcaaaggggtcccatagaggtgagggaaagcctgaaaaactaag atgctgcctgcccagtgcacacaagtgtaggtatcattttctgcatttaaccgtcaataggcaaagggggaagggacat 10 attcatttggaaataagctgccttgagccttaaaacccacaaaagtacaatttaccagcctecgtatttcagactgaatg ggggtgggggggggccttaggtacttattccagatgccttctccagacaaaccagaagcaacagaaaaaatcgtctctc ttctcatatgattgtgcacatacttgagactgttttgaatttggggtatggctaaaaccatcatagtacaggtaaggtg gggaatagtaagtggtgagaactactcagggaatgaaggtgtcagaataataagaggtgctactgactttctcagcctct gaalatgaacgglgagcallgtggctglcagcaggaagcaacgaagggaaatglclllcclltgclcllaagtlgtgga gagtgcaacagtagcataggaccctaccctctgggccaagtcaaagacattctgacatcttagtatttgcatattcttat gtatgtgaaagttacaaattgcttgaaagaaaatatgcatctaataaaaaacaccttctaaaataattcattatattctt 20 gctctttcagtcaagtgtacattttagagaatagcacataaaactgccagagcattttataagcagctgttttcttcctta gtgtgtgtgcatgtgtgtgtgtgtatacaaagagagagataattgtatttttgtattttctttaaataatttttaaaa ttgacccttttcctgagacaaattgccagaatagtttgtatttagagatggtacctctaagagtaaggttgctggttgct gagcaattgacttgaaaacttttaaaattcaaattttaattccactactcaaaagaattgccatgttttaaaaaaagagaa ttggtgccataagttagttgtctatgtttgaaaatgaagaagatatgcaacgtcatggcctggtcacttacccgcagccc 25 gcagtcatgacaatcatgtacattttggatttatgtgcacgagtetettaceetgagagagagacaggtgetacaggtggag gggacccgictgggtcacgttcacatitttgaacatgctggttttcagtcactgcacactcatctcccagcgcaggtcatg ggcagcagatgcaaaagctgcccgtggtcctatttggaggtgcatgaaatgagcagaagacagaatagcttgatctgact agaagggcagcttgtccctaccaagacttgaaggattgcctttcatctgttagggtaaaaggtagaatgaaccaaggaag 30 tattaaatgtcttccaatgttagcacgaagaaaagctatttgcagtgttgccagcctttccagagcccgtccccattacctcccaggcccatgcctttactccttggagtttcaactcacgaccttcaggatctgactttattcaccaactctggggtg 35 agagatagagctccaaatgcaaacataactgctcaagtgttaacacttataatgaaaacataagaattaccaccaactac tgttgcccaggctggagtgcaatggtgcgatctcggctcactgcaaccactgcctcccgggttcaagcaattctcctgcc 40 tcagcctcctgagtagctgggactacaggcatgcaccaccacgcctgggtaattttttgtatttttagtagagacagggt ttcaccgtattagccaggatgctctcgatctcctgacctcgtgatctgcccgcctcggcctcccaccgaagtgctgggat tacaggcatgagccactgtgcccggccaacaatcatgaactttctaactgcagttccttgtagcttgttaacacatcca cttacttattgtcagagtacgtggagattttccacaaccctcggggataaggctgaacagaagaggcaaaaacgtgaaaa catttcgatageteetataetttgaaataaaatteaetgtaaaagttgettgtattttteeaaaaeagagteaaeeetta 45 atatttaagattetgtatacaaatacatatttttatatatattaatatatttgteatatgacatatatetttatattaat gttactacgtggtttgataatccgttttgtgtcattgtgattctgtcatgtttttggggacttatttttgtttctctgggt ggtcactagtttttttaaagcattcatggaagagtgtgaatcttttacaagctaggaagccatggcaagccttgggtcat actgccccgcgaggccacattggcaaaccagcaagggtgttcaacttccagacttggccatggagaagacatacgagga 55 aatatgeggtgtttggttttttgttcttgegatagtttactgagaatgatggtttccaatttcatccatgtccctacaaa ggacatgaacatagcaaagacttggaaccaacccaaatgtccaacaatgatagactggattaagaaaatgtggcacatat 60 acaccalggtaaatttetttateattegeacteteetttetetattattgttattgtaactgaacegeagattagteaet cattgcttgcagaatccaattaacaagagcgaggtcagatataaagaaaatgatttattccaaacctccttcagggaaga ggtgcagcctcctgcctctaaatgcactgcttcgccaggcgtggtggctcacacctgtaatcccagcactttgggagacc gaggagggcagatcacttaaggtcaggagttcaagaccggcctggccaatatagtgaaacccctgcctctactaaaaata caaaaaattagccagacgtggtggcgggtgcttgtaatcccagctactcgggaggctgaggcaggagaatcgcttgaacc 65 tgggaggtggaagttgcagtgagctgacatctagccactgcactccagcctgggtgacagagtgagactctgtctcaaaa taaataaataaataaataaataaataaatagtaaatgcactgctttgcttttggagcagaaagcaggcactttgaaaagg caggggaggaagtgagcaagggcagggggtctgcacactggcatggtgcctgatctatccaggcagttgaattggcactt tcataggcagaaataagttgaaaaagtggcctaaaactctctaggtgggagtggatagtgggcatgccttcaacctgcct ttctggagggtgagttccatggcaaccccctgaagggtgagagttccatggagatcatgctitggictgtaaatcagctg ttaactetetagaaagttetgtettggageatatagttagatgaacttgeeetgtaaagaatgtetggtgaaggggaagt aaaaggtgagatttgcatttctaaagggctaagtagaacgtggggtacaagaggaaaggagaaaagagaaaataatttaa aaaataattgtaacttattcccttttacttagaaaaaagggaatactcagttacattatcacctcgtttacatcaaaccc tcttatggaatcctatggtttgaaaacaaaaaggttgttgaggaccagtgagcccaacccctttgctttataaatgaaga gcattgcctgccctaagccccagagactctgatgtcgtgggtctggagtgggctccaacagcggcatgttttgatggtgc ttcccagtggcacgccagcgatgagcctttgagtaggggatggggcactcgtgactccccttcacgatcagcacctgt gtgctaataaattcacaaaagccaacatattggagtcactcagggagttttacaaatagtgaggttaatccactcta atagttctgattcgatctgcctgcattgctgccctgtggttccccactgtagaagctccccaggtgattctaagtgtagc gacttcattggcaataccaaagatctgtatttgaggctccaagtatttcactttcatttttggttttgggttatgtttc accettectttecaagtgaaaagtaaacagaagtgggatgtetggcgcccatgetgagettggcaactteaaatteaata

gattetteteeccccattteettateeetgeagtgageeateettettaaetettteeatgaageattatteetgaaga actgggaactcatgccagccctgatcaggcaatgataattctgcagagaattagaatttagatttaaattgtcaactctt aacttaatctttttggttttgagtcaagacaattcctccttttgaaactgcataccgctgaatataataataatgtaatta agattaaaaataagaaactaatgggagaatttcaatattgtctctgttcactttaaaattcctctacttaggtttactgc cattaccaaagactattcaaaaatcctttttaggagaatcctaatggtttcctgacatataatcaaataaggactctgtt cgagttccagccttgggggctgtgggagcttgggcaagtgacttaacgtctctggctctcaggatctaaaaggatttccag tagtaatttggggtgttactgatacaggagctaaaaagaaattatttaggtggttagtgagggtcagagagtcctcggta atagataagcaagctggaagcttgcacgggtgaatgccggcagctgtgccaataggaaaaggctatctgggggccaggca tgttcaacatggattctccatcttcccttttctttgtcaaccaagtgtacagtaaaggaacaggcaacatggcacgggcc aggtagagaacccttctgcataataaaagattagggtgagatggccagcttcttcccgtgctatgtaaatggcatacctg gtccaaccagtcttttgggccctgtgtaaatcagacaccgcctcctcaagttagtctataaaaccccatgcattttaccg tgaaactgggagatccactcggaacccctcctgcacgagagaccttttctctttttgcctattacacttccgctcttaaa Ctcactgctcatgtgttagcatccttgatttccttggcatgaggcaatgaaccttgtgtattaccccatacaaatgatgc tgcttcattactaatagcaacctgacagggttgtgttggggtataaattatctagaccagggagatccaatataattttt ttgtaatgacgggaatgctttgtatctgcatcatccaaaatggtagccaccaggccagggtgaaatgtggccagtgtgac tgaggaactgaatgttttccatgatttaatttaaatgtggccaatggctactgtaggagacagtgtgagtctggcatatt 20 ataaataataatattaatataatttgaactttggcatcagtgtttcctagatttgaattactatgcaagttgcttactg tttccaagcctcagctttctaatctgtaattggggctaataatagtatctgccttacaggtttgttcagaggataaatga gaaattgcatgttgagggcttaacacagtgcctggcacataaaagctctggtaacagttagccactttaataatttgcta ataatggetatttettettetteagattaggatgtgeteeccecaaacagtgeacttagacatagegggeaatceageteacte tetgeagtgagagagaageactggeegaceagagteageeaggggeteatgggtatgaaateaaeageatgattttgtaa 25 gttaagagctaggtaagcaaaacccaatgagaagttctggcaaagccccatgggcaggggtggcttaggcacaggaaaca agtaggatttcataccacgcgcctcagtctacttccggggccctcatcctcagctgtgcctatqcaaagqaqagcaacca 30 ataaaccccaccgccactctcctactgtggaggccagggatggccaggggtaagaggggatgggaagtgtttcctccag ccgtcctctgagaaggagaggaaactgggcagagcttctgtcctccttcaagcagaaacagaaacaaaaagaaacccctaa Caaacattgaaggaggccagctatgtgccagatgccaactcatgccatgaaagagagtccctgtccttatgaaattcac tatttagagagaaaagcaagcaaaaggcaaagtttgaaaagtactgttgaagtggcatcattgtctggggtgaatacct 35 gaggtttgtggtctcacgccaagggaatcaaggactcaggcacacaagaagtgagtttaagagcagaggtttaataggca aaagaaagagaaaaaagaatagetetettgeetgeacagagagaggggeacetgagtggatetteetgttttgtggtgaa atgcaaggcattttatagacgagcttgaggaagtggtgtctgatttacttaggacccgagagattggtcagaccaggtgt gccatgttgtctgttccttactgtacacgtggttgacaaagaaaagggaagatgaagaatccatgttgaacatgcctggc ccccagatagtcttttcctattggcacagctgccggcattcactcttgcaagcttccagattgcttatctatgtctgcag cccaattttacaggttgctctttgctagaaaagaaatgatttgggggctgcttttcattaaaaggaaaaccttaccaagg acccgagtgcattagctatttatcactccacagtccccattcacgtgttaattcagcatttattgaatgcttactgtttg 50 caatgtctatgtcaagctgtcaagtgtagtttttattctacaggccacaggcaccccctaactgtqttaaacaagatqqt agtattgagacaggaataataagggtggtcacaggagaatggaagattccaggcagcagtttgactagtaaaaaaggaaa ctgttgaaatagctgcataatccaggggtcaataagaacctgagaaccagggtgtgagccaaggctggttaaaagcaact ccaccagggccattccatttcctggaacactcatgtttggtgtaaaaatgggtggcaccacagctctgagaaatctttac 55 ctttttcaggaaacttcatgaatattccatcctttggttaaagaaacccataatgtagaagcccaaaccctactgggcg gatggagtctggctctgtcacccaggctggagtgcagtggcgcagtctcagctcactgcaagctctgcctccagggttca ggccattctcctgcctcagcctcctgagcagcagggactacaggcgcccaccacaacgcctagctaattttttgtatttt cagtagagatggggtttcaccatattttattttatttttggagacagggtctcactttgttggctcgctgcaacctctgcc 60 $\verb|tcccaggctcaagcaatcctccaacctcagcccccaagtagctgggaggacagacgtgcaccaccaccacctggctaata|$ ttttgtatttttttttgtagagacagggtcttgccatgttccccaggctggtcttgaactcctggactcaggtgatcagc ctgcctccaccttccaaagtgctaggattacaggaatgagccaccccacccgaccactcccatttcttgagtgtgtgc attttgctctgcaataaatctctctactttcacttttctctgactcgtccttgaattccttcttgtgacagcgtcaacag $\verb|cctggacaccaggtgcagtcaacgtctcaccagtgtttagggacctcccctaatccactggtatcagcatgatcagactt|\\$ 65 agaaagttctacaggaaaaaggtggggccaaggtgggacagggggaaaggaattgttgcacattaacagtgcaatgcagag caetggtcttgtttatgtccaggttagaacaaaccaatgaggagaacatcttttgagacaactggagaaatttgaacact gactagatataatattatgttaattatgctttaatttggggtacaataatgcttttgtagctatttctaaagagtcctta 70 tctcttaaggatacactctaaaatactagtggattaagttatatgatgtttagactctttttaaaataatccagtggggt gtggtggacacaaatgaaagataccccttcctactatgaattctaggtgtgtactacccaagatgagtcaatcggatcc 75 tagettecagaaategtgageatgatgeageeetacagaegeagtgeeetggaaaggagaeecatgaceatecaaggaag atgtcccatcacagaactgccetgggtcatgtgttttccaagtccacatgtccggtagttccttctttcctatgaccaat gccaccagtcttccagcactgtcctttattgctaggcaaacctgagccatcctcttcttcttgcaacttgtgcctgaagt agtggattgcttgagctcaagagttcaagaccagcctgagcaacatggcaaaaccccgtctctacaaaaaatacaaaaat taactgggggtggtggtggtgcacctgcagtcccagctactcaggaggcagaaggaggatttcttgagccctgaaggtg gttgtgttacgtgcattcatgttaagagaccaccaaacaggctttgtgtgagcaattaagctttttaatcatgtgggtgc

attgtccaggagaaggaatgtcacaaggtcaactgatcagttagggtggggcaggaacaaattacaatggtggaatgtca tcagttaaggcaggaactgggtattttcacttctttgtggttcttcagttgcttcaggccatctggatgtataagcgcag gtcacaggggatatgatggcttagctcgggctcagaggcctgacattcctgtcttcttatattaataagaaaaacaaaac aaaatagtgatgaaatgttggggcagcgaaaatttttgggggtggtatggagagataatgggtgatgtttctcagggctg gatattgtggggttgttagaaagagcaattctcatatagaatgattggtaatggcctggatgcagttttgtatgaattga gaaactaaacggaagacacaaggtctgaataagagaaggagaaaaacaggcattaaaggactaagaactgggaggacca 10 gtttttttttatgttgtcatatgccaggccagattgatttaggtaaaaacaacactcttcatttaaaaatatacagagttc gaaggattagaaatggctaggagagagtgagtgagttgatagtgtggtggagatagctgaggagaggtagagggtggca taagaatgggaacgagaataagagtgagtataaaagtaaagaatagaacttcatcagggtgaaagtattggagggtgccc tgtcagcaaagatcatctgtccactccaagagggagtcaagagtggcggattggggatagtaccaggagatatccactat 15 gatggtttggaggaaaagtgtaaactggcagtgtaaacaggggcagggcatttatgagtcattgagaatggtgaatagga gtatgactagacagaagatagtggagatgacaaattttgggggcacagtccaaatagtgggggtgactgcgtagagctct gttgcaaaaagtagggtaaggataaatagacttaatagaatgaagagatgtattaggctcataagggttattattgttct gtctgatgggcacagctttattctggaacagtgaatccaatggggagggtcgtgcagacggatggcagttggggtgctat 20 a a at gac cagg tagg gtc cagt c cat caa ag c t g tag ag t g tag ag g g t cag a c t t g a caa g gac t g at t g c c cag c t a a cat g a c t g a c a g g c t g a c a g g c t g a c a g g c t g a c a g g c t g a c a g g c t g a c a g g c t g a c a g g c c a g c a g c a g c a g c a g c a g c a g c a g c aggtalcttcacatggctgggagtttggaggaggcaagagagattagcagcctggcgaattlcctgtctagcctgctggaggactggaagataaaggcaacaggtcgtgggcctggatcctgtgtgaggactctagcagcacagccttgtatttcagctg 25 gggtctgggagattaactgaacagagtctgcaggaagggtatgtgtatgttgatggagcattataccaagataggtaatg ctaggggaagaaatttgtgcctcagagggcaatactttgtacccctttgagtaaagatgttgaagaagcaggctagtgtc ctgctgggaagattggtaagaggggctgcaaagaagaagatcatcaacatattgaataaggtgggaggtagatgggtgaa aagaaagcagatcatgagaaagggcctggccaaagtaatgtgggctgtccctgaagccttggggtagaaaaatccaggtg agttgttgggactggtgggaggtgtcaaggtcagtccaagtaaggcaaaaaagaggctgggaggagggatgcaaggggatagta 30 aaqaaqqcatctttgaggtcgataacaqaatagagttgtggaagggtgtattgaagataggagggtgtacgggttttggca ctataggatggatgggaaggacgatttgatcaacaagacgaagatcctgaacaaacctgtaagacttgtccggtttctgg taacccttttaaagcctgctgtgggatgggatattggcattgagcggggtaagggtgattacattttaatgggatgataa 35 ggggtgcatgatcggttgccaaggtaggagtagaggtttcttatacttgtggattaaggtggggagatacaaggggagga tgtgaaacaggtcttgagttgggtaaaagtgcagcaaagagatgtggctgcagcccaggaatactcagggaagcagataa tttggttaaaatgtctcagcctattaaggaagctggacaggtggggataactaaaaaagtgcataaaaagaatgttgtcca agttggcaccagagtgggggagttttaagcggtttagaagcctcgccgacaatacccacacagttatggaggcaaggga aacaggcccttgaaaagaaagtaatgtggagtgggtagcctccgtattgattaagaaggggacagacttaccctccactg 40 taagagt tacccaaag catctg tgatggtccagg aggcttctg aggtgat caggcagtgtcagtcttcagctgctaagctgagaagatctgggaaggagtcagtcagagagccttgggccagagttccaggggctctgggagtggttgccaggcaagttg aacagtetgatttecagtggggtetegcacagatgggacattecttggcecagtggecagatttecggcacttgaaggaa gateetgggggaggaggtectggagaaatgeetggeceetgcagtttaggtgttttgaagttettgtgtgetggagatgt ggctggggtttcctttacagcggaggcaagtaattgcaactcagaaatatgttgtcacttggctgcctctttctattat tgtacaccttaaggcgagggtaattaaatcctgttgtggggtttgaggctggaatctaatttttggagcttttctatt gtcaggagcagattgggtaataaaatgcatattgagaataagacggccttctggcacctctgggtctagagaggtaaagt gtctaagggttgttgccaaacaggccatggactcagctgggttttcatatttgataaaaagagcctaaacgctaactga tttgggagaggtcagctaaagaaaaaggagcattaaccttgactatgcctttagctctagccacctctctaagaggaaat tgttgggccggtgggggggggctagttgtggaacgaaactgtaagccagaccaggtgtgaggagagaaggtgaccaaagg 50 tttataqqqtaqqqqaqqaqqqtqqqaaqaattqqqqactqqctaqqcctagcqaqqaacaqcctqqqqagqqq agaaatcagatgggtccgtagaaaaggaggattcaaaggactcagagcttggggtggagactgaaggaacaggaga gaaagaggaaagatttgggatgagtcacattgggagcagagactagagagggactgatgtgtaaagaatgcctggacgte ctggccacttggaactattgtcaagtttgtattggggccaagcagtattacagaagaaaataagatgtttaggtttttaa 55 aagagtgcataaaagaatgttgtccaagtccatgccttcttaatcaatatgggagctacccactccacattaccttctt ttcaagggcctgtttcccttgcctccataactgttgtgggtattgatggccaggcttataagccccttaaaattacccca ctctggtgccaacttggagaggtcaggtgttagtcaaaggtgttttaagttttaagaacacaggctaagggagaagaagg gggaatgaagcgtggaaggttgcccatagtgaaagaggtaagtttaaagagaaaggtagagacatggagaaggggggagg tgagcagccctgggctgtcatgtgggttagcagccaaagctggtgtcccagcaattgacttaccaccaagggaatgtggg 60 gatgatcagacaccaaaggaaggctgtcttcccaaatccatgatccatgttggagtttttgagttcatggataaaatgtg teteetttgtetetactagagaggaaaaagaaetggaatttgaaggacagggagattgaagggtagggagagaggetgaa gaagagagtgaggagaccgcttacccggtttgaaattggtgagatgttccttgggctggtctgaggacctgaggtcgtag gtggatcttctcatggagtgagggtgaggaggggaccaatctcccgaaggagtcaccctgtccggggtcttcggcacc aaatgttatgcgcatccatatgaagagaccaccaaacaggctttgtgtgagcaataaagctttttaatcatgtgggtgca 70 acagatatttattgagaagcaagtatgctggtgctagggttacaacagcgcacaaattcttgtattcaaggaatgaggta agagtatgcagataggagccagagaggtcaagaggcaattgcaacatagagtgacacgtgctccagaacacataggaggg 75 cttccaggccccatgctgggctatcagagctggcttcctgcaggtggtgtggctcagctaaaacctgagaaccaagaatg agccttctgatatctcagggttaaatcggcacaaatgaaaccattttataaccaaacattttccctcctgaactgca ctttttctagaacccatttaatccttcctaacatgttcaatccagccccgtgatttttccagtcaaatgcaagatgcgtag gatteettttetgtteagtgeteeceagecaatettttteeetteteecacecacagttactaatteeagegttteagt tctcagcagaggatgacagttccaccaggagacatcagtgttatctggagacatttttagttgtcccagctgagggcacag tgctgctgctgcatctagtgggtgaaggtcaggaatgcacctcaacatcctggaacactcaggacaatccccagcaacaaaa acctacccatccagaacatcaacagggctgtggctgaggagccctgctctagtgcttcctccttactgtatcctcatcaa ggagggctctggggcatgtcaggggctgctacaggctcctggcagatttcgggcgacttactccagacttgtggaacattc

aggattettageatggecacaggagagteaggetgtecacaageactetetetttetteacceacteatteetgteacte taccatttccactgccttcccaaatgcccatcgtgagtcccaccaggggccagaacaccactctctcaagcctccccagt qqqqqtqcacacctqqaqaacatgtctcacatcccccagccagcgagacgtcctgagattccagcacttctcagtgtct ttcccagcttgtttgtatctggaatggggtggggtctctcacacaggagaaattacaaggaaaagtgtacgtgacaggaa agcagaaagtgagaagggagcagaaagaaatggggctggaacctgggaaggagaggacaggtggggatggccttgcacac cgtgggcactgaggagtgtgggcccatggcatgggtggagaggagtttcaagatagggagtagattcctattttgaactt cggattqcccctqqcgatqtggagactqtattggaagaaggcaagaatggaggagagagcccctaggtggaggtttggcaat getetetecaqaatataqeaqaggeetettecaaggtaggaaageeetgaetggagagaagttaatggetetgagggete aagggaggacttggattatcaggacttttagggaggcatatgatcaaggcttgggtcttggcccattgaaatggggagca ctggttttaggatgtgggtcaattagtttggttttcaggacaggctgagttggatatcctgggggacctccaggtggcag tgtcaggggaagctggatgtgctgacactgaactcagcagagtgactgagtagagatcgacatctggggtcacaggcagt 15 aacgtcaaatgttgcagagacatagagtaaggtaagagtggaaaaaacatccatggaaccctgtgatgcaatcggaatgc cgcctagaaaagcacaacttctgcccccaagccctgggctctcctgagaggacaggaccagcctctgaagttgaaggtcc tggttctgcccccaagccctgggctctcctgagaggacaggaccagcctctgaagttgaaggtcctggtttaccagatag ggaaggggccctttccaagaccctttccagaaggtgtggctgagatgggaaccgtggactctgtgcagatgtaggagctg 2.0 ttgggggagacgtgagcaggaagaagcagggccttcacagtccccagcttaggggcctcaccacccagactgaagaccag gaccaaaccctttcctgcacagttacaatgtgtcatttaattttactaaagggaatatttttaaatgaggatgctactt tgtgtattaatttttacctctattcataaaagaaacgtttcttatctatttaagatgattcatatcagaccagtgtctgc ccaactcgactgaccctgtgaaaactgggcacttcacactccaatgatgatgatgagtccccagcagcatagtttaagg 25 cagggatggctgagccaatgactggctaatgttggattgcagaggcctagcgcctcccctcaattcctaattccttgta ggaataactgaggcctcctctgtgaccacgtgggcagcttctccctctgcctggtcctgtcttgttctctcctttccat tqtqtctcctqqaaqccctccccacaagtctgctgcatacaactctccttctcagagagcctgagccctggattcccagg aaatqtcaccaccttqaattctatcactctctcttttcttgccccatctctgacaagtaggtggtccctcaagaacctga 35 qactqaqqtaacacctaccctgggaatccttcccctgcctctcgtgagccaggccgggtgctcttgggacagctcccact gctcctgtgtgctcccccagcttggcacatgactccctgaattatagtcagttccgtacctgaatctccctctagaatgc cagtgccacgaggacagaggacggttccactttgttcactattttctccccagggtctggcaaagttcctgggacttggg agaggtgtccttcaggagcttggcagaagccaaacggcacacttaagtagggcaactgaggtgagtttaatgaaggattc tatacaaaaatttggacaaggtatagggaggccacaatacacagtgcagtgcctggtgccagtgagagcagggcactatt 40 cccactgcaaggccagacagggcaaggggagggagctgcctgacaagagctgcccttacgtcaagggacacatcagccca ctagaccccatcaggagggagccagggcctgactcccctgaccttgctctccaatcttctgcctaaaattccccatcagc caaacacaactgaaaactgaaagacaggggagcctgctgttaataaggtgagcttcccccagaataaagctgggtagaga gtggagaatggatatggaagggcaaaaggaagatttataagacagtgggcactaaatatctatgagatgaataaaggaac cacattttacaacaaacggtcattgaaacgctactcaatggaaagagatcatttcggtcactgtctggtgcagacaaatcaaaagagcacacatgcatcaaaaaggccatgtccggtgtaactccgacacggggcagacagcaaggctgaagcctatggggtat 45 gtggagccggaactgagagatcctgatgtaaatctagcacttgggaaaaagggggactagaagaaattcacccacaggcag aggaaaacacaaacacttatctatttttgcctaggctttaagtggtatgggaaaaatctctgagactacaaatcctgtgc ttcatgcacaggtttataataccctcaaaatggaagaccccaaaaccaggcgcggaaaattcatatcaggccattgatgc cctcaatgttcccggctgaaacaaactcaaaactcctctggaaaggagtgctcccacttcaagccatgaaaagctactgc aqaqaaaataatccccaqtcaagacacactcacattgaaactgcaaggcacacaaggaaatggatcaccttgagtgatag ctggcagagctaataaacctctgtatacctctaagaagctccacgcactagtataacccttaaagatttgatgaaatcat tactttattaqaattqtttttataaaaaatcaaaatccaaaaaagcaacaaattttataccagagccaattcggtatat acaagggtgtcttactcttttggaatttgtcttattgtcctaactcagcacattgtcctggtctatgaaaagtcctagaa accettetaccetetgtaatgtaggagetttaactcaatagggttttttaaattetttttettgtetttttetttt 55 cacttgtctcctgattggagagtattagacaattctcaggatttctttattttccttcttattccataggattgggaaa cccagtaggattgggtttaggcatatctctaaagcaccatgtttcaacgttttgatgtaagattgtgccctatttcttgt tcagttgctgccagcagatgttatagttttaaaactagtttttggtcattgagatattagagaggggaagagtctgctat cctgctttactcatcttcatctacactacactgtcatcttcactgcaaagtcctgtattaatgtttttagattctataac 60 attttaacaggtgtcaaaaaatcttaagcaccacttcagcttgggaatctctaaatgtaatggtgtttgtgggctggact gatgtctgcgtcttgttgttgttattgtctgtagtaatggagagccgggagatcctggacacttcctgttcatgggcact tgatgcattagctgccccagcagctgattacatttaaacaaggatgtgtgggtgaacccaagggagaccaatctcagtgga $\verb|atggtggggcag| a a gccaggctgcagggtgtagagtagggaatgagcagtgatgaagtagaaacagagttttggacaact| \\$ agtgaaactgcctggaagagggggagaagaagtaagtaaatggtctgaccaatgtttgaggtcaaagtgggtttgtaatct 65 ttatttaagggacagatctgagcatttaaaaattctgaataatctaatagagaggaaaaagttgggactcaaagaaaatg tgggaaaaaatgatgaaggttaaacggaatgagatccagagtgcagggggagagattagcctttggtgttagaggagcaa ctctgtccatggagagaggaaaaatgtagacataccacagttgcatttgaagttggggcctgaggagttgaggagttctgagaaaagcagaagatgaagatcatttcctgagagtaaatgggagtcattagaacgggggtgaagagactggaagctttagg tagettgaaatagttgatggaaaaattggataaagtgacaatttgtcacactcagaacagetatcagggaatctagaaga 70 ttttgaaacagggtctcactctgtcacacaggctggagtgtagtagtagtagcacaatcacagctcaatgcaatctctgc ctcccqqqctcaaqcaatcctcccaccccaqcctcccqqgcctgggactacagacacaccaccactcccagctatatt ttgtacatttgtagagacagggtctcgccatgttgcccaagctggtcttgaactcctgggctcaagtaatctgccacct 75 tcaaagaaaaaatgtagaggataatttatctaaggctggggcttcaagagaggtcagggtgttgacaagagaatgactaa gtggcagactactggatctcagctagataaagagggatgtgatcgtgggaggggctgatagtcagaggctggaaggcttg atgaacaacacatattacacaaagaataaatggagtgagagaaaccaaaggagtaaaagttgtcatcagaaaagtgagaa attttattgtgagaattcagtggtaaatcaatgttaacaaacctcagctgggcactagtggagtgaaaccgaaggccagg gagttgagttaatgagetgagaettgggcaecagatgggggtecacatggacaactaagecaecaggatgatgtgggaaa cagtgaggtggagcagagagcaatgtagttggagaagtggagcccacagcagtctcctttatatctagaagggaattaat agccaaaaaatggcaccgaggccaaggatgtcaccttctgactcccaaatctgagacagatgtgagagggaaggaqtatc

ctcaagggacaggagatggtgcgaatgtttttggcataaatcaaagatgtcagggaaattgtcagaattcaggttccaga gacacagaggaaaagcgtgggagaaagtggaatattgggaggtgagattagggcagaggaagcacaaatcaaagaacgag gaatagaaaaagtcatatgagctgaggagttggccaaacatgacagaatgggaatatgatggaattaagtggctttatgt gttccaaaaggattggtccacgcaggccacaggaaaatgggaggtaagaaggaaagggatcgaaatgctgcaaagtgtatt gatacagaacccaaggtggggtctggcatacaagaagtataatagaggaaatgtctgtgacatttgcaggactgcaaagg gagccaggagaagctgggaaagccatgagatcacaagcaggtctgactccaagtgaaggagatggggaatgacgcaaggt ttggctgaagcatgtgccaaaggcacccatcagaggagtccctctccaagggatgggcctatcatagtgtccctaatagt gtcatggagtgggagcagccacggagggcacagccttggcatgaacgcagacatgggtctcagagtgcagcagctgggc aattaataatattaattaattaattaattaataatatttattta atgtctaaggaagcatttctcagaatatactcactgaacttttagcctataagtacctgtatgaaaattttaaaaggggt ttcatgatcaaaacattttgggaaacactccataccctttcttcctcatgaaggatcataatgcctattagtatatgaag ggctctgagaagtcctgtagtaaagaaacttgctttagtttttagtccagcaatttttcaaacttaaatgagcaatagc 15 ctcccatccttttttttacactttttagcatactgcggaataaactcaacatgcattgagaaagactgctttagggaata gtcaacactatttcactcccagtaagtacatataaaatctgtatttccagggtggattatcaacacagctgtattttaga aatattatctgccctcccaggtatcacagctactaattattgggtactgaggtggaattttagggatcagccaattatgg
gaaagaaaatctgggggcaggataagatggtctccgaagccttaaaattatagccattattacctctttgatctacta ctcaatatcaaacaactaattcagaagaaaattgattgttttctaaaagtagtttttctacatttcccattaagaagcag tggtatttaaaacttataatggctattatgtgagattatcactatcatagtttttctctatacaaattttctgtaacatt 20 gggacagattaaattatcatcagtctaaacattctaatacctatttctctttttttgaaattttccaaatttgttattat gcatttaaacaataatttttgaacttttatttaggttctggggtacatgtgaaagcttgttacataggtaaccttttg tcatgagggtttgttgtacaaattatttcatcactcagctatcaagcccagtactcaataggtatcttttctgctcctct 25 ccctcctcccacctccagtctcaagtagacctcggtgtctgttgttcccttctttgagttcatgtgttctcatcatta gctcccacttataagtgagaatacaaggtatttggttttctgttcctgtgttagtttgctaagggtaatagcctccagct ccattcgtgtttccacaaaaaaacatgatctcgttctttcatggctgcatagtattccatggtgtatatgtaccacact ttctttatctaatctgtcattgatgggcatttaggtttattccatgtctttgctactgtgaatagtgctgcaatgaacat tcacatgcgtgtgtcttcatggtagaatgatttatattcctctgggtgtatacccagtaatgggatttctgtttttagct ctttgatctaatacctatttctcaagatcaagttagatctctaaaaaaggcatcatcctagcatttccccatcccttccc 30 tattaacttataaaagggtatgaactactaaagggggtaaggagaatgctgaagaatgcaggaatggcagatgtagagag cccttgttggaggggtgtgcaacccaatggatgcccaagaagtttgcagagttgtggcaggttggggctgctgag cagcaaaatttactaggaagctaccagtagggtgccagcaagaattcagcaggaagcactgtcgtggtgtcggcgagg ccagcaaaatttactaggaagctaccagtagggtgccagcaagaattcagcaggaagcactgtcgtggtgtcggcagaaa ttcactgaggagtgggcactgcagggtctccacccagcactggcaaatcagccaaaagaacaaaacaaaataaaaacaa atcccagaaccagaaagaaaaactctgcctcttactgcgaccctcttatgccttctacagcaactggcaaaggagaaat tggagcctcacatcctttgcctttttattgagggtcaatatattaagaagaatatgtctgcgtcttcggtaaaattatt 40 tctctctctcttttttttttttttttttaagatggagtctcactctgtcacccaggccggagtgcagtggcaca atcttggctcacggcaacctccacctcctgggttcgagtgattctcctgcttcagcctcccgagtagctgggattacggg 45 cacccatcgccacccctcctggctaatttttgtatttttagtagagatgaagttttgccatgtcggccaggctgttctca tcagcaaggctttttctgactacactatttaaaatgtgatccctgagccaccttggcctctcttgctgtccttccctgct tcgccttctccatagcacttctctcctactaatctacaatttacttgagctctgtgaaggtcaggatttttgcctattt gtccattggtgcatccccagcacctggaacagagctaggcacaggctaggcactctagaaatacttgctgaataattgaa ttaagtaaatgagtgatctacacgtagtggggaatgagagtatacagtgatagttccttcgactaaaactggggtcaaat tatagtgataaagaggaactcagaccttcagaggtaagctttgtggaccacttgccaaggctgcagaatgtgatgtcgtt tcacaaacaaggaggccctattatggcttcagatatgagaataataaagagaactttcctttcgcctcaactgcagcctt ctaaactcttccttcctatgtagaagtttcaaggacctcatggcctgagtgtggataggcagaatgctgggaatca ggcaaaaataataataatgaaagtgaaggtcatgctaatattagtaagccagggtgatcctgaatttacaaaacattt ttctttgggaaatttcacacctcacatgattctgtgtttttacttgggaaatttcacatctcacatgactctgtgacatg cggtacatgaggtgcctgactgctgttttgtcctctactaatgaggaagagtgtgcgtactcccagcgttttgcaagtt tcaaagtctgacttgactttccttttcctggaactgatccatgagtatcgagagtaaagctgcccgcacctactca ttcaagatcctgagtgtcctgcccagctgcaggaggtggagagacccaggaggagggggccactgctgatcccaggctgta cacacgtggagttaaatttaatgctcaatcacatatttgtctgggctctttctgtgtttatttttctctttaatagttctc gccagagtgcagagtggcatgatcatggctcaccgcagcctccaactcctgggctcacgtgaacatcccaccttggcctc tggaatgtctgggattacaggcacttgccactgcatctggctaatttttatattgtttatagatccgggatctcactatg ttgcccaggctggcctcaaactcctgggctcaagcgaccctccacctcatacttctgagtagctggggctgtaggaatg cgcctcagtgccaggctagtttcttaattttctatttctattttgacaggtacaaattttgtattcaatcctacctcaga cacatctttggtgggaaaaggatgtcatttaatcaatatataaattctaagcaaataggtctgatccccaaattaggtta gtcacagctgctgagtcgttgacccaagagaagctcatctagattttttcattattttcaagttcctcttctcggttcgt ccttcttccagaccatgccctccccgtcccactctcttcccacagcctccccacagcctcctcccaccattccaa atctgggctgttctctcaatttccttctctctggactcaaacctaccctagcccccagcctcagtttggggttaaacttg tcctcctcacattctctcccacccaacttgatgtcgcctctgtgtcatcaccacgggattttcctcctctgggttctcct tttccgagtggggtcagctcccccatgagtcacagcaccaatcacttctggctgcttgcaaacccctttgctttcctcag tgttgacacccagggcagccctatgctcactgccgctgagaccccacctctgcccctggccttttcccagctgacatcac cctgtggcttccattttcctaaaattctcttttgaggcctcagtcttaaccaaagcacagtgcccctcaaaaatgaca ctggtgagaggccgcattagagggtcaggaccctcaggtctggactcgtggtcaccacataccttcctccctgctgacag tagctggtacctgttacctactcagagtgtcacatgccacaagccagagcgtcttggcagttctcagcaccttgacatca cttccttgctaccactcagagcggcagtgacacagttcccttatctcagaaggccagaagacggctgtcaaaggtcacag gaatcaacagtggtttctcgtgcccctcagggtcaggagcagtctgatcaaaaggagggcatccactgtccggggccatt cccacageteceggatgetgggtetggaggetgegecetteccetgeaggageteageccagtggtaagteatetgtgtg

tcatctatgtatttaaccccttatggccatgttgatgctgagcatgtttcacttttgcaaacatttattatacccttc gagagaaaaacgtctcagctgtcacaggaagctgcttcggggggtgagcaaactttttaaaaatgcagaaattatgatcta caccogtttcttaaaagtaagccatcgtacttggttctctttaattatatattttcttacatattgtgttcatgtaggca agtcctgtttctgctaaaagaaggtaagttctaccaaggcggtgtcatgccagctttatttcccgtggcacctggcacac tgctaagcacttacatgcttaacaactagattgggaatggtgctgctctggggaagtgggcacacgttaaagaaatgttt atttcagtcttctgaaatagggaattactctggctaaaatgtagctccagaaagggaaagtggggctgtatgaatccagg tccagtttgttgtttcctccaggataaggcagctgtcggaggggaaaatcatctcccatttctccacagggcagtctgaa gatggccaattacacgctggcaccagaggatgaatatgatgtcctcatagaaggtgaactggagagcgatgaggcagagc aatgtgacaagtatgacgcccaggcactctcagcccagctggtgccatcactctgctctgctgtgtttgtgatcggtgtc ttggactgtacttcgtgggcctgtacagtgagacatttttcaattgccttctgactgtgcaaaggtacctagtgtttttg cacaagggcaactttttcccagccaggaggagggtgccctgtggcatcattacaagtgtcctggcatgggtaacagccat tctggccactttgcctgaalacgtggtttataaacctcagatggaagaccagaaatacaagtgtgcatttagcagaactc ccttcctgccagctgatgagacattctggaagcattttctgactttaaaaatgaacatttcggttcttgtcctcccccta tttatttttacatttctctatgtgcaaatgagaaaaacactaaggttcagggagcagaggtatagccttttcaagcttgt ttttgccataatggtagtetteettetgatgtgggegeeetacaatattgeatttteetgteeaettteaaagaacaet tgcatcaaccctctcctgtatgcgtttcttgatgggacatttagcaaatacctctgccgctgtttccatctgcgtagtaa cacccacttcaacccagggggcagtctgcacaaggcacatcgagggaagaacctgaccattccaccgaagtgtaaacta gcałccaccaaatgcaagaagaataaacatggattttcatctttctgcattatttcatgtaaattttctacacatttgta tacaaaatcggatacaggaagaaaagggagaggtgagctaacatttgctaagcactgaatttgtctcaggcaccgtgcaa ggctctttacaaacgtgagctccttcgcctcctaccacttgtccatagtgtggataggactagtctatttctctgagaa gaaaactaaggcgcggaaatttgtctaagatcacataactaggaagtggcagaactgattctccagccctggtagcattt atctatttaatgtattttaaaataatttgtaagttgattttaaaaccaatttaactacattccaaattatagacagccca aggtaaggtaacttgttctgtcgaagttctctaaattctcttgcttacttgccacacccctaggcccccagcttccccta acccaaggtttctggtattttctcgtactttatcaagactatggaatcttaggagacttaacaaaagcaaattgagaaatt atgtttagaaatgtctaacaaaatgaattctttgtccttttaagtataacacatacctcaggcctcaccagcacataact acaaaaqqttqtcccacttcctttctgtggctgagttagtagaacacaggctcccacctgccacatcagcagaaggtcac ctcaacatgtgagctacctcccggagaccccccagatccgtaaggatgatgcatccttgatcctaaaaacattttcctg ttcctgqtgttcaqaattggactccacactcactggtctctttataatcttgcttctggccctttgaggcctcaaagcta cactgctgccgcactgcagggcaccagcccacactcctcctcctggcatcaggcacacgttcacggcactaaacctta agcatctcacatagggacacatagagatgtctgactcattaaaacccaagtctctggccaattaaaaggggtccttaatg tcctactcaacagtggtggaaggaaatttgctctatattgatgaaatgaggtggagaaaatctgattttccaaacatgag aatteteeatatgecaccccataaccaaagaccccttatttgtgttagatgaaacattcaaagagcctattaggatagcg gatgagacccccaagggacatgcttatacaacaataactggctccaaaccactccatggcagtggctctcaaatgcca actcttctctggcaccttatgccactcattgagggcttgtagctggctctgctctttcagagtcataatagggctatggg aatggcaatttttctagcttctaaaaggttgtggagcaactggaactttcataccctgctggtgggaatgtaaaatggta taatcactttggaaaaattggcagtgtcaccaaaagcaaagcctatacctactaccatttcactcctcagtatttaccc gaaaaagtetgtetateaacaggtgaatggataaacaaatactggeetgtgtatetaatggaataetgeteateeacaaa tttttaattatttatttatttatttttgagacagagtctcgctctgtcacccagcctggaatgcaatggtgtgatc ttggctgactgcaacctctgcctcctgagttcaagcaattctcatgcctcagcctccaagtagctgtgactacagtcat gcacaagagcaactgactaatttttgtaattttagtagagacgggggttttgccatgttggccagctgctctcacactcct gacctcaggtgatccacctgcctcggcctcctaaagtgctgggattacaggcatgagtcaccgtgcccagccggaagcca aatcagtggttgctggagatgttggaggggagaggaggagtgatagattgcaaaggggaacaaggaaattcgggggggacag tggatatgtctgctattttgactgtggtgatggtttcattggtatatacatatgtcaaaaacgtaacaagttgtatacgt gatttattatgtgttgactatacctcaaaaaggctattttttaaaatccccctcaggctccaggcactccattacgttgg tgtgacttgtcttggaaatatactttgagcatttgccggaggagatccagtgcctgggcctctgtttcttctcccaagta
gaattggcagctaaaacgggatgcccatgggcacaacttgtcacccccatcaccgaacagggagcagaaggaggctgctg ggggtgcccccacagggagcacagtctcatcgggaatgacctgccatggcaaataaaatcaccagggcaagtcaagggag gtgctgaatgacaccagccacaatggcctgaacacttaagtagtgtaatatacttggaacattgacagctaacaaggtct tcctcccatgtcagaccaagaacacagtttcctaaagataaaaatagcacatgcttttccacttttccataagtgactgc attagaaaactaacaaaccatgaaaagcaaaatatggctagtctcttcaagaaaaactggtgtttctattttgtctgtaa tttgagatggagtcttgcgctgttgcccaggctggagtgcaaaggtgtgatctcggctcactgcaacctctgcctcctgg Ltgtttgtattttttagtagagacagggtttcaccatgttggtcaggctggtctcaaactcctgacctcaggtgatccac ccacctcggcctcccaaagtgctgggattacaggcgtgagccactgcacctggcccggaactagttttaaaacaggaaac agttgatatactgaatggaaaaacaatacaatttgaagttgaaaaaacaaaataagatgcccagttaaatttaaatttca accaccttaactttaaggtatttattcatttttaaaaactaaatatttttcggcagtcagaactagagcaaagataaatg

 $at cocaggact \verb|ctgtttagcaggcagtcaggaagtgtgacagtgtggtggtggcagcccggccaggcctttcctcttccaggactgtggtggcagcccggccaggccaggcctttcctcttccaggactgtggtggcagcccggccaggccaggccaggccaggccaggccaggactcttcctcttccaggactgtggtggcagcccggccaggc$ cctaaactgccacagcaggactgccacacttgggaatcccagtttccatctgagcagcccctccagagtttggaaggagt cagtgctttagcctgaggagccgtggatggctctaacactttgcttgtcggttgaataaaaatcaacccaaaggtggcct acactcattgaagtaggaatgccagaacttcagtggtgtcacatagaagaaaatatctaagtgcttagggagatggcagt cacaaagtgcaggtttgttacatatgtatacatgtgccatgttggtgttgctgcacccattaactcgtcatttaacattag aattoocaootatgagtgagaacatggggtgttttggtttttgtcottgtgatagtttgotgagaatgatggtttocago 10 ttcatccatgtcccgcatctttaaaaaaaaaaaaaaatctctaagtggtggctcttctctgtagatcaggagctgtagtg agcaatgotacaaaactggagtttotaaatacaggggggatggtgggattotgaggaaggacaggccacgtggtaacact tacaaaagaccaagtgggtgtggttgccactgtggacggtggagccaaagcagtcctcagaatagtctgacccccagagg tctttggcattggctggttgatcatggtgtccctggaattgaaatagaaggacggtctactaaatttttacctgatctgt ataagcagaagagttctatctctagtgaacagaagtctaactttagtcaccagaactgagagtcaattcaattccc 15 catgcttgtagtcccaacactctgggaggcgaaggtgagaggatcacttgagccaagcggtttgagaccagcctgggaaatatatagtgagaccccatcttttaaaaagacaaagaaaaataaagaaaaattgacatggaaaaataatataaaaatgtgaataa 20 tctcacatctactaaagaaattcaatctgtaattagaactcctcccacagagaactataagcccagtgcccccatcaact ggagaaacagaaagaaacaatcttcttaacagaaagcataattggaatagagatactctgcatcggggaagaatccccat attgattctctgatccatagagtgaaggccaagtggaagcctttggaactccctctacctgccaagatactaaacaaaac 25 aacactgcacgtctggaggaattgtagcaagaacttgaaagatgaagatgatgatgtccacctctctccattcagctca cctatetggtttgtgcagaagacaaataggtgttggaaaatgacagtggaccagtgtaaacttaatcaggcgggggctcc agctgcagetgcaggatcaggtgttgtttcatttctgcagctaatcaaccetteteetggcaeetggtgtgcagatggca atttitetttetattatetgttagtaaagaetateagaagetgtttattteagttggeaaggteageaataeaeteea 30 taggaacaaaaggaaggaaagtacacttggaagagggccaagtggacgacttaaaaagcaagtgcgtggtttgacctttt gacttggggttttatacgtcagcatgctttcggggtcttgcgttatttctcccctggttcttcccttggggtgggctgtc ccatgtgcctgcctgagcccactggctcaactcctgagatcttatagggaaactactgctcaccagtttcgagtgttttc 35 tatctattaggagccggcttttccctgttgccgggtgtgaccaattattactttagaaagacagtcaacaaccgccagac tcaccccttcagggtcatgatttttgctttttaccgcaggtacccataagcaaaacatggcattgttcaccatgcttta 40 tgtggtaaaaatcctgctactagctcattttgcagtgtctataatgacaggtaatgctccattcactcctttatgacact tgcaaaaactgagaacataacgccccccagttaagcaggcatctgggcaatgtgaggagaacagaaatagacacgctgc atttatctctcttgatgacaggcattgagatttccacttttctggttacttattatgtctctactgggcattcttacat acatcttgcacgccatggaaagtttctctagggcagtggttcacaaacttttttggatacagaatactttatgtgcttga aaactgaggaccccatacagctttagtttatgtgggtgtaaggttctagcccaaactgaagtccgaagggagttggtggg tgggtgaggggtagctgaaaaaacacccgaggaatcataggcagtttgaacatggccttatcctctctgggcacgagc catatytecaytytcaycaygytaattatacettttacayacaatayaygetetyaaycaatcacyayetcacytyayty gtcacctaatgcacctcaagtggcatggttcataatgtgcggagtcgtgtgcctacgctccaaacccactgagtcatggt gcaccaaaaagtggcctcagcctgctcctgactaaagcgcagccatcttccttacactccacccctaggccaggggcatc ctccaggtagggacatgtgcccgtagggtggagccctgaatccataatecacagcaacaatacggagagcaacagctcat gactaggattccagctatgctacttatgactatcagggcccagcgtaggccagagcccagggatgtctaccatctctgca gggggtcatcagtaaggctcttgactaccttaatctcctgtgagaccccttgcagggctgctgttatgttctgccaattg tcagggataaaggtacaacattgtgttcctaaaagggcacaggtgcctccttaggcagcagttactatgtctaagaccat teggtitegeaacaccacctttetgatetgateaacctcatccaltaatgggaagagggccactcaggtgtaattcagag 55 ggtaaaaccaccagggtgctcattacacttgcaaaaaccgagagtgtagcacctcccagttatgcaggcatctgggcaatgtgagaacagtggcaggtacatgaggccaccctcaggtatatgccagttcaggtatatgctatataggtaaggccaccctgt gtccccacagacccataaactcccagggggcacacagtccatcgaggccccttggtggggccgcgtcttccaccatacct 60 agggcggtgcagatccaacagttggaaacattggtcacttcagtgtagggtgtgtgggcccagtccacaatgcagttggagca tgttaacctacagttggaatgacagagtaggcataggtactaacagaggaaaatcacatccctcaggtaaaatacaggct aacotttcatccctggataacaatgcagcccccaaggggttctgccctgggcaatagtaccacaccttttcagctcccca 65 tacaagtcatactgtaggccctccccacagggagctacgatggacaaccaccagcagccggggcttggaggggctatgg ccacagccaggttttctgttcccctgccttcagggacgttggggcagccaacaacaggttactgttcatccccatacctg gtcagaggcggttacccttgqtgtgtatctgcaactgaataggggtggtggcccatgtaacaaagcctccacctgggctg ggctgcttttccatggccattcattcaaggtttggagcatcaggtccagcctggaacttcagccctgcaaagacaggagt gtgacatgcaagtaaaacccattottcaagagctcgctatatcactcaatcatacccacagcttgcaagttgtgcggtac atggaatccctactttatgtccattgttgtgcctgttgtccagtaaaatgtgtccccccatcactctcaatgaccaaaggg caggcctgtggctgtgtccacagctgttagcgcatgagtatacccttgtgacttcggcagcagcccaatgtagtctactt gccacctggtcaagggcacttgccctgttgtcacttgtgtagcactggacagctgcctccatttagggtatgcctgagca cagtttaccccctgcatgtcccagtttccggtgtagctacaaggccacatctcatgtagatgccaactctaaccatcgga ccttggccaaggcttctgcctcgtcattgctgggggtggccagaggcatatggcctgacaaatgataaatagttacatcttgcaatgaccatttcccagaggtcttgctacatgggttggtggcccaaatgggttggtggccaactagccaattctg ttggtactaagttggactgcaacactggtccaagcaggagtagcacctcgactagacccatctgtgtgtccatgccccatc

aggaatagagggatgcccttccttaaatggcagtggctcagggtcaaggggtgcctcaggccccatggccttctcttctc ttaggactgcaggtcccaagacctcttgcaactctgctgctaatgggcttgtgctcagcgtactctgttgctccaagtaa gtgcctcactttgccaaagtggatgtctgcaccatcccagtctggggggtcattacacatgaatgcacccatcccgctgt caggtaagtcatccacactgtgactgtagcccatcctatcacttctcacaggcctgaagggcagcatatacagctgctag 5 ctatttctctatcaaggaataccagagctcagctcctttccatagttgggaccaaaagcctcctggcattctcaggcact ctgtgtgctgccacaggcccaaactaaaaccatctgtggtcacatgcatatccagttcaaatgggcaccccttgtcaaat acccacagggctcgtgcctgctgaatagcccacttggctgccaggaagccagtctcagccacatcagcccaatcccagat tgetecettetttgttaactgatacaatggttttateatttgagetaaatgaggeaggaatgteeaccaatateecagga ggctcacaaaagtttgcagctgcctcaccgtggtgggccagggatatgcctaaattttgtcaatgatagcctcttgtatg 10 gccttcatcttacccgaccagataactcccaagaatttagcaggtaatccaggccctcggaccttggatttgttgatggc ccaactgcatgctgccaaatgttgccacaagaggggtgccactgcttctaaatctgcaagagaatcagaggttaacataa tatcatcaacgtaatggaacaagtggactccctttggacattttcaggctgttaaatccatggcaacaagaccatgacat atggtggagctatgcacatagccctgcagcaacactgtgaaagtccattgtcatcaaggcaaactgttcctggctctcta gagcaaggtcaactgagaagaatgcattggccaagtccaccacatagtggtactgtcctaattccattgtcgagtggttc 15 atcaaatccatgatagatggcacagcttccaagccatgtaaaatatccacctccagaatgtattcaggtatgggagagac accagcaccagcacccactgtacattggtgggggaccagtggattgccaattccacatgtggcctctggtcatctggtgt gtatgcggtgccctcacgtatggggtgaggacagcagctagggggccaaaggggctcaggagcatcaacactgag tccctcatgtgggaggtgaaacatttatcatctggcctcaggtattcaggagcaaaacatagcctgccgcatacccatctc ccqaatqacttacaccaaattqqcatatqactqccatttactcacagttttgggcatttcaccagcattattccacacag ttcatatggctgcctgtagccactcagtcagggtgtggtctccttgcgctgccactaaccacctgctcacttgcagccgc tgacagagagaggggtgagtcatggtggaggccagcttgtccatctcagaggtggaatgggagtaccatctgctcctt gttccacagacgaagcatccaggcaggcagggttcccctggacactggcaacactgcttgcctaattcctgcaactcag 30 ttggggtacaggcaatatacgaaatgtgttgcattatggtggggagtccctgagtccacccttggagccccagtggctgt tcatgatctaccttctgtcagaccaccgggtgagcccgcaacaggggttcttcctccttggtatgaaactgagtggggat ctccagacaagatgatggacccaggcctgcattcatggtagcctctaattccttttccaagctctgaagccacacctcca ggcatcctgcctgcacctggaggtccccattcatggcagcctctaattattttccagatcggtgtagccagacctccagt ctgcatccctcagggactgggtgtgtacttttcttagcacagttaaaaatgcccatccaactctgccagcaaaggctctc 35 tecttettggtgetetgeacttecagetgetteagegeettetecatgeteatgggggacecatetactgecacecaggt ttccactcaagcccaccctcacagcacggctaccaccgggtaccacaacccatgttgtggtcacatggccaacctggaat 40 acaggttaacataattaacatacttttattaaaaatatctgtattttttaaaaagaaaaaaattagcaacaacagtgatc cttggaatcgtcccacctcagcctcccaagtagctgagaccacaggcgcacatcaccatgcgagctaatttctatatttt ttggtagagatgggatcttgccatgctggccagggtggtctcgagctcctaagctcaagtgatcctcctgcctcggtctc 45 tcattaaaatagtttgacctcatggacccactgggtcccatgtggagaatagctctaagctaaagagtagaatggctggg aggggacataaacattcagcccatagctgctgaccacaataacacattttaagtctcttcctctcctgctccttgtgatt 50 cagcaaagttaagggacttacccaaggtcacacagccacacagcagagctggggctgagctccaggtgtcctgctacaga ggccacttctttctcccactagggactggcctgtgattacttcagaaaacaatggtcagctaactgattctgaacgccct ttgctggtaaaagctaatotootgaggaaaaatgtatgcattggotgggcgcagtggctcaagcctataattocagcatt ttgggaggtggagacaggtggatcacttgaggtcaggagtttaagaccagcctggcagtcatggtgaaaccccgtctcta 55 ctaaaactacaaatattaagctcggcatggtggcaggcacctgtaatcccagctactggagagactgaggcaggagaatc gcttgaacccaggaggcggaggttgcagtgagccgaggtcgcaccactgcattccatcctgggcaacagagtgagattct caagaccccaaagcacacaatgttctttctggtatgagtgacatggggttcacagcaccacaaagtccatgacttttccctcagaagtgaatgcatggctaattatttttgtattttttgtagacatggagttttgccatgttgcccacgctgctctcaaattcctggactcaagtaatccacgcatgctctcaaattcctggactcaagtaatccaccacctcagcttcccaaggtgctgggattacaggcatgagacaccgcatggcctgcac 60 teagcacegaggcaceagetgcagataaattteteacetaaaatgttgagaagatgttgetaacetgteettetagga teagcacegaggcaceagetgcagataaattteteacetaaaatgttgagaagatgttgetaacetgteettetaagggta tgtataataatacggteetgcgatactgaataagactatetgttteattacatectcacaatactgaatateattagca acttgaattttaaattgtgctaatcaatgaaaatgattgcctaattactagtgagttgaggttatttaacattaatactc cttctgatgaaatattttgcatttatcacattttacataaattctctctatataattagcactagaatgtccgacttggt tttcattqttcctcacctqtttqqaaacacattaagaatqagqqaqagaatqqqtqqqqactcacctaqqqatqcatgqa 70 gctggtcggcagccactctgaggccctcttaacacttccccaccaccacttaatttcccctggtttgtccatagataca tccaacaatttttatgtaaataagaaagactcagctttcaatggaaaatggtaggttggattttatgactgaagtggcaa aaagaaataagggattttattatgggggaggtccaaaccctggtgaaaaacgaaattcattgaaattgtttgaaaattca aggattaaatcagattattttggattcagtaggaattagattactttaaagccccaggatactttattctgtagaatgca tggaaagtatagaaaagagaaacaaagaggaaagtcatggctaataacctggaaggggtaaatagggagccaaaggcct 75 gtgggacgtaaccaactcagcattccactggaggctttatgatcaaatagcaagctatttatcatgaatgcaggatgtgg gcaaactcacgactgctcccactgccagaaggtttgctgagggcaatcacttcctggcaccgagctccttgaggttatct actgggacatetggagaatgcagtettgcaageetaetetggaceeagetgaceecttetteeatgeeeetetteet gctatctctttttgcctaataaatatggagggctgtgtaaagctcagggcccttgtccactagaggcaaactgcccgctga ccccttcttccaaatatgctcttttgtctcatgtcttttattcccgctttcaccccactttgttcagtccccctagggcc gtgtgggttacatagtggcgccctgaacagcgacagaatcaggtgctctacaagtggcgtccgaacacagggactatgag gatgtgaatgaagaagatctgctggagcagaggaattgaaattgacaaggtgaatggggatcccgggacaagtctgccgg cagcagatataaggtcagtgccctaaagaggtactgggagcagtgccttaaagtagtactgggaatgggaagttttctga

ctcttgatgtagaaaattgggatagagcagaaggattaaaacaggctcatcaaaaaggttttcaagttgattcttcagtt ttotccacttggagtttagttcgtactgtacttctgccattatctccttgttattctgcgggacagcaggctgaatgtaa taccgcccctccagttgcagaaacatctgtaccgcctccttcggtggcagaaacagagaccccaatacaaagaatttta cgctctgccgccacggctggagagccttaggaccttgcacttttcctatttccgtaagtcctgatccaaataatccaca agageceatteaetttaggattgetagaatetatgtttggtgetatgtgtettttaeeetttgatgtgaaacaettggea tgaacttgcttgtctgctagcgcatatctgacatggaatttaaactggcaagaacagggtgcagaccaggctagacagaa ccatgctgctggaaatggagacattacagaggataggctattgggtaatggcccttattctgacctggtacatcaactag cactcacaaatgctgcttatcagcagtgcacacaggctgctaaatgtgcctgggccataattcctgaagagggagtccca gtactatcatttttacatatcatgcaagggtcacaggaaccctacgcacaatttcttgcaagattacaagaggcagtgag gcatcagattcctcataccttggctgcagaaatgctaacctttactctagcttttgagaatgcaaatgcagattgtaaat actggcatttggggacctttaccagcaggatatatgggactaattttaggggacaaagccaccttaacttgcaaaggcattt ctgtagtccagaagttgttgactctgattatgaaggagaaattcaagtagttttattgtcacgagatcttcgggttttt gaaccgagagaatacataatgcaattattacttattccctgcaaattacacccttctccatgaaaggagaaacaaggaaa aaattaaaggaaagaaattttatgggtttatggataccggagctgatgtgtcagtgttaccagcaggtctttgttcttag agctcccaagatggcggcaagccttttgttctctgacctggagttcttggcctcacagattccaaggaatggatccttgg Caataatgacctctggcgtttaggctcaatgctcagagctaattgcagtcattcaggttttacagctcacagcttcagat cctgtcaacattgtctgtgttcagtttatgtcgtaaatgtagccggtcacatagaaactgctacaattaaaagtacgcta aacccagaactgctaatttatttttaagacttcaacaagttatttgttctagtgcagctccttttcatatttctcatatt ccttctcacacacacacttcctgggccgctatctctaagtaatgagaaaacagacaaactgattgcctctgtgtttcagca agctcaaccatctcatgtgcttctgcaccaaaatacttccgcccttactcacatgttcctacaggtttgtattatattatgcagtatatccctcgagccacacctatagaaggatgtaatccacgaggtttggctccaaatgaaatctggcaaatggatg ${\tt aaaaactgaccatggacccgcttatactagtcatgcttttaaaaatttcttgcagcttttgggctataacccataaaacag}$ gaattccttataatcctagaggacaaggcattatagagcaggcacatcaaacattacaatgcatgttgaaaagacaaaaa gcgggtataggaggccaactaccacctcaataaaaactacatttagccttatttactttaaattttttgactcctggtat atagatatggatatagatatagatatagttatagatatagatatagatatacactttaagttctagggtacatgtgcacaac ttgcaggtttgttacataggtatacatgtgccatgttggtttgctgcacccatcaactcatcatttacattaggtatttc tcattgttcaatttccacctatgaatgagaacatgcagtgttttattttctgttcctgtattagtttgctgagaatgatg gtttccagcttcatccatgtccctgcaaaggacatgaactcatccttttttatggctgcatagtattccatggtgtatcc ttatgtctttttgacagctaagaaggaccagctccaggtaaacaatacccaattgacctgtaaatcttaccaattatatc actgcattaatcatagcacattgcaaacacataatatctctactttgatgattttaggccacatccctgggctatgtatt cctgttaatctgtccgaggcttgggctgccacacctgctttgcattttgtgaaacttcttctaactgagcttactcatca tgtctgtagagocttagacataatattttagctattgtttccttggtcgcactaataacttctgttgtgatgtcctctg tagetitgeataattetatteaaacageteagtacatggagaactggacacacacageegaccaageatggetaetteag aataaaattaacactgagttacaaactgaagtggtgttatgggaagtcagggacccccaaagagagggaccagctggagcc ttatgcctgtctttaatctcttaatcctgttaccttcgtaagctgaggatgtgcatcacctcaggaccactgttataatt ttttgcagagagcctataaatgaatgtgcaagtaggaaacatatcgctaaattcttttcctagcaaggaatattaatatt ataaggactgagatacgccctggtctcctgcagaaccctcaggcttactagagtggggaaaaactctgctgtagtaatt tttggtcagaccagttttctgctctcaaaccctgttttctgttaagatgtttatcaagacaatacgtgcaccactgaaca ttcccccgatatgtgatgtcacccctggtggcccagctgtaaaattcctctctttgtactgtctctctttatttctcagc tggccaacacttatggaaaataqaaggaacctatgttgaaatactgagggtgggttctcccaataaaqtggtaatgttga aatccacagttctatggttaggggaaaagcacaaagcttgcaattgcagcagcaattgcattgtcattttaatcacactc atatttgtgtaaccaacttagaatataaccaaagtgagtatctgtgggacgttgtgaaagccaatttgcagggagctttc acatctaacatcacctttgatattggtgaattacaaaacaaaattcttgatttacataggcaaattcaagagtttctgcc ttotttagaagactggaccaaattccagcaaggcctggagagcctcaatccttggacttatctaaggcactacattaaca 75 aaggctcgtgggactgaccaactcatcattccactggaggctatatgataaaacagcaaactgtttatcatgaatgcagg atgtgggcaaactcacgactgctcccactgccagaaggtttgctgagggcaatcacttcctggcaccaggctccttgagg ttatctactggggacatctgggagaatgcagtcttgcaagcctactgtggactgagcagctgatcccttcttccacgcccc cttctcactatctcttttgtctaatcactacggagggttgtgtaaagctcagggcccttgtccactagaggcaaagtgcccctgaccgcttcttccaaatatactcttttgtctcttgtcttttattcccacgtttgcccccttgttcagtttcccta ggtccatgtgggttacatagtggcaacctgaacaatgacagaatcaggtgctctacagaaataactttttaaggaaagat ttgggacttagagaccccaggagacatacacaaaaatgataagaggatgtgcccaaaccagtcttaaagttgtggcacag

ggtgaggaagatgaagctgttactgaacctcagagagtgactggtgttacagcaaaagttagcaatggcctgaagggagg gtttctgaaatcaaatatgaatgattccccctcagggaacccaaccttgggaactactgcatggttctctgtatgggaaa ttaagaaaataaaggaataaaagaatagcactccataggcagagcagctcctttttatattttcccctctgctcaagcccaacatgcccaaaattggggctgctggttcagcctgggtctcagaataaagacatgagccacagatccattgct gacccatgatggagatggacacaagagagaaacacatttttgtcatgttagccactaagattttgatttggaggccattt gctacagcaatataacctagcgtgaacagagagacacagcgatgttccatttcttttcaacctggaacaggagaatttca taggtgggcctcaatttcacttttagtatcttatttagacaagaaagttcatactgttcaaatgtcatgtttaagagtgct ggcattatcactgctgtggctaccccatcagatgttgctcactgactaatcttctcatgttagtgaggatggacaacata caggtttcagaggcttttgcaggcagcagcagcagctattcatctcactgacagtggggaacatggccaaatggttgcccc cacaatggaggcagagtttcaggacacttgtctgatctctgcccttgaaggaacagtctcaccctgattgacacttttgc gtetteacttetetetetetetetetetetacttagetettagaaatgcaattataatettttateteeeetteac agactaccttgagacataacagtcaattcacaagccaaaatatgcccgctatgaaactctcccatctggaaatttttttgg ctgcttttacaacctagttttgcccacaaaggcaccagcagtaaccaactcaactgcctggtagaccaaggcaccaaagcc agtacccagaccctctacctgctcacttcctgccttgcatgccacgcccccatttaaaagcctctgctttctgctccaa aggtgaagcagttacccttaaggaaagaagcctgtacttcttcccctaaggtagctttggaataaaagtcactttatacc aaacctagctcttgttaattagactctgcaagtgatgagcaactgaacctacatttcagttataattcctatgcttgttc aagaggagggctggacctgaaaaacttggaagggaaggtccaactgtacaggtattttgtcaggcatgtgatttcagta taaaattotagaaaagatgagtgacactttataaggagagaatatcaacaaaatttotcattttacttottgotaagacg acagcagggaattgtaagcagatgggcaatccccaccttcagcaggggaggccaaggccccaacacctggggag aagagctgggggcagtgaatggctgaggctttcttggggagctgggccatcttcttcggttttacttcctgaggaattca caggcttccaggagggctgtggggacacaacagagcaagagattcagaaactgattcttccattaaaccagttattaat ccaataaatcaaagagaatactaagagttttctctgcccttctccatcactgagtcagtgcttgccacactcatattcc tgagcacctgctttgtgtgagttgctgtgctaagtgctggggacacagcatggatagactggcctgccctcaagaagcat gtggtctatgcagtcctgagctggctgctcacaagaagagccctgtagccatatttctcagagggtggtcctgacctgca tcacagtgacctgagttgtttgtcaatacagaaaagggtttctcaaccttggcactattgacatttggggcctgataata accetttattgeagggggetggetgtgetttgtttagtagcatccetggcetctacctatttgttaccagcagcaccetc tatgttgtaagaatcaaaaaaatgcttctcacattgtcaaatatcccctcaggggaaaaattgtctctcattgaaaacta ccgataaagacatttctggccctgccccatccttggaccaacagcatccctaatgcccccaactctgggtgagggacca ggaataggaatctgaatgattgcagtgcacagggagctgtgcacactgaaatcccacagttatcaccgggagccttacaa tactctgtgatgtcttctaaatatttttaagggattaaattaatatcaacatattccctggttaagatgtgttttccta cacttgaatttttttgagattttgtttttttttttttt ttttttgaggaagggtctttcggtgtcacctaggctgtagtgcagtggtacaatcatagctcactgcagcttcaaccttc tgggatcaagcaatcctcctatttcagcctctcaagtagctgggactagaggtgcttgacaccacaccaggctaattttt aaaattattittgtagaacaaggtctctctgtgttggccacaitggtctcaaactcccgggctcaagccatcctccacc aacagaaggtttttggtttcagactggaataagcaaaacttgtccgggcagtcagatccatttctcccaaatttagcctg cgacaaaagggcagacagtgagtagctaaggaaaagaggaatttgtgggttaaaggaggcaaaggggtatttcttccacc caagaacagcctgagaaaaccatggggcagaaggagctgagttctggagtcattccacctccttagtggagtcccccac cccacactcctggtggcaggcccgccttgggcagcatccaggcctcacaccacttctggtcctacctcctaccatctgcc atctttccttccttcatcatgagccttttcccatacaacttcttatgggtgacaaggcaacaatggaggggttttga 60 getcagecaetaaccagetcagtgtgcaggtcggtcaccetgcetcacacagttcctgetctgtcccaggetccca tgtggggagactgagacccaaacccctcagtcacggcagctetctcaccagcaccactgtgtgtgcacattaagagctcc ataaaggccagttatggtggccagtcttgttattcctgagttgttttcttcaaaagcacacagagacatgatgttatatg $\verb|ataaaaatagaagttctaataaaatcccagattttaagaaaattttgggatttcgttcaaatcacatttagagagcccta$ | aatctatagggcaccttctgagtttgctgttttagaggcctggtctagagcactgttcactcggcccaggttcaggaaat gtcacctgagtaaaaagcactatactaatgcatgtgggaggaaggctcagtggcttcctcatttgccagaagaacagcag cccagaaagcccagagtcaaaagcctctgttgttcttgttgacactctgggcaacgccacagcatgaagccaatactctc tagcaagacctcatctcaaaaaaaaaacccaccacatattatatgactccatttatatgaaatgtccagaataggccag cctatggagacagaaagtggattgatggttgccaatgctgaagaaggatagggcaatgactgataataggtgcaagggtt tctttatgggaggatacaagcgttctagagttggattgtgttgatggctgcacaactctgtgaatgtgctggagatcact gaattgtacactttgcatgggtggattttttagtatatgaattctacctcaataaagctgtttagagttcttatttttt aaagaagaaaaccctccacctatgccatatttttcagtgagttccagaaaaagaatagatggtttacattcaaggagaaa

ttggtttctcctccctttcatattcaaatgctattagtgtaaccagagaaaggaaaggaacttttataggtttatcaaat ggagattacttcagttaatggcttgtaaattctaaatgtaattgtatgcatgtctatgtttgtgcagatgccggctcatt ttgaaataatttcaaatttacatgtcttgttttaatctctgtcccaagagacactagaaggagcagaagcagaagggaga 10 acagatgttatcatgttgtctattgagataaagaattttggagttcttttaatcacaaatatggaaaaatgttataaaacc ttcccaaaggcaaatctgaacactaagatgtgttgtgatgccaaagactctgctttgaaggagaaaaggaaacaccttca cctaccatcagtgttctgcaagacagtgacatctttcacaaatgcaacgtctccagcattctcagccaggcacctaaaat gttccagaaaatatacacataattacagaagagaaactagtggggctttcataaatatttgtaatatgcattccaaaaac tgaaatatggaagtaaacatctaaaagacaactatttctaggaatttactgtttacagcggcagattgaacacaggtgta cctgccctccttttaaaaccctatataaaagacattacaaaaccaagaaatctaaagatatgcgacccaggaaacaggca atctaacatgaagtaagacaaaggaaagcaccaaaataatggtcaacaggacccccaggaccacagatgtgcaggcggcc gtgtgtgtgtatgcatgttgttaggagatttacattactggcagacagtttggggatgagatgagatgtgtttttttaa gtgcagaaaattaagcaaataagaaaagacatttatgaactccagagtaaacaaaaagtttgtacaataagggaaatata atatgagaataacgcttacacagtcataagtactgaatatgacattagcgtgttgggtgctgaagagttgaagtctgt ggttgtgtggtggaaaaggtgctgggggcagtgtgagaggctagatcttcttctatactacagagtcagcagaaagttaa aaattaagaaccagcattataaggatgatagaaataaaggggtatgacactggtttcagcttttaatgattttgctataa atttccccaatctagattctagatataatttaaacaaagacaagggattttcttccagtataattaggaatattaaaat cattcacaaaacattttttttttttgttttgggtctttttttatgagccacttatatagcaaaagctacttttctgtcattcc attactggaacaaggctgttgaatttatattaaaagttcagacacctcagacacatgacgccatctggtcgtgaaatgtactcttggcaaatggcaaatgggaaaaggaacaggggaagatcctctctgcacccttcacactggtaaatagtgcccctgagaagcaacacccggatgaatggtgctgtaaaacgtgggtgtggttacaagtcactaagtggttataaacttatgaattctgaa aacttgttttttggcttatttttcacttcgttactggagaataacactgcaattctgcatctctttgccatttctagg ccaaagtcagagaaaaagggaaacctaagccatagtcatgacctaggtgagaagaaaaggggcggcgatgggaaagagaa ttcttccccataaatggaattgtaggaagcacttaggataccacactctacccatttgattttcaggacqaqqctattqa ggcctactgctgttgatcttggctcaaagccacagggagaagcactgcggagctgaggtcagacagccctggtgccagcc tccactctctggggcggtgggtgtgggtggggacagccctcactggggccacccatgagctgacccacaggatgacccca ctctgctgtgacaggtcacatctggctccttagaactgcaatgctgacatgctgagggatgaggtaagtcccatcctga 40 caccctgctcgtcgccaatacacagagcacagagattagatctcgggtcagacccaggggcacagctttgactgaaatat teatetggagagaaggaaeaeggggagteagetetteaaaeetgagteeaeaeaageaaeetttaeetaaeageegatge accaacataggacccaccagaaaagcttcattcagactgtaggcacagatggacacccaactaaggctggggatgagagc tgtggctgcctggagggtcccgtcatcacagccttgagctggggactcagctcatgaccgtgatggctgtgtgcagcaga gcctgtgagttgcctagtccaggatctgattttgttttatcagtaatggaaaccctgctttgtatctgggtgcttggcc ctttggtataaagactagacttatcagactccctggggctcatatggccatatgggtagctataggccagtgaaatatca gcaggagtgttgggcgccagcttctcagaaacatccttgaaagacaattggtacatgccttttgccctttctccttc agtgtggggtgtggggggggggagaaaactgcagaagcaggtggagccaggctcttgaggtcttattcaggctccgttgca agccagagtttaagaggaatttaggtctggagctccaagaggtaaaaaagcattttgcacatcttggaacttgcatttattc ttagggtgcagcgaaataggcagatattccaatctttaatcttggggtggggtgaatggggcatgggaagtgctgtgcag ggaaacccccagtgcacccacgcctccagggggcagccacagggagaatttccttatgctggaagaggcctgcaggccac ccgcacctttggaactccttaccaaatttgcaggagccgtctggttgaagagcaggccatgggatattccagcctgc agtectgtccacggcggtgtggcaggacttcttgcctttcacagagttccaggtaaggctagtgtctgatctcctaacca ccgccacagcaagatatcctggcataacagatgacagaaaaacaagtcttaacctccaggaggcctggcacatggattcc agtggagctgtctacagcccaggccaaaacaggccaagaagcaacaccaggcaatgattccctcaaagaactggcctttt taggtagaccgagaaagcataagctgctgccttatgttaaggtgagattgatgataaaacagtaagaaaagctgatta ttttagtgattacaggggactgtcttcaaccagccacacatgtccctgagttacaaaccagcaatgcatctctcagtgt acttcctcttccagcaacaagaacttatccttgaccctgaaagtggctaatgccaactcaccttccacaggtctatccac acagttaggatcagggtcactgctttgttgggattctgaaagaataaagacaagccagacatcattatccattcagatgt agtgagaagccacaaactcttaaatctcaatgatgcagaatcaaatccaaagagaccgtcccagcagttccatqcaggag aaatgcgtctatatgttcaacaaaagacatggcacagagattcacagctgcattattcaccacagccaccaactggaaac tactcaaatgcccatccacactcaaatgatgaataatcacagtagactcacacagcgacgacgactgaacagtctacaact acacacttaggtggatgaaaagcataacgatgagcaagagaaaccagacataaaaaaacacatgctgtgtaattccttta

gtgaagtgccatgagttgtacatttatgtgcacttttctgtttgtatgttataattcactgagatcttctggaaaattaa gaagataaaaccaacctgtcccttgttaattctcaacacaataggctttgtgggtaacacggcccctttcatttcttctt tccctgattctcccttttgaatgtatctgttcatcataatgtttcacctgcattcaccgaatgggattactcatagcccc acteccatgacccagagggaatataccagaggatgctaactccacttactgtagttetctgccaggacaggcaccaaacc acatttgcctgcagtgtacacatatcctccatccaaactcatggcatcagcttctcctttctgcaaagacagagcagatc tecageaceacagtgaggetgeatecegteetgeetgtetatatagetetetgagagaatggttttetgteaggtgaeca gtgaaacagcagaaagagatggactattcaaactgagcagcagaggaaacaccgtgtgcaccactaattctctcccagc ttggcccaccaccagaatgaacaagtccaggctacaacacaggatcatggactcatcagtagtatgaaacttcctctttg acccagtaatatttttacaactatattaaaaatagagaagtggacaaagatttctactcaagaatgctcaccacagggtt attgataatagcaaagtaagggacaaagaggaatggggcatgactaaactgagccatattcacataaaagatatcctgg aagcatgtttaaaaaatgttttcgtccgagtgctgtggctcacacccgtaatcccagcactttgggaggccgaagcagga agattgcttgagcccaggagttcgagacgagcctgggcaacaaagcgagaccctgtcgctacaataataataataataataa tatgcaggtgtggtggcgtatgcctgtagcccagctacttgggaagctgagatgggaggatcacttgagcccaagagtt aaattaatgctttccaagagtaaatattcatgtggaagaatgcccattatacgctgtttagtgaaaagggcttaaaaacg acatactgcaacacttcattattgttgcatgcatatctgcagatgtgcagagagaaatactggaaatggagaattagccagac tttaaccatgtctgtccctctgtgtgagatcacaggtggtttggggggtttgttgttgtttttgttttaacataatacctt tocatattttccaaattccttataataatcctgagttgttcttataaccagaggagtgggaaacccacagtaaactgcttttgaaactaaaatgctttctggccctgagcacacctctccaggcatccctgcctcacccaggcccccgtggcctctttg 25 ${\tt actgttgacttcactttaagcagatgcccaggccctaggtcttccaccgggcccaccgccccctgtgatggagctcc}$ ctaccagcaccagggcgatgcagtcctctgtggtggaggccgaggagcaggtcacgctgccttcgctcaagccactccac tggttacacttgcgcagctcctgctcgcccaccgcacaccacacgcgccacgcgcgggcagccacttcctcacc 30 gtgtccccaactaagttcatggtctgggcctgggaagtgtgggttaaatccaggccccggattcatccaggagggtcct ggctatctttgttcatgttcatgttctcacttaataggaggcaaactgatttttctgccaggcctggggagcctgacgt gcactgatcaggtggccagactattcttttagagacacctgacctaatccacagaagacactcacacctgcatcaaacct ccacgatgaccccacagtgtctgggaaaaggagtgaccgccacaaagtagggccacctgctgggaagtagaagaccacac caggcggacctcaggaccctcctgggctcactcacttttcctcaagttctggatggcagtgaagtagccggagccaaggt acageccagaatetateeteggggggeaccetegaaaaeccaatggeagagteettgaacageagatetttetgeeeacta ggggagccaaagagctggaatttcggtgacttgtcctttccaaacttttcctaattaagaaaaaaatagaattatggtgtc aatggtaaatagggaggaaccaaaaaaatgatgttaaaaaagagtatctggagctttgggatcattctaactgagagcag gagcctcggttgagaccctcctgcagagggacttgtgccatctcggagacccaagctcagctatggctcattctttgaag agttgctgaggtccaagcaccttagggccctgagaagattgcatcgaccaccccctgcttctgctcccatcataagacgc tgtcagcccgtgtgacagaagagtttcattgcttctgctgtccacagtacagcctgggcaagcagcccaatgcattagtg atccaagcaagtggggaggaccgtgggtgaagatacctgtgcctggggagaagatacttgcatt tcacacttcgtgccacaacggcattgagaagggacccggggcagattgcattctttgaacttgtccactggcttccgagtg ttgtctgggcagagtaactcatactcgtccctttcagcctcgtctgacaggtcctcttgaaggtaaggtgaaggtggaggg agtctagataagccgactccagcagtaacctcgagctatagttccccttctccctatagaattttgagcttgggagata gctgacaaaactgagggtcagaaaggcaggggtttgctccagaacactcagaaaggtaaaggtagtgccccaaaagcctc agggggcagccgaggtgtgatcctcatcctaaatcacttaggccaccctggggttcccgtgcagctgctgcctggcaggc cagagaggccaaaccagaccgtctgtttctgcggcatctctgcctggaaaagtcactttgcagagacaaagctcagggg ccaccaagggttgctcccttactcacatctctgggaagaataaaaatgacaaaaatgttaacaaggcagggaataaggca aataacgtactaactaactcaatctcacagagtatttaaaaaagctaatagattggaatgaaggtttaccagtgtattcca ttaacaaaagaatggctgaacatcaaaaaaactaaagtaatctgcatttaatggcagaaaaccatgagatcgtcttcatc 60 tagatagaatcggtaaagtttttttgtttgttttgagacggagtctcactctgttgcccagcctggaatgcagtggtgcg atetcagetcaetgeatectccateteetggagtcaagagattetettgeetcageeteecaagtagetgggaccacaag cgcacgccaccaggcccagctaatttttgtatttttaatagagatggggtttcaccatgttggccaggctggtctcgaac tcctgacctcatgtgatccacccgcctcagtctcccaaagtgctgggattacaggggtgagacaccacgcctggccataa gttattggcttgataaatgccattaatctacagcaaaaaccttactaaaagaagaaaatgtagacattcaccgcaaaatc aggaacaaggcaaggatgcccactgttacaatgccagcacaattctagatatccagatcacacaatttacaaaagaaatg tgagatataaacactggaaggaaaaagacacactcttatttaaaaagatgatatcgtcatctacaaaaaaccaatgaaac caacagaaactaataaaactactcagaggagtaacaagttataagagcaacctacaaaaatcagatgttatcctcattaa caataaccaaatagaaaccaatatggactataagatgttacaatagcaactaaaaccattaagtagctaataagtagcct cccacaaagacacatcagacccacaaaggaaaaattttagttctatcaaagaaactaaaaagaggtgtgatcaaatgggg gagatttagcatcaccatggactggacaacttaatgttataaatatgctgattttcatggaacaatttaaattcagtac aggaacttctgtccttgaatcaaaatcatgcagaaacaaggtgtgaaactcaatttaaaaagtagtcaaatgtcacaaaa taagaaagggaagcccaaacggctagcaaatatgttgaaatgatcaaactcaccagctgtcagagaaatgaaaattaaaa ataaaacgaactatctattgcattacaaccatcattcggacaaaaagtatgaaagtcaaaaatacttctaactgaagttg

gtgggtgttgtctctttctctggtggtcctgggtggatgtggggtgtgtctctgatggtcctgagtgatgtgatgtct gtcactttccctagtggccctgggtggaatatagtagccctgtctctattggtcttgcatgaaatgtagtgagcttatgt ccactagtcctgggtgcagtgtgtttagcctctacatactcatcactgctttattataagtccaggagggacgctgtcc ${\tt agcaggtaagtaaggaacacaggtgaaggtatcagtcgtgtggctgcatgtggtagaggaaaagaggcacaacctctgt}$ ccatcactatggtgacagagaagtaaaaggtggatgtattccacggaacactcctcaactgttaggacccctgagctaga catgtatacaacaataccgataaacctctaaaacaaaatgctgagcagaaaacccaagtagcaggatttctaatgctcac taaaacctctatgaacccagaaaccggaaacacaaccagcacaatctgttctgcatgagcacatgtgtcttggaggact taggaatctaattagctcaaaggtcagagtcatgatcaagtaagataaaaggggtcagtacccacggctcattaccctgc tcttaccaaacactgtgctctctctgataaaagccacgtctccagccccgtctctcagacacctgtgaaaagagaaacca tcaggggtaagcacaggcagccctcccagcccctccctgtggaacagtagccctggcactcagcatctatgggtttcta (SEQ ID NO:12041) aaccatcaaaatqttttqcacaqcaqtcacqccattttacatttctqccaqcaatqtqcaccaqqcttccaqtttcttca catcttcactaactcttatttcctttgctttaaactctaaccatcaaagtaggtgtaaagggtatctcactgtggtttga tttgcatttctctaatgactaatagtgttaagtatcatttcatgtgcatgttggccatttatatgtcattggagaaatgt gacaaagteteaetetgtegeeeaggetggaatgeaatggtgagatettggeteaetacaaeeteeateteetgggttea agcaattcttctgcctcagcctctcaagtagctgggattacaggcatgcgccaccacgcctggctaatttttgtatttt ggtagagacgggggtttctccatgttggccaggctggtctcgaactcttgacctcaggtgatccacctgcctcggcctcc 25 acagggctaggattagaggtgtgagccaccgcaccaggccgtttaaaactaatggagcacaaccagttaccaatatcttt ctgtaatcccagcactttgggaggccgaggcaggaggattacttgagcataggagttcaagatcagcctgggcaactagt gaaaaaccatctcaaaaaaaaaattagccaggcatggtggcatgcacctgtggtttcagctacttagagcagaggtgg aggategettgattetggagttcaaggttgeattgagetgtgategegeeagtgeactetegettgggtgacagagtaag aaatatattetggaaacaaateeettattagagatatgatttgcaaatattttetecaattittttttttttitaaagaca aagtttcactttgtcgcccaggctggtcttgattcctggcttcaagagatgctcttacctccacctcctgaagcccaaag acatgctgtcagcttttggatgatgtgaaaatgcaagcaggcacaggaaatgtctctaacttgcttacacttcctccctg aaccctgcggtttcacaactcctgcaggcacacctcccccgcctgccagtgtcaccagcctgttgcctctgtgagaa agtaccactgtaagaggccaaagggcatgatcattttcctctttcaccctgtctaggttgccagcaaatcccacgggcct cctgacgctgcccctggggccacaggtccctcgagtgctggaaggatgaaggattcctgcatcactgtgatggccatggc cagggcttggtgcagctggagtaaacaaggagctgcccctaaaagtgggattggccttagggatatgggccccaggga tcttggaaggagaaggggagagcggggaaataaaag (SEQ ID NO:12042) gatettggetcactacaacctccatctggtgggttcaagcaattettetgcctcagcctctcaagtagctgggattacag gcatgcgccaccacgcccggctaatttttgtatttttggtagagacgggggtttctccatgttggccaggctggtctcga actettgaceteaggtgatecacetgeeteggeeteceacaggetaggattagaggtgtgagecaceggaecaggeegtt taaaactaatggagcacaaccagttaccaatatctttgttccttctccactccctctgcttcacttgactagcctaaaat aaataaatttaaaaaactgggcacagtggctcacacctgtaatcccagcactttgggaggccgaggcaggaggattactt gagcataggagttcaagatcagcctgggcaacatagtgaaaaaccatctcaaaaaagaaaaattagccaggcatggtgg catgcacctgtggtttcagctacttaggagcagaggtgggaggatcgcttgattctggggagttcaaggttgcattgagct 55 gctgcatagcattccattgtaattttgccactgtttattagaccagtcctctgctgagctttacagagcccttagttggg atgttagtgagaaaccatgacagcagtggagactgtcatctccctgacatgctgtcagcttttggatgatgtgaaaatgc aagcaggcacaggaaatgtctctctaacttgcttacacttcctccctgaaccctgcggtttcacaactcctgcaggcaca 60 cctccctccccgcctgccagtgtcaccagcctgttgcctctgtgagaaagtaccactgtaagaggccaaagggcatgatc attttcctctttcaccctgtctaggttgccagcaaatcccacgggcctcctgacgctgcccctggggccacaggtccctc cagggcagactggtagcaaagccccacgcccagccaggagcaccgccgcgggactccagcacaccgagggacatgctggg cctgcgcccccactgctcgccctggtggggctgctctccctcgggtgcgtcctctctctaggagtgcacgaagttcaagg tcagcagctgccgggaatgcatcgagtcggggcccggctgcacctggtgccagaagctgaacttcacagggccgggggat cctgactccattcgctgcgacacccggccacagctgctcatgaggggctgtggcggctgacgacatcatggaccccacaag cctcgctgaaacccaggaagaccacaatgggggccagaagcagctgtccccacaaaaagtgacgctttacctgcgaccag gccaggcagcgttcaacgtgaccttccggcgggccaagggctaccccatcgacctgtactatctgatggacctctcc tactccatgcttgatgacctcaggaatgtcaagaagctaggtggcgacctgctccgggccctcaacgagatcaccgagtc cggccgcattggcttcgggtccttcgtggacaagaccgtgctgccgttcgtgaacacgcaccctgataagctgcgaaacc catgecccaacaaggagaaagagtgccagecccgtttgccttcaggcacgtgctgaagctgaccaacaactccaaccag gcagatcaatgtcccgatcaccttccaggtgaaggtcacggccacagagtgcatccaggagcagtcgtttgtcatccggg

cgctgggcttcacggacatagtgaccgtgcaggttcttccccagtgtgagtgccggtgccgggaccagagcagagaccgc agcctctgccatggcaagggcttcttggagtgcggcatctgcaggtgtgacactggctacattgggaaaaactgtgagtg

ccagacacagggccggagccaggagctggaaggaagctgccggaaggacaacaactccatcatctgctcagggctgg gggactgtgtctgcgggcagtgcctgtgccacaccagcgacgtccccggcaagctgatatacgggcagtactgcgagtgt agctccactctgactggcacagtctttgcatggagacttgaggacttgaggttggtgaggttaggtgcgtgtttcct 15 ctcgccctggtggggctgctctccctcgggtgcgtcctctctcaggagtgcacgaagttcaaggtcagcagctgccggga atgcatcgagtcggggcccggctgcacctggtgccagaagctgaacttcacagggccgggggatcctgactccattcgct gcgacacceggccacagetgctcatgaggggctgtgcggctgacgacatcatggaccccacaagcctcgctgaaacccag 20 gaagaccacaatgggggccagaagcagctgtccccacaaaaagtgacgctttacctgcgaccaggccaggcagcagcgtt caacgtgaccttccggcgggccaagggctaccccatcgacctgtactatctgatggacctctccctactccatgcttgatg acctcaggaatgtcaagaagctaggtggcgacctgctccgggccctcaacgagatcaccgagtccggccgcattggcttc gggtccttcgtggacaagaccgtgctgccgttcgtgaacacgcaccctgataagctgcgaaacccatgccccaacaagga gaaagagtgecegeceegtttgeettcaggeaegtgetgaagetgaceaacaaetecaaecagtttcagaeegaggteg 25 ggaagcagctgatttccggaaacctggatgcacccgagggtgggctggacgccatgatgcaggtcgccgcctgcccggag gaaateggetggegeaacgteacgeggetgetggtgtttgccactgatgaeggettecatttegegggegaeggaaaget gggcgccatcctgacccccaacgacggccgctgtcacctggaggacaacttgtacaagaggagcaacgaattcgactacc catcggtgggccagctggcgcacaagctggctgaaaacaacatccagcccatcttcgcggtgaccagtaggatggtgaag acctacgagaaactcaccgagatcatccccaagtcagccgtgggggagctgtctgaggactccagcaatgtggtccatct ${\tt cattaagaatgcttacaataaactctcctccagggtcttcctggatcacaacgccctccccgacaccctgaaagtcacct}$ 35 geagtgeetgtgecacaccagegacgtccccggcaagctgatatacgggcagtactgcgagtgtgacaccatcaactgtg agegetacaaceggecaggtetgeggeggeeeggggaggggetetgettetgegggaagtgeegetgeeaceegggettt gagggeteagegtgeeagtgegagaggaeeactgagggetgeetgaaceegeggegtgttgagtgtagtggtegtggeeg gtgccgctgcaacgtatgcgagtgccattcaggctaccagctgcctctgtgccaggagtgccccggctgccctcaccct 40 gtggcaagtacatctcctgcgccgagtgcctgaagttcgaaaagggcccctttgggaagaactgcagcgcggcgtgtccg ggcctgcagctgtcgaacaaccccgtgaagggcaggacctgcaaggagagggactcagagggctgctgggtggcctacac gctggagcagcaggacgggatggaccgctacctcatctatgtggatgagagccgagagtgtgtggcaggccccaacatcg cegceategtegggggcacegtggeaggcategtgetgateggcatteteetgctggteatetggaaggetetgateeac ctgagcgacctccgggagtacaggcgctttgagaaggagaagctcaagtcccagtggaacaatgataatccccttttcaa gagegecaccaegaeggteatgaaccccaagtttgetgagagttaggagea (SEQ ID NO:12045) gageteagaaatteaagaeeageetgggeaaggtagagaeeeeeatgtetaeaaaaaataaaaatgattagteaggt 50 gacaaagteteaetetgtegeceaggetggaatgcaatggtgagateteggeteactacaacetecateteetgggttea agcaattettetgectcageeteteaagtagetgggattacaggeatgcgccaccacgcetggetaatttttgtatttt 55 ggtagagacggggtttctccatgttggccaggctggtctcgaactcttgacctcaggtgatccacctgcctcggcctcc acagggctaggattagaggtgtgagccaccgcaccaggccgtttaaaactaatggagcacaaccagttaccaatatcttt ctgtaatcccagcactttgggaggccgaggcaggaggattacttgagcataggagttcaagatcagcctgggcaactagt gaaaaaccatctcaaaaaagaaaaattagccaggcatggtggcatgcacctgtggtttcagctacttagagcagaggtgg 60 aggatogottgattotggagttcaaggttgcattgagotgtgatogogocagtgcactotogottgggtgacagagtaag accttgtctcaaaaaatttaaaacaaaacaaaaaactggttatttgtcttttattggtgaattataagagttttaaa aagtttcactttgtcgcccaggctggtcttgattcctggcttcaagagatgctcttacctccacctcctgaagcccaaag ggctggaattacagccagtgagcctgcacccagcctccaattctttagattttacattttagaaccaaaatgggttaaat 65 acactgttctgtaatctgctctttctttaatagtagttcatgtacatctttcaaggtccagagaaagctctcactttct ccccgttttatttttccttccctcattcttttcactgctgcatagcattccattgtaattttgccactgtttattagac cagtcctctgctgagctttacagagcccttagttggatgttagtgagaaccatgacagcagtgagactgtcatctccctg 70 gacgggggtttcccatgttggccaggctggtctcgaactcttgacctcaggtgatccacctggcctcggcctcccacagg ctaggattagaggtgtgagccaccgcaccaggccgtttaaaactaatggagcacaaccagttaccaatatctttgttcct cccagcactttgggaggccgaggcaggaggattacttgagcataggagttcaagatcagcctgggcaacatagtgaaaaa ccatctcaaaaaaagaaaaattagccaggcatggtggcatgcacctgtggtttcagctacttaggagcagaggtgggagg ategettgattetgggagttcaaggttgcattgagetgtgategegecagtgcaetetegettgggtgaeagagcaagae cttgtctcaaaaaatttaaaacaaaacaaaaaaactggttatttgtcttttattgttgaattataagagttttaaaaa

tttcactttggtgcccaggctggtcttcattcctggcttcaagagatgctcttacctccacctcctgaagccccaaaggg ctggaattacagccagtgagccactgcacccagcctccaattctttagattttacattttagaaccaaaatgggttaaat acactgttctgtaatctgctcttttctttaatagtagttcatgtacatctttcaaggtccagagaaagctctcactttct ccccgttttatttttccttccctcattctttttcactgctgcatagcattccattgtaattttgccactgtttattagac cagtcctctgctgagctttacagagcccttagttgggatgttagtgagaaaccatgacagcagtggagactgtcatctcc ctgacatgctgtcagcttttggatgatgtgaaaatgcaagcaggaaatgtctctctaacttgcttacacttcct gagaaagtaccactgtaagaggccaaagggcatgatcattttcctctttcaccctgtctaggttgccagcaaatcccacg ggcctcctgacgctgcccctggggccacaagtccctcgagtgctggaaggattactgattactgtgatggcc atggcgctgctgtctgggttctttttcttcggtaggccagggcagactggtagcaaagcccccacgcccaggcagca CCgccgcggactccagcacaccgagggacatgctgggcctgcgcccccactgctcgccctggtggggctgctctccctc gggtgcgtcctctctcaggagtgcacgaagttcaaggtcagcagctgccgggaatgcatcgagtcggggcccggctgcac ctggtgccagaagctgaacttcacagggccgggggatcctgactccattcgctgcgacacccggccacagctgctcatga ctaccccatcgacctgtactatctgatggacctctcctactccatgcttgatgacctcaggaatgtcaagacgtaggtg gcgacctgctccgggccctcaacgagatcaccgagtccggccgcattggcttcgggtccttcgtggacaagaccgtgctg 20 tggctgaaaacaacatccagcccatcttcgcggtgaccagtaggatggtgaagacctacgagaaactcaccgagatcatc cccaagtcagccgtgggggagctgtctgaggactccagcaatgtggtccatctcattaagaatgcttacaataaactctc ctccagggtcttcctggatcacaacgccctcccgacaccctgaaagtcacctacgactccttctgcagcaatggagtga cgcacaggaaccagccagaggtgactgtgatggcgtgcagatcaatgtcccgatcaccttccaggtgaaggtcacggcc acagagtgcatccaggagcagtcgtttgtcatccgggcgctgggcttcacggacatagtgaccgtgcaggttcttcccca gtgtgagtgccggtgccgggaccagagcagagaccgcagcctctgccatggcaagggcttcttggagtgcggcatctgca 30 cggaaggacaacaactccatcatctgctcagggctgggggactgtgtctgcgggcagtgcctgtgccacaccagcgacgt cccggcaagctgatatacgggcagtactgcgagtgtgacaccatcaactgtgagcgctacaacggccaggtctgcggcg gcccggggaggggctctgcttctgcgggaagtgccgctgccacccgggctttgagggctcagcgtgccagtgcgagagg accactgagggetgcctgaacccgoggegtgttgagtgtagtggtcgtggccggtgccgctgcaacgtatgcgagtgcca ttcaggctaccagctgcctctgtgccaggagtgccccggctgccctcaccctgtggcaagtacatctcctgcgccgagt gcctgaagttcgaaaagggcccctttgggaagaactgcagcgcggcgtgtccgggcctgcagctgtcgaacaaccccgtg tggccggccggtgcttctggggggtcgttcgtggggggacagctccactctgactggcacagtctttgcatggagacttgagg agggcttgaggttggtgaggttaggtgcgtgtttcctgtgcaagtcaggacatcagtctgattaaaggtggtgccaattt 45 ataaaacttcaatctcgcctggtggggctgctctccctcgggtgcgtcctctctcaggagtgcacgaagttcaaggtca gcagctgccgggaatgcatcgagtcggggcccggctgcacctggtgccagaagctgaacttcacagggccgggggatcct gactccattcgctgcgacacccggccacagctgctcatgaggggctgtgcggctgacgacatcatggaccccacaagcct cgctgaaacccaggaagaccacaatgggggccagaagcagctgtccccacaaaaagtgacgctttacctgcgaccaggcc aggeageagegtteaaegtgacetteeggegggeeaagggetaceceategacetgtactatetgatggaceteteetae tccatgcttgatgacctcaggaatgtcaagaagctaggtggcgacctgctccgggccctcaacgagatcaccgagtccgg ccgcattggcttcgggtccttcgtggacaagaccgtgctgccgttcgtgaacacgcaccctgataagctgcgaaacccat gccccaacaaggagaaagagtgcccgccccgtttgccttcaggcacgtgctgaagctgaccaacaactccaaccagttt cagaccgaggtcgggaagcagctgatttccggaaacctggatgcacccgagggtgggctggacgccatgatgcaggtcgccgccgcaggaggaaatcggctgctgctggtgtgtttgccactgatgacggcttccattttcgcgggcgaaggaaagctgggcgccatcctgaccccaacgacggccgctgtcacctggaggacaacttgtacaagaggagcaac atgtggtccatctcattaagaatgcttacaataaactctcctccagggtcttcctggatcacaacgccctccccgacacc tgggcttcacggacatagtgaccgtgcaggtccttccccagtgtgagtgccggtgccgggaccagagcagagaccgcagc ctctgcatggcaagggcttcttggagtgcggcatctgcaggtgtqacactgqctacattgggaaaaactqtqaqtgcca gacacagggccggagcagccaggagctggaaggaagctgccggaaggacaacaactccatcatctgctcagggctggggg actgtgtctgcgggcagtgcctgtgccacaccagcgacgtccccggcaagctgatatacgggcagtactgcgagtgtgac accatcaactgtgagcgctacaacggccaggtctgcggcggcccggggaggggctctgcttctgcgggaagtgccgctg ccacccgggctttgagggctcagcgtgccagtgcgagaggaccactgagggctgcctgaacccgcggcgtgttgagtgta gtggtcgtggccggtgccgctgcaacgtatgcgagtgccattcaggctaccagctgcctctgtgccaggagtgccccggc tgcccctcaccctgtggcaagtacatctcctgcgccgagtgcctgaagttcgaaaagggcccctttgggaagaactgcag cgcggcgtgtccgggcctgcagctgtcgaacaaccccgtgaagggcaggacctgcaaggagagggactcagagggctgct gggtggcctacacgctggagcagcaggacgggatggaccgctacctcatctatgtggatgagagccgagagtgtgtggca ggetetgatecacetgagegaceteegggagtacaggegetttgagaaggagaageteaagteeeagtggaacaatgata atccccttttcaagagcgccaccacgacggtcatgaaccccaagtttgctgagagttaggagca (SEQ ID NO:12046) ggaattccgggcccggtctttcctcccgccgccgccgccggcctggtcccggggactggcctccacgtccgactcgtccgagc gagggggagattgggdadaggcccccaggagtccgtaagagggctgccgcgggaaaatgtctcaggagaggcccccattctcgc ggccgccgccgctggtcccgcggctgcgacgtggcggctgccgaggaaaatgtctcaggagaggcccacgttcta gctctgtgtgtgctgcttttgacacaaaacggggttacgtgtggcagtgaagaagctctccagaccatttcagtccatc attcatgcgaaaagaacctacagagaactgcggttacttaaacatatgaaacatgaaaatgtgattggtctgttggacgt ttttacacctgcaaggtctctggaggaattcaatgatgtgtatctggtgacccatctcatgggggcagatctgaacaaca

ttgtgaaatgtcagaagcttacagatgaccatgttcagttccttatctaccaaattctccgaggtctaaagtatatacat tggactggctcggcacacagatgatgaaatgacaggctacgtggccactaggtggtacagggctcctgagatcatgctga actggatgcattacaaccagacagttgatatttggtcagtgggatgcataatggccgagctgttgactggaagaacattg tttcctggtacagaccatattgatcagttgaagctcattttaagactcgttggaaccccaggggctgagcttttgaagaa aatotootoagagtotgoaagaaactatattoagtotttgactoagatgoogaagatgaactttgogaatgtatttattg gtgccaatcccctggctgtcgacttgctggagaagatgcttgtattggactcagataagagaattacagcggcccaagcc cttgcacatgcctactttgctcagtaccacgatcctgatgatgaaccagtggccgatccttatgatcagtcctttgaaag cagggacctccttatagatgagtggaaaagcctgacctatgatgaagtcatcagctttgtgccaccacccttgaccaag aagagatggagtcctgagcacctggtttctgttctgttgatcccacttcactgtgaggggaaggccttttcacggggaact tggttaacgccagggttttcccagtcacgaacgttgtaaaacgacggccagtgccaagctaaaattaaccttcactaaag ggaataagcttgcggccgcttcgggtttccggggggccgagggcggggcgagggcggggtcggggtcggggccgctctgggacatccctg ccatgagetetegecgecgecgecgeagtggettttaccgccaggaggtgaccaagacggcctgggaggtgcgcgcgtg taccgggacctgcagcccgtgggctcgggcgcctacggcgcgtgtgctcggccgtggacggcgcaccggcgctaaggt 20 ggccatcaagaagctgtatcggcccttccagtccgagctgttcgccaagcgccctaccgcgagctgcgcctgctcaagc acatgcgccacgagaacgtgatcgggctgctggacgtattcactcctgatgagaccctggatgacttcacggacttttac ctggtgatgccgttcatgggcaccgacctgggcaagctcatgaaacatgagaagctaggcgaggaccggatccagttcct cgtgtaccagatgctgaaggggctgaggtatatccacgctgcoggcatcatccacagagacctgaagcccggcaacctgg 25 gtgacccggtggtaccgggctcccgaggtcatcttgaattggatgcgctacacgcagacggtggacatctggtccgtggg ctgcatcatggcggagatgatcacaggcaagacgctgttcaagggcagcgaccacctggaccagctgaaggagatcatga aggtgacggggacgcttccggctgagtttgtgcagcggctgcagagcgatgaggccaagaacaacatgaaggcctcccc gaattggagaagaaggattttgcctctatcctgaccaatgcaagccctctggctgtgaacctcctggagaagatgctggt gctggacgcggagcagcgggtgacggcaggcgaggcgctggcccatccctacttcgagtccctgcacgacacggaagatg 30 gaggtgctcagcttcaagcctccccggcagctgggggccaggggtctccaaggagacgcctctgtgaagatctctgggctccggggtggcagtgaggaccaccttcacctt (SEQ ID NO:12048) ggaattccgggcccggtctttcctcccgccgccggcctggtcccggggactggcctccacgtccgactcgtccgagc attcatgcgaaaagaacctacagagaactgcggttacttaaacatatgaaacatgtgaatggtctgttggacgt ttttacacctgcaaggtctctggaggaattcaatgatgtgtatctggtgacccatctcatgggggcagatctgaacaaca ttgtgaaatgtcagaagcttacagatgaccatgttcagttccttatctaccaaattctccgaggtctaaagtatatacat tggactggctcggcacacagatgatgaaatgacaggctacgtggccactaggtggtacagggctcctgagatcatgctga actggatgcattacaaccagacagttgatatttggtcagtgggatgcataatggccgagctgttgactggaagaacattg 45 tttcctggtacagaccatattgatcagttgaagctcattttaagactcgttggaaccccaggggctgagcttttgaagaa gtgccaatcccctggctgtcgacttgctggagaagatgcttgtattggactcagataagagaattacagcggcccaagcc cttgcacatgcctactttgctcagtaccacgatcctgatgatgaaccagttggccgatccttatgatcagtcctttgaaag cagggacctccttatagatgagtggaaaagcctgacctatgatgaagtcatcagctttgtgccaccaccccttgaccaag aagagatggagtcctgagcacctggtttctgttctgttgatcccacttcactgtgaggggaaggccttttcacgggaact ttagtgtgtgtgtgtgttggttaacgccagggttttcccagtcacgaacgttgtaaaacgacggccagtgccaagctaaattaaccttcactaaagggaataagcttgcggccgcttcgggtttccggagggccggagggcggagggcgagggcgtcac 55 ctgggaggtgcgcgcgttaccgggacctgcagccgtggctcggggccttacggcgcgtgtgctcggcgcgtgacg gccgcaccggcgctaaggtggccatcaagaagctgtatcggcccttccagtccgagctgttcgccaagcgcgcctaccgc 60 gagetgegeetgeteaageaeatgegeeaegagaaegtgategggetgetggaegtatteaeteetgatgagaeeetgga tgaetteaeggaettttaeetggtgatgeegtteatgggeaeegaeetgggeaageteatgaaaeatgagaagetaggeg aggaccggatecagttectegtgtaccagatgctgaaggggctgaggtatatecacgctgecggcatcatccacagagac tgagatgactgggtacgtggtgacccggtggtaccgggctcccgaggtcatcttgaattggatgcgctacacgcagacgg 65 tggacatctggtccgtgggctgcatcatggcggagatgatcacaggcaagacgctgttcaagggcagcgaccacctggac cagctgaaggagatcatgaaggtgacggggacgcctccggctgagtttgtgcagcggctgcagagcgatgaggccaagaa caacatgaagggcctccccgaattggagaagaaggattttgcctctatcctgaccaatgcaagccctctggctgtgaacc tcctggagaagatgctggtgctggacgcggagcagcgggtgacggcaggcgaggcgctggcccatccctacttcgagtcc ctgcacgacacggaagatgagccccaggtccagaagtatgatgactcctttgacgacgttgaccgcacactggatgaatg gaagcgtgttacttacaaagaggtgctcagcttcaagcctccccggcagctgggggccagggtctccaaggagacgcctc tgtgaagatetetgggeteeggggtggeagtgaggaceacettcacett (SEQ ID NO:12049) ctcgatcaaaccttttttttatggtacacaatagtcacagtacttttccatataaaacaggtttagtggtcttaatttag tttggcacatttaatacactcccatgaccagcatcccaaatgtacctatccgttttattttattgtctcagaattgtcag 75 atttccactatgggatagatggagttcaattcctttgagtttaaaataatctaaattattattattccttatgccctgttt ttccctcacttttgtatccaaatctcttttcagacaacagaacaattaatgtctgataaggaagacaatgatgatgatca cttcaaaatgaattcaagattgtaatgtaaaattttagtactctctcaagtatggattctaacatggcttctaacccaa actaacattagtagctctaacctataaacttcaaatttcagtagtagcaacctactcctttaaaatgaaacagaagattga 80 gccataaatggaatgatgaaatatgactagaggagagaaaggctcctagatgagatgggattttaggcatccgtgtctc

aagacttctacaaattgaggtacctggtgtagttttatttcaggttttatgctgtcattttcctgtaatgctaaggactt

tacatatatatttttttagtatctcaccctcacatgctcctccctgagcactacccatgatagatgttaaacaaaagca aattagccccaataagcccaggcaactgaaaagtaaatgctatgttgtactttgatccatggtcacaactcataatcttg accaaaataatcacgcatcagggagagaaatgccttaaggcatacgttttggacatttagcgtccctgcaaattctggc categeogetteettigteeateagaaggeaggaaaetttatattggtgaecegtggageteacattaaetatttacagg gtaaetgettaggaecagtattatgaggagaatttaeettteeegeetetettteeaagaaacaaggaggggtgaaggt acggagaacagtatttcttctgttgaaagcaacttagctacaaagataaattacagctatgtacactgaaggtagctatt tcgtcactaaaacataaaacatgtcagcctttcttaaccttactcgccccagtctgtcccgacgtgacttcctcgaccct ctaaagacgtacagaccagacacggcggcggcggcggagagaggggattccctgcggccccggacctcagggccgctcaga ttcctggagaggaagccaagtgtccttctgccctcccccggtatcccatccaaggcgatcagtccacaactggctctcgg aagcactcqqqcaaaqactqcqaaqaaqaaaaqacatctqqcqqaaacctqtgcqcctggggcggtggaactcggggagg agagggaggatcagacaggagagtggggactaccccctctgctccaaattggggcagcttcctgggtttccgattttc tcatttccgtgggtaaaaaaccctgccccaccggcttacgcaatttttttaaggggagagagggaaaaatttgtgggg ttagcgaccaattgtcatacgacttgcagtgagcgtcaggagcacgtccaggaactcctcagcagcgcctccttcagctc (SEQ ID 20 gtccaggaactcctcagcagcgcctccttcagctccacagccagacgccctcagacagcaaagcctacccccgcgccgcg ccctgcccgccgctgcgatgctcgcccgcgccctgctgctgtgcgcggtcctggcgctcagccatacagcaaatccttgc tgttcccaeccatgtcaaaaccgaggtgtatgtatgagtgtgggatttgaccagtataagtgcgattgtacccggacagg attetatggagaaaactgeteaacaceggaatttttgacaagaataaaattattetgaaacecactecaaacacagtge 25 gtgttgacatccagatcacatttgattgacagtccaccaacttacaatgctgactatggctacaaaagctgggaagcctt ctctaacctctcctattatactagagcccttcctcctgtgcctgatgattgcccgactcccttgggtgtcaaaggtaaaa agcagcttcctgattcaaatgagattgtgggaaaattgcttctaagaagaaagttcatccctgatccccagggctcaaac atgatgtttgcattctttgcccagcacttcacgcatcagtttttcaagacagatcataagcgagggccagctttcaccaa cgggctgggccatggggtggacttaaatcatatttacggtgaaactctggctagacagcgtaaactgcgccttttcaagg atggaaaaatgaaatatcagataattgatggagagatgtatcctcccacagtcaaagatactcaggcagagatgatctac cctcctcaagtccctgagcatctacggtttgctgtggggcaggaggtctttggtgtgcctggtgcctgatgatgtatgccacaatctggctgagggaacaacaacagagttatgcgatgtgcttaaacaggagcatcctgaatggggtgatgagcagttgttccagacaagcagctgatgcgatagtagcagttgttgcttaaacaggagcatcctgaatggggtgatgagcagttgt caccetetateactggcateccettetgcetgacacettecaaattcatgaccagaaatacaactatcaacagtttatet acaacaactctatattgctggaacatggaattacccagtttgttgaatcattcaccaggcaaattgctggcagggttgct ttttaatgagtaccgcaaacgctttatgctgaagccctatgaatcatttgaagaacttacaggagaaaaggaaatgtctg cagagttggaagcactctatggtgacatcgatgctgtggagctgtatcctgcccttctggtagaaaagcctcggccagat gccatctttggtgaaaccatggtagaagttggagcaccattctccttgaaaggacttatgggtaatgttatatgttctcc tgcctactggaagccaagcacttttggtggagaagtgggttttcaaatcatcaccacctgcctcaattcagtctctcatct gcaataacgtgaagggctgtccctttacttcagtgttccagatccagagctcattaaaacagtcaccatcaatgca agttcttcccgctccggactagatgatatcaatcccacagtactactaaaagaacgttcgactgaactgtagaagtctaa tgatcatatttatttatttatatgaaccatgtctattaatttaatttaatatttaatatttatattatatattaaccccttatgtta cttaacatcttctgtaacagaagtcagtactcctgttgcggagaaaggagtcatacttgtgaagacttttatgtcactac tctaaagattttgctgttgctgttaagtttggaaaacagtttttattctgttttataaaccagagagaaatgagttttga cgtctttttacttgaatttcaacttatattataaggacgaaagtaaagatgtttgaatacttaaacactatcacaagatgccaaaatgctgaaagtttttacactgtcgatgtttccaatgcatcttccatgatgcattagaagtaactaatgtttgaaa 50 cattaccaqtaatttcatqtctactttttaaaatcaqcaatqaaacaataatttqaaatttctaaaattcataqqqtaqaa tcacctgtaaaagcttgtttgatttcttaaagttattaaacttgtacatataccaaaaagaagctgtcttggatttaaat ctgtaaaatcagatgaaattttactacaattgcttgttaaaatattttataagtgatgttcctttttcaccaagagtata aacctttttagtgtgactgttaaaacttccttttaaatcaaaatgccaaatttattaaggtggtggagccactgcagtgt 55 tatctcaaaataagaatatcctgttgagatattccagaatctgtttatatggctggtaacatgtaaaaaccccataaccc cgccaaaaggggtcctacccttgaacataaagcaataaccaaaggagaaaagcccaaattattggttccaaatttaggt ttaaacttttttgaagcaaactttttttttagccttgtgcactgcagacctggtactcagattttgctatgaggttaatgaa gtaccaagctgtgcttgaataacgatatgttttctcagattttctgttgtacagtttaatttagcagtccatatcacatt gcaaaagtagcaatgacctcataaaatacctcttcaaaatgcttaaattcatttcacacattaattttatctcagtcttg ggactctgcctatatttttcttacctgaacttttgcaagttttcaggtaaacctcagctcaggactgctatttagctcctc ttaagaagattaaaaaaaaaaaaaa (SEQ ID NO:12051) gageteacattaactatttacagggtaactgettaggaccagtattatgaggagaatttacetttecegeetetetttee aagaaacaaggaggggggggaaggtacggagaacagtatttcttctgttgaaagcaacttagctacaaagataaattacag agcagatatacagcctattaagcqtcgtcactaaaacataaaacatgtcagcctttcttaaccttactcgccccagtctg tcccgacgtgacttcctcgaccctctaaagacgtacagaccagacacggcggcggcgggaggggattcccttgcccccggacctcagggccgccagattccttggagagggaagccaagtgtccttctgccctcccccggtatcccatccaaggc tataaaaaggaaggttctctctcggttagcgaccaattgtcatacgacttgcagtgagcgtcaggagcacgtccaggaactc ggggactccggttccacgcacccgggcagagtttccgctctgacctcctgggtctatcccagtactccgacttctctccg aatagagaagctacgtgacttgggaaagagcttggaccgctagagtccgaaagaactccgtggatattccagctttccca caagcactgatcattatgagccagttacttaaccgatctgagacactctcacctcctaaatagggatagatgatactaat ttgcaggttgtcattatgataagacaggatctgatcaatatatgtgaattgtttatatttggaacctttttattgagtgg aagaagttgttttaaatattetagteagttettteetgeteecaggaaageeeggattatgttttaagataageaaaatg tettaaaagtaagetgttttaetttgaattttteeetaaatgttgattagtgtaetagateeattttaatttggaaagtg

aagtgctacttatttgaacttcttaaaaatgctaattttaacatctaaagagttaactaagaaaagcttagtaacatgat gtaccaagttgaatatgctgttatccttatttagaatagaaaattggtatttctacgttttatccattctaaggcaggtt aaaaaattgtatttccatgactacctatatatttcttgaatttattattgtaaagttgattcatagtcaaacaattaaat tgtcaaaaccgaggtgtatgtatgagtgtgggatttgaccagtataagtgcgattgtacccggacaggattctatggaga tttctgaaacccactccaaacacagtgcactacatacttacccacttcaagggattttggaacgttgtgaataacattcc cttccttcgaaatgcaattatgagttatgtcttgacatgtaagtacaagtgtctttctaaggtttttagccttctcaaagaaaaaatatgctttataatactgtaagcctaatctaaaaacatatttccaagcttatcaaaaagactttaagatagctttt aagtttgccttccatcttaatcgccaaaaatattgacatttagtcccatccagtttatacagtctgctcacaactctgta tacctcttctaacctttactgtttggtcagtttgtggaggtagcatggtccagctgtttattgaatgcccatgggccaca gaattgttctgaacatgtagcacccattaaaataaatttggatttggatcagcaagaaaataactttccatgattctaaa ttatctatgggtattttttaaagtatgagtctatataaactattatgtaaaagcaaatgagcgtcttggtataatgtctt aatattttcaaattatttctttagaaatgaaataattctaattaaaatagataaaatcattcagtaagaagttgttccac catatettagaactgttgtttatattattgateetatteacaattgtaatteteatataaatgaagaattettggtagatt gacagtcaccatctcctttcttgaatacatagatggattcttaccttagctttctcatttttcaggtaaaaaagcagcttc ctgattcaaatgagattgtggaaaaattgcttctaagaagaaagttcatccctgatccccagggctcaaacatgatgttt gcattotttgcccagcacttcacgcatcagtttttcaagacagatcataagcgagggccagctttcaccaacgggctggg ccatggggtaagatagagttaatatettagagttagtaaaattataccaaateatagteaagggetaacattaaaggaga tatacagatagatagatccaaataacttatccactttttttaaaaaagaagtcttatctataaaaaccttaaaaggaatttt 30 $at gtac agg tatt gtt at \texttt{ttg} ta at \texttt{ttg} accett gtat \texttt{tttt} ta gt tta aaa \texttt{tg} tta \texttt{ttg} ta ct \texttt{tta} ta \texttt{ttg} tc \texttt{tc} ta \texttt{ttg} tc \texttt{tta} ta \texttt{ttg} tc \texttt{tt$ aaaaacacattgtaccatgattatgccgctttcaatattgtaaagtgaggtttttgccgcattattattttttggatttc ctaaatgatcaaattatttaatgatgaattatatgatagacactttatataagaaaaacttcaacagcaacaaattaaaa tttttcatcattttctaggtggacttaaatcatatttacggtgaaactctggctagacagcgtaaactgcgccttttca aggatggaaaaatgaaatatcaggtatgcttcctttgactattaagacttagttattaccgcttatacccatatttaaa gcaggaggtctttggtctggtgcctggtctgatgtatgccacaatctggctgcgggaacacaacaacagagtatgcgatg tgcttaaacaggagcatcctgaatggggtgatgagcagttgttccagacaagcaggctaatactgataggtaaacaagaa aatgatttatataaaaccctcttccccagggaaaattagtgtgctatctttgttatgttttgagtaaatgacaagatgtg gtaaatgaaaactcacacattctatatacattaaatatgtaagcatgactgataaaatagctatcttttgatactgacaa ggaagaaaacagaaatgaaggaatagcaaattttaaaaaattgcattccagttgcttgaaagcttgtgatcagatgcaata ttaacaccetetateactggcateceettetgeetgacacettteaaatteatgaccagaaatacaactateaacagttt at ctace accepted a temperature of the constraints of the constraintaagcattattattgaaaaccaaaacaaaagactagtcagtaactttagaatttctgccacggaaattatttttcttaaac aagcaattotootgootoaacttootgagtagotgggactacaggotcacgtogcacgcatggataattttttgtatttt 60 cağtatagacggggftttcaccgtgttagccaggctggtctcaaactcctgacctagtgatccgccggcttcggcctcccg aagtgctgggattacaggcgtgagccaccgcgcctggcccctaaacttcttaaaagaatcaggggtcaaatggaaacaga gaagttggcagcaaattgagcaaaagaatcaaactgttttttattttgtgaagtttgacattggtgtatctctgtcttc atogoottoacaggagaaaaggaaatgtotgoagagttggaagcactotatggtgacatogatgctgtggagctgtatoc tgcccttctggtagaaaagcctcggccagatgccatctttggtgaaaccatggtagaagttggagcaccattctccttga aaggacttatgggtaatgttatatgttctcctgcctactggaagccaagcacttttggtggagaagtgggttttcaaatc agagctcattaaaacagtcaccatcaatgcaagttcttcccgctccggactagatgatatcaatcccacagtactactaa ctatgaggttaatgaagtaccaagctgtgcttgaataacgatatgttttctcagattttctgttgtacagtttaatttag cagtccatatcacattgcaaaagtagcaatgacctcataaaatacctcttcaaaatgcttaaattcatttcacacattaa

ttcttttaqccattttgctaagagacacagtcttctcatcacttcgtttctcctattttgttttactagttttaagatca gagttcactttctttggactctgcctatattttcttacctgaacttttgcaagttttcaggtaaacctcagctcaggact atatctaagtagttctcagcaataataataatgacgataatacttcttttccacatctcattgtcactgacatttaatgg acaatcattgattttttttttttttattatgtcacaatcagtatattttcttttggggttacctcttgaatattatgtaaacaat 10 ccaaaqaaatqattgtattaagattigtgaataaatttttagaaatctgattggcatattgagatatttaaggttgaatg tttgtccttaggataggcctatgtgctagcccacaaagaatattgtctcattagcctgaatgtgccataagactgacctt ttaaaatgttitgagggatctgtggatgcttcgttaatttgttcagccacaatttattgagaaaatattctgtgtcaagc ttgggaagagggagaaaatgaaataaatatcattaaagataactcaggagaatcttctttacaatittacgtttagaatg 15 ttattaacattgatctgctgacaaaacctgggaatttgggttgtgtatgcgaatgtttcagtgcctcagacaaatgtgta gtcgactcgagtc (SEQ ID NO:12052) ctcgatcaaaccttttttttatggtacacaatagtcacagtacttttccatataaaacaggtttagtggtcttaatttag 20 tttggcacatttaatacactcccatgaccagcatcccaaatgtacctatccgttttattttattgtctcagaattgtcag cagatteteettgaaettttttttttttgaettteeaagtaeatggaaetetteaetetateetgetatataaggtgaeaga atttccactatgggatagatggagttcaattcctttgagtttaaaataatctaaatataattattccttatgccctgttt ttccctcacttttgtatccaaatctcttttcagacaacagaacaattaatgtctgataaggaagacaatgatgatgatca cttcaaaatgaattcaggattgtaatgtaaaattttagtactctctcacagtatggattctaacatggcttctaacccaa actaacattagtagctctaactataaacttcaaatttcagtagatgcaacctactcctttaaaatgaaacagaagattga gccataaatggaatgatgaaatatgactagaggaggagaaaggctcctagatgagatgggattttaggcatccgtgtctc aaqacttctacaaattgaggtacctggtgtagttttatttcaggttttatgctgtcattttcctgtaatgctaaggactt tacatatatatattttttagtateteacecteacatgeteeteeetgagcactacccatgatagatgttaaacaaaagca aattagccccaataagcccaggcaactgaaaagtaaatgctatgttgtactttgatccatggtcacaactcataatcttg 35 accaaaataatcacgcatcagggagagaaatgccttaaggcatacgttttggacatttagcgtccctgcaaattctggc catcgccgcttcctttgtccatcagaaggcaggaaactttatattggtgacccgtggagctcacattaactatttacagg gtaactgcttaggaccagtattatgaggagaatttacctttcccgcctctctttccaagaaccaaggagggggtgaaggt acggagaacagtatttcttctgttgaaagcaacttagctacaaagataaattacagctatgtacactgaaggtagctatt tegteactaaaacataaaacatgteageetttettaacettaetegeeeeagtetgteeegaegtgaetteetegaeeet ctaaagacgtacagaccagacacggcggcggcggcggagagaggggattccctgcggccccggacctcagggccgctcaga ttagcgaccaattgtcatacgacttgcagtgagcgtcaggagcacgtccaggaactcctcagcagcgcctccttcagctc gtccaggaactcctcagcagcgcctccttcagctccacagccagacgccctcagacagcaaaagcctaccccagcgcgcg 50 ccctgcccgccgctgcgatgctcgcccgcgccctgctgctgtgcgcggtcctggcgctcagccatacagcaaatccttgc tgttcccacccatgtcaaaaccgaggtgtatgtatgagtgtgggatttgaccagtataagtgcgattgtacccggacagg attotatggagaaaactgotcaacacoggaatttttgacaagaataaaattatttotgaaacccactocaaacacagtgo gtgttgacatccagatcacatttgattgacagtccaccaacttacaatgctgactatggctacaaaagctgggaagcctt 55 ctctaacctctcctattatactagagcccttcctcctgtgcctgatgattgcccgactcccttgggtgtcaaaggtaaaa agcagcttcctgattcaaatgagattgtgggaaaattgcttctaagaagaaagttcatccctgatccccagggctcaaac atgatgtttgcattctttgcccagcacttcacgcatcagtttttcaagacagatcataagcgagggccagctttcaccaa cgggctgggccatggggtggacttaaatcatatttacggtgaaactctggctagacagcgtaaactgcgccttttcaagg atggaaaaatgaaatatcagataattgatggagagatgtatcctcccacagtcaaagatactcaggcagagatgatctac cctcctcaagtccctgagcatctacggtttgctgtggggcaggaggtctttggttctggtgcctggtctgatgatgtatgc cacaatctggctgagggaacacaacagagtatgcgatgtgcttaaacaggagcatcctgaatggggtgatgagcagttgt tocagacaagcaggctaatactgataggagagactattaagattgtgattgaagattatgtgcaacacttgagtggctat caccetetateactggcateccettetgcetgacacettteaaatteatgaccagaaatacaactateaacagtttatet acaacaactetatattgctggaacatggaattacccagtttgttgaatcattcaccaggcaaattgctggcagggttgctggtggtaggaatgttecacccgcagtacagaaagtatcacaggettecattgaccagagcagacaggcagatgaaataccagte ttttaatgagtaccgcaaacgctttatgctgaagccctatgaatcatttgaagaacttacaggagaaaaggaaatgtctg cagagttggaagcactctatggtgacatcgatgctgtggagctgtatcctgcccttctggtagaaaagcctcggccagat gccatctttggtgaaaccatggtagaagttggagcaccattctccttgaaaggacttatgggtaatgttatatgttctcc tgcctactggaagccaagcacttttggtggagaagtgggttttcaaatcatcaacactgcctcaattcagtctctcatct gcaataacgtgaagggctgtccctttacttcattcagtgttccagatccagagctcattaaaacagtcaccatcaatgca agttettecegeteeggaetagatgatateaateeeacagtaetaetaaaagaaegttegaetgaaetgtagaagtetaa tgatcatatttatttatttatatgaaccatgtctattaatttaatttaatattaatatttatatattatatcccttatgtta cttaacatcttctgtaacagaagtcagtactcctgttgcggagaaaggagtcatacttgtgaagacttttatgtcactac tctaaagattttgctgttgctgttaagtttggaaaacagtttttattctgttttataaaccagagagaaatgagttttga cgtcttttttacttgaatttcaacttatattataaggacgaaagtaaagatgtttgaatacttaaacactatcacaagatg ccaaaatgctgaaagtttttacactgtcgatgtttccaatgcatcttccatgatgcattagaagtaactaatgtttgaaa cattaccagtaatttcatgtctactttttaaaatcagcaatgaaacaataatttgaaatttctaaattcatagggtagaa tcacctgtaaaagcttgtttgatttcttaaagttattaaacttgtacatataccaaaaagaagctgtcttggatttaaat ctgtaaaatcagatgaaattttactacaattgcttgttaaaatattttataagtgatgttctttttcaccaagagtata aacctttttagtgtgactgttaaaacttccttttaaatcaaaatgccaaatttattaaggtggtggagccactgcagtgt

tatctcaaaataaqaatatcctqttqaqatattccaqaatctqtttatatqqctqqtaacatqtaaaaaccccataaccc cgccaaaaggggtcctacccttgaacataaagcaataaccaaaggagaaaagccaaattattggttccaaatttagggt ttaaactttttgaagcaaacttttttttagccttgtgcactgcagacctggtactcagattttgctatgaggttaatgaa gtaccaagctqtqcttqaataacgatatgttttctcagattttctgttgtacagtttaatttagcagtccatatcacatt gcaaaagtagcaatgacctcataaaatacctcttcaaaatgcttaaattcatttcacacattaattttatctcagtcttg aagccaattcagtaggtgcattggaatcaagcctggctacctgcatgctgttccttttcttttctttttagccatttt gctaagagacacagtcttctcaaacacttcgtttctcctattttgttttactagttttaagatcagagttcactttctt ttaagaagattaaaaaaaaaaaaaaaggagetcacattaactatttacagggtaactgettaggaccagtattatgagga gaatttacctttcccgcctctctttccaagaaacaaggaggggtgaaggtacggagaacagtatttcttctgttgaaag Caacttagctacaaagataaattacagctatgtacactgaaggtagctatttcattccacaaaataagagttttttaaaa agctatgtatgtatgtgctgcatatagagcagatatacagcctattaagcgtcgtcactaaaacataaaacatgtcagcc tttcttaaccttactcgcccagtctgtcccgacgtgacttcctcgaccctctaaagacgtacagacacggcggc ggcggcgggagaggggattccctgcgcccccggacctcagggccgctcagattcctggagaggaagccaagtgtccttct gccctccccggtatcccatccaaggcgatcagtccagaactggctctcggaagcgctcgggcaaagactgcgaagaaga actacccctctgctcccaaattggggcagcttcctgggtttccgattttctcatttccgtgggtaaaaaaccctgcccc 20 gagcgtcaggagcacgtccaggaactcctcagcagcgcctccttcagctccacagccagacgccctcagacagcaaagcc tacccccgcgccctgccctgcccgcccgctcggatgctcgcccgcgccctgctgctgtgcgcggtcctggcgctcagccat acaggtgagtactggcgcgcgcaccggggactccggttccacgcacccgggcagagtttccgctctgacctcctgggtctatcccagtactccgacttctctccgaattactccgaattcccgaatagagaagctacgtgacttggaacagcttggaccgctagagtccgaaag aactccgtggatattccagctttcccacaagcactgatcattatgagccagttacttaaccgatctgagacctctcacc
tcctaaattagggatagatgatactaatttgcaggttgtcattatgataagacaggatctgatcaatatatgtgaattgt
tatatttggaacctttttattgagtggaagaagttgttttaaatattctagtcagttctttcctgctcccaggaaagcc 25 taactaagaaaagcttagtaacatgatgtaccaagttgaatatgctgttatccttatttagaatagaaaattggtatttc tacqttttatccattctaaqqcaggttaaaaaattgtatttccatgactacctatatatttcttgaatttattattgtaa qcaqcaaatccttqctqttcccacccatqtcaaaaccgaggtqtatqtatqagtgtgggatttgaccagtataagtgcga ttgtacccggacaggattctatggagaaaactgctcaacacgtaagtttgtcctttggttgcctcattaggagtggggct ggatacagttatcattgtatagattigtgtcttataatgagtcccattaatttctccctcccttcttcgtcttcttgca geggaatttttgacaagaataaaattatttetgaaaceeacteeaaacacagtgeactacatacttaceeacttcaaggg attttggaacgttgtgaataacattcccttccttcgaaatgcaattatgagttätgtcttgacatgtaagtacaagtgtc tttctaaggtttttagccttctcaaagaaaaatatgctttataatactgtaagcctaatctaaaaacatatttccaagct tatcaaaaagactttaagatagctttaagtttgccttccatcttaatcgccaaaaatattgacatttagtcccatccag tttatacagtctgctcacaactctgtatacctcttctaacctttactgtttggtcagtttgtggaggtagcatggtccag tggctacctgaaaaatcaatattgccagattataatgtgcagagtatatgtattttattaaagatgtatttcaagtggcc agatcacatttgattgacagtccaccaacttacaatggctgactatggctactatggctgggaagccttctctaacctctc
ctattatactagagcccttcctcotgtgcctgatgattgcccgactcccttgggtgtcaaaggtgagtaagaagaatcca caaaagcagtttttacttttagcatggttatctatgggtatttttaaaadtatggtatgatctatataaactattatgtaaaag caaatgagcgtcttggtataatgtcttaatattttcaaattatttcttagaaatgaaatgaaataattctaattaaaatagat 50 aaatcattcagtaagaagttgttccaccatatcttagaactgttgtttatattatgatcctattcacaattgtaattctc atataaatgaagaattcttggtagattgacagtcaccatctcctttcttgaatacatagatggattcttaccttagcttt ctcatttttcaggtaaaaagcagcttcctgattcaaatgagattgtggaaaaattgcttctaagaagaaagttcatcct gatececagggeteaaacatgatgtttgcattetttgcccagcaettcaegcateagtttttcaagacagateataageg agggccagctttcaccaacgggctgggccatggggtaagatagagttaatatcttagagttagtaaaattataccaaatc catatataaacattcacacatacatatgtacaggtattgttatttgtaatttgacccttgtatttttagtttaaaat gttagtactgcaaaatgttatgtcctcaaaaacacattgtaccatgattatgccgctttcaatattgtaaagtgaggttt ttgccgcattattattitttggatttcaatagcatagcitcaagttattcgtaagaatttttataaataatacattttt tattttatttaaaaaattttaaagaaagctaaatgatcaaattatttaatgatgaattatatgatagacactttatataag aaaaacttcaacagcaacaaattaaaattttttcatcattttctaggtggacttaaatcatatttacggtgaaactctgg ctagacagcgtaaactgcgccttttcaaggatggaaaaatgaaatatcaggtatgcttcctttgactattaagacttagt tttttttagataattgatggagagatgtatcctcccacagtcaaagatactcaggcagagatgatctaccctcctcaagt ccctgagcatctacggtttgctgtggggcaggaggtctttggtctggtgcctggtctgatgatgtatgccacaatctggc tgcgggaacacaacagagtatgcgatgtgcttaaacaggagcatcctgaatggggtgatgagcagttgttccagacaagc aggctaatactgataggtaaacaagaaaatgatttatataaaaccctcttccccagggaaaattagtgtgctatctttgt tatgttttgagtaaatgacaagatgtggtaaatgaaaactcacacattctatatacattaaatatgtaagcatgactgat aaaatagctatcttttgatactgacaaggaagaaaacagaaatgaaggaatagcaaattttaaaaattgcattccagttg agtaccaaaategtattgctgctgaatttaacaccctctatcactggcatccccttctgcctgacacctttcaaattcat 75 gaccagaaatacaactatcaacagtttatctacaacaactctatattgctggaacatggaattacccagtttgttgaatc attcaccaggcaaattgctggcagggtaagcattattattgaaaaccaaaacaaaagactagtcagtaactttagaaattt gaagcctaactttgtttgaaaagtctaaacttttagtctagtctacagttgtcagacaaatagcaaattgtacccctacc ttaaaaatattttcaaaaagtatctataatcttataggaataaatttttaggcttgaatactagtgttatttttgaaat gtaaaaaggcaaattagttctaggctggtgtcccattgaattttaagcagagctcctgttgaaatgtaggtaagcatctt tccagcaaataaaaattgtctccgctgggagtttcagttttacctgatttgtacctaaggcaagctgaatacaaacagta aatatgcctaaaattcttgttttacaactaattttactttccacaggttgctggtggtaggaatgttccaccggcagtac

agaaaqtatcacaggcttccattgaccaqaqcaqqcagatgaaataccagtcttttaatqaqtaccqcaaacqctttatg tttttgttgttttttggttttcttttcgagatggagccgcctctgtcacccaggctggagtgcagtggcgccatctcggc tcactgcaacctccgcctcctgggttcaagcaattctcctgcctcaacttcctgagtagctgggactacaggctcacgtc gcacgcatggataattttttgtattttcagtatagacggggtttcaccgtgttagccaggctggtctcaaactcctgacc tagtgatecgccgcttcggcttcccgaagtgctgggattacaggcgtgggccaccgcgcctggcccctaaacttcttaa aagaatcaggggtcaaatggaaacagagaagttggcagcaaattgagcaaaagaatcaaactgttttttattttgtgaag tttgacattggttgtatctctgtcttcatcgccttcacaggagaaaaggaaatgtctgcagagttggaagcactctatgg tgacatogatgotgtggagotgtatootgocottotggtagaaaagootoggooagatgocatotttggtgaaaccatgg tagaagttggagcaccattctccttgaaaggacttatgggtaatgttatatgttctcctgcctactggaagccaagcact tttggtggagaagtgggttttcaaatcatcaacactgcctcaattcagtctctcatctgcaataacgtgaagggctgtcc ctttacttcattcagtgttccagatccagagctcattaaaacagtcaccatcaatgcaagttcttcccgctccggactag gtcagtactcctgttgcggagaaaggagtcatacttgtgaagacttttatgtcactactctaaagattttgctgttgctg ttaagttttggaaaacagtttttattetgttttataaaccagagagaaatgagttttgacgtetttttacttgaatttcaa Cttatattataagaacgaaagtaaagatgtttgaatacttaaacactatcacaagatggcaaaatgctgaaagtttttac actgtogatgtttccaatgcatcttccatgatgcattagaagtaactaatgtttgaaattttaaagtacttttggttatt tttctgtcatcaaacaaaacaggtatcagtgcattattaaatgaatatttaaattagacattaccagtaatttcatgtc tactttttaaaatcagcaatgaaacaataatttgaaatttctaaattcatagggtagaatcacctgtaaaagcttgtttg atttcttaaagttattaaacttgtacatataccaaaaagaagctgtcttggatttaaatctgtaaaatcagatgaaattttactacaattgcttgttaaaatattttataagtgatgttcctttttcaccaagagtataaacctttttagtgtgactgtt aaaacttccttttaaatcaaaatgccaaatttattaaggtggtggagccactgcagtgttatctcaaaataagaatattt tgttgagatattccagaatttgtttatatggctggtaacatgtaaaatctatatcagcaaaagggtctacctttaaaata agcaataacaaagaagaaaaccaaattattgttcaaatttaggtttaaacttttgaagcaaactttttttatccttgtg cactgcaggcctggtactcagattttgctatgaggttaatgaagtaccaagctgtgcttgaataacgatatgttttctca gattttctgttgtacagtttaatttagcagtccatatcacattgcaaaagtagcaatgacctcataaaatacctcttcaa aaatagtatacacttatittaagigaaaagcagagaattttatttatigctaatttagctatctgtaaccaagatggat tttcttatttaaaaacaaaaccaaatgatatctaagtagttctcagcaataataataatgacgataatacttcttttcca tacctctctgaatattatgtaaacaatccaaagaaatgattgtattaagatttgtgaataaatttttagaaatctgattg gcatattgagatatttaaggttgaatgtttgtccttaggataggcctatgtgctagcccacaaagaatattgtctcatta gcctgaatgtgccataagactgaccttttaaaatgttttgagggatctgtggatgcttcgttaatttgttcagccacaat gccctgtgcactggtgagaagggcttcggctacaaaggctccaccttccacagggtgatcccttccatgtgccaggc gggcgacttcaccaaccacaatggcacaggcgggaagtccatctacggaagccgctttcctgacgagaactttacactga agcacgtggggccaggtgtcctgtccatggctaatgctggtcctaacaccaacggctcccagttcttcatctgcaccata aagacagactggttggatggcaagcatgttgtgtttcggtcacgtcaaagagggcatggacgtcgtgaagaaaatagaatc tttcggctctaagagtgggaggacatccaagaagattgtcatcacagactgtggccagttgagctaatctgtggccaggg tgctggcatggtggcagctgcaaatgtccatgcacccaggtggccgcgttgggctgtcagccaaggtgcctgaaacgata cgtgtgcccactccactgtcacagtgtgcctgaggaaggctgctagggatgttagacggaattcc (SEQ ID NO:12054) ttttgcagacgccaccgccgaggaaaaccgtgtactattagccatggtc (SEQ ID NO:12055) cgggaacgcaacatgaaggtgctccttgccgccgccctcatcgcggggtccgtcttcttcctgctgctgccgggaccttc tgcggccgatgagaagaagaaggggcccaaagtcaccgtcaaggtgtatttttgacctacgaattggagatgaagatgtag gaaggtgctccttgccgccgccctcatcgcggggtccgtcttcttcctgctgctgccgggaccttctgcggccgatgagaagaagagggcccaaagtcaccgtcaaggtgtattttgacctacgaattggagatgaagatgtagaccggcggtgatcttt ggtctctttggaaagactgttccaaaaacagtggataattttgtggccttagctacaggagagaaaggatttggctacaa aaacagcaaattccatcgtgtaatcaaggacttcatgatccagggcggagacttcaccaggggagattggcacaggaggaa gcaggcaaagacaccaacggctcccagttcttcatcacgacagtcaagacagcctggctagatggcaagcatgtggtgtt atgtgatcatcgcagactgcggcaagatcgaggtggagaagccctttgccatcgccaaggagtagggcacagggacatct ttctttgagtgaccgtctgtgcaggccctgtagtccgccacagggctctgagctgcactggccccggtgctggcatctgg tggagcggacccactccctcacattccacaggcccatggactcacttttgtaacaaactcctaccaacactgaccaata aaaaaaaatgtgggtttttttttttaataaaag (SEQ ID NO:12057) gaattcccttgtaaggttttcttaacaaaacacagtcacataagtgcattttattttattttgtttatttttgacattttgacgaggagtctcttgtctctagctggagtgcagtggagtgcagtggcatctctgctcgctgcaacctccacctcctgggttccagc gattctcctgcctcagcctcccgaggggtagctgggactacaggtgcgcaccaccatgcccagctaattttgtatttt

cgtagagatggggtttcaccatgttgtccaggctggtcttgaactcctgacctcaggtgatcctcccgcctcggcctccc aaagtgctggaattacaggcgtgatccaccggaccaggcctattttttgagagagggtcacactctgtcgtcccggctgg aatgcagtgatgcgatcaccgcccactacagcctcgacctccgggctcaagcatcctccccgcccagcctcctgagtag gtggccggtgtcgaactcctaagatgaagcgatcctccccggccttggccttcgcgcgcctcctaaagcgccaggtatgagc Caccgcgcctggcctacaagtgcattttaattaaagtattattaatgtctttgcctgaagaaattcgcttttaaattgtg aaagaccaggagcagagattcaaaaagagtaagaggcaaaatgtgcataatgcatcttcacaggtaagagcctggccag gctcctgttttaatggcttcctcctgaagaagattcaagcagagtgtaagatattttcggaaagtagagcattttgaaag catttcataatctctcaaaaccggagactgctcctgtcccacctcgttagagaaaacagcgatgctcaaaggcaacctcc ttcctgacattgcctggtaggacgcgacgtggtgtttgcccgcgcggaatgcggacgcaaggctgctcctaggtctcggg gacgogocatcoccatttcogctcgcggaggogtagggtccgggcgcgggaccccagtcgaccttgactggcggcgcgac cttgaggcctgcgttcgcctcagttgccccctctgtgcaatggggagacgcctcatcgcttgacaacggccgaagagc cgccgcgcttacgtctaccgcgtgcgcgcgccatgctgcccacccccgttccgcactgaccctcccccgtgccccgcgtc cogtactgccgccccgagtcccatgccgcagcaccgcgaggagcccgcagggggaacctgcctccgcgcgtt agegegeaegegegeteatgtgtegteceeateagegeeggetteegtetataggeeagatgeaetgteaetetggega ggccaggctcgtgccgttttgcagacgccaccgccgaggaaaaaccgtgtactattagccatggtcaaccccaccgtgttc ccagaaagtgggccggggtcgggtgggtagccccaaaggcccgggcgcgggggcgaccctgcttgaggggcgagc gcggggggctgcggcgcatttcctgacgaggggcattttgggaggtccgcgggattgcgcgggaggaggccgggacgcgg gggtgctttacatcctgagctgggaagctgtttgcttgagggtttttccccaaggatcgaggcggtgtgagcccgtcca tgctcggtcctgtagatccgggaggccatgttataaaaggagacttgctgggatgtgacggttgccacttgaaatatc
ttccatttggataaagtaggaatatttatacatgtgccccaaacgtccctccgtgtcccccaccccaagcggaaatgtg ggcgcgtgtcttcaaagttaaatattgagtacgattccgttccagttaacatggatagaccttagggagtagcgaaatag gatgttagtggttttattccttttaatcacatctcaaaaggccaccaatggctagtttggatcttattccgaaaatagat tgalcotcalgcagtettegtgaggacagagegattteettgttgeetaceetgteeatagtgeetggeacataggeact gaaacactgcatgttaatccacacccaccccacctatgagtgtagtcaaagctggtaagtgacaagggctttcgtggaa acttggcctgacctaatgttgggcatcaggttacccaaagagcttcagggaaatgagaaaggacttgcaggtcttgatga gaatggagggtaactgccaatgagggctttggctttagcgaaagtctgaaagggaagccataggaacttaaacgtaccg actataaagctctgagaaaagctgatgttttagaaagaccatacattctaggtacaaatacctaaaaaactaaaaaataag tacgttggccaggcggggggatcacgaagtcaggagattgagaccatcctgggcccctggtgaaaccccacctctattaa aaatacaaaaattagctgggcgtggtggcgcttgcctgtaatctcagctactctagaggctgaggcaggagatcgcttga ${\tt accccggaggcggaggctgcagtgagccgagatcgtgcactgcactccagcctggtgacagcgagactcttgtctcaaaccccggaggcgagactcttgtctcaaaccccggaggcgagactcttgtctcaaaccccggaggcgagacctgcactgcactgcactgcactccagccttggtgacagcgagacctcttgtctcaaaccccggaggcgagacctgcac$ aaaaaaaaagtacattgctataagagaagtgcacacggatactagtagttaattcagtcacatctgtgaaatagcttata aaatgctacttttaaacaagctgtttttatgaaagggcttgtaaatgtttatggtatttaagctacctctctagccataa tttctcttacagctgtttgcagacaaggtcccaaagacagcaggttggtccattttctaagtttaacaaagatgttccaa attttogtgototgagoactggagagaaaggatttggttataagggttoctgotttcacagaattattccagggtttatg tgtcaggtacgaaatttactgaattttattttattttgggttgctcccttcatttgggattgagccagaatatttcaggat acacatatetgaactgttactetaccattteggttetatttaaccettetatteagtttgaacttgggtttaaagtttga accttgcagatttggcacacttcatggttatgttgtcagaagtgacatttttcctatatgttgacagggtggtgacttca cacgccataatggcactggtggcaagtccatctatggggagaaatttgaagatgagaacttcatcctaaagcatacgggt cctggcatcttgtccatggcaaatgctggacccaacacaaatggttcccagtttttcatctgcactgccaagactgagtg tgatacagaatgtcagatactatgatagaaacttggcccttagctgggtggttgaattaggtgctacttttttgagatgg agttttgctctgttgccaggttggagtgcagtggcacaatctgggctcactgcaacctctgcctcctgggttcaagcgat ttcacgccattctcctgcctcagcctcccgagtagctgggactataggcacatgccaccatgcccggctaattttttgta tttttagtagagacagggtttcaccgtgttagccaggatggtctcgatctcctgacctcgtgatccgccgccttggcct cccaaagtgctgggattacaggcgtgagccaccgcacccggcctatatgtgtaactctttaatggtaattggagaatcat tggaggctgcttgtttgtggttgccagtcataatgattgttcttccttttcaaggttggatggcaagcatgtggtgtttg gcaaagtgaaagaaggcatgaatattgtggaggccatggagcgctttgggtccaggaatggcaagaccagcaagaagatc accattgctgactgtggacaactcgaataagtttgacttgtgttttatcttaaccaccagatcattccttctgtagctca ggagagcacccctccaccccatttgctcgcagtatcctagaatctttgtgctctcgcagttccctttgggttccatg ttttccttgttccctcccatgcctagctggattgcagagttaagtttatgattatgaaataaaaactaaataacaattgt cctcgtttgagttaagtgttgatgtaggctttattttaagcagtaatgggttacttctgaaacatcacttgtttgcttaa gtgtactattagccatggtcaaccccaccgtgttcttcgacattgccgtcgacggcgagcccttgggccgcgtctccttt

gagctgtttgcagacaaggtcccaaagacagcagaaaattttcgtgctctgagcactggagagaaaggatttggttataa gggttcctgctttcacagaattattccagggtttatgtgtcagggtggtgacttcacacgccataatggcactggtggca agtccatctatggggagaaatttgaagatgagaacttcatcctaaagcatacgggtcctggcatcttgtccatggcaaat gctggacccaacacaaatggttcccagtttttcatctgcactgccaagactgagtggttggatggcaagcatgtggtgtt tggcaaagtgaaagaaggcatgaatattgtggaggccatggagcgctttgggtccaggaatggcaagaccagcaagaaga tcaccattgctgactgtggacaactcgaataagtttgacttgtgtttttatcttaaccaccagatcattccttctgtagct caggagagcacccctccaccccatttgctcgcagtatcctagaatctttgtgctctcgctgcagttccctttgggttcca tgttttccttgttccctcccatgcctagctggattgcagagttaagtttatgattatgaaataaaaactaaataacaatt gtc (SEQ ID NO:12059) gegatgetgegetgegetgegeteeegetggeteggeetgeteteegteeegegeteegtgeegetgegeteeege ggcccgcgcctgcagcaagggctccggcgacccgtcctcttcctcctcctccgggaacccgctcgtgtacctggacgtgg gggcgacttcaccaaccacaatggcacaggcgggaagtccatctacggaagccgctttcctgacgagaactttacactgaagcacgtggggccaggtgtcctgtccatggctaatgctggtcctaacaccaacggctcccagttcttcatctgcaccata aagacagactggttggatggcaagcatgttgtttcggtcacgtcaaagagggcatggacgtcgtgaagaaaatagaatctttcggctctaagagtgggaggacatccaagaagattgtcatcacagactgtggccagttgagctaatctgtggccaggg cgccgaggaaaaccgtgtactattagccatggtccgggaacgcaacatgaaggtgctccttgccgccgccctcatcgcgg ggtccgtcttcttcctgctgccgggaccttctgcggccgatgagaagaagaaggggcccaaagtcaccgtcaaggtg tattttgacctacgaattggagatgaagatgtaggccgggtgatctttggtctcttcggaaagactgttccaaaaacagt ggataattttgtggccttagctacaggagagaaaggatttggctacaaaaacagcaaattccatcgtgtaatcaaggact tcatgatccagggcggagacttcaccaggggagatggcacaggaggaaagagcatctacggtgagcgcttccccgatgag catcacgacagtcaagacagcctggctagatggcaagcatgtggtgtttggcaaagttctagagggcatggaggtggtgc ggaaggtggagagcaccaagacagacagccgggataaacccctgaaggatgtgatcatcgcagactgcggcaagatcgag gtccgccacagggctctgagctgcactggcccggtgctggcatctggtggagcggacccactcccctcacattccacag aaaaagaaggtgctccttgccgccgccctcatcgcggggtccgtcttcttcctgctgctgccgggaccttctgcggccga tgagaagaagaaggggcccaaagtcaccgtcaaggtgtattttgacctacgaattggagatgaagatgtaggccgggtga tctttggtctctttggaaagactgttccaaaaacagtggataattttgtggccttagctacaggagagaaaggatttggc tacaaaaacagcaaattccatcgtgtaatcaaggacttcatgatccagggcggagacttcaccaggggagatggcacagg ccaacgcaggcaaagacaccaacggctcccagttcttcatcacgacagtcaagacagcctggctagatggcaagcatgtg tctctgctcgctgcaacctccacctcctgggttccagcgattctcctgcctcagcctcccgagggggtagctgggactac aggtgcgcaccaccatgcccagctaattttgtatttttcgtagagatggggtttcaccatgttgtccaggctggtcttga ttttttgagagaggtcacactctgtcgtcccggctggaatgcagtgatgcgatcaccgcccactacagcctcgacctcc ttttgtagagacggcgtctctctaagatgcccaggctggtggccggtgtcgaactcctaagatgaagcgatcctccccgg 50 taatgtetttgeetgaagaaattegettttaaattgtgaettatettteaeeeaaaaateaaageaeaatteageeeega ggcggggcggtaggagctgggcgggggcaggggcagggaaagaccaggagcagagattcaaaaagagtaagaggcaaaa tgtgcataatgcatettcacaggtaagagcctggccaggctectgttttaatggcttcctcctgaagaagattcaagcag agtgtaagatattttcggaaagtagagcattttgaaagcatttcataatctctcaaaaaccggagactgctcctgtcccac ggggcccgcgtccgcccgcctcatgtggccgcgccctgtcctgtccgacgcacgtgctcggcggccgcgctcaggt ecgegeettgagagtegttgteegeeetagettggeetgggegeegeagaeeggageeagaageaegetegegggggett gcgaccgccttcctgggaagctgtcccctggcaggcatgggtgctttacatcctgagctgggaagctgtttgcttgaggg tttttctcaaggatcgaggcggtgtgagcccgtccatgctcggtcctgtagatcccgggaggccatgttataaaagga gacttgctgggatgtgacgggttgccacttgaaatatcttccatttggataaagtaggaatatttatacatgtgccccaa acgtccctccgtgtcccccacccccaagcggaaatgtgaaaatgggccttgccttgctgtgcccaaggaccgccttcc ggccacaaggcaggcctcttccgaccaaggtggattaccagtgattacctaattagttttgagagcgttaaatgagttct taaagatcagttgtaattatagcatagtatctaaacttggcgcgtgtcttcaaagttaaatattgagtacgattccgttc cagttaacatggatagaccttagggagtagcgaaataggatgttagtggttttattcctttaaatcacatctcaaaaggc caccaatggctagtttggatcttattccgaaaatagattgatcctcatgcagtcttcgtgaggacagagcgatttccttg
ttgcctaccctgtccatagtgcctggcacataggcactgaaacactgcatgttaatccacaccccaccccacctatgagt
gtagtcaaagctggtaagtgacaagggctttcgtggaaacttggcctgacctaatgttggcatcaggttacccaaagag cttcagggaaatgagacttgcaggtcttgatgagaatggagggftaactgccaatgagggctttggctttagcaa aagtctgaaagggaagcataggaacttaaacgtaccgactataaagctctgagaaaagctgatgttttagaaagaccat acattctaggtacaaatacctaaaaactaaaaataagtacgttggccaggcgggatcacgaagtcaggagattgag

accatectoggecectogtoaaaccecacetetattaaaaatacaaaaattagetoggeotogetogectogectotataat ctcagctactctagaggctgaggcaggagatcgcttgaaccccggaggcggaggctgcagtgagccgagatcgtgcact tagtagttaattcagtcacatctgtgaaatagcttataaaatgctacttttaaacaagctgttttatgaaagggcttgt aaatgtttatggtatttaagctacctctctagccataacgtattatacattcaagaaggttcaaaaccagatattacatg aaaccaatctttattttttaccccactactaggtaagggcctggataccaagaagtgactgctcatctaatccataaagc tatgttaacagattggaggtagtagcattttcattacaagtgactaaaagaacagctgtttacccctgatcgtcagcag tgcttgctgttccttagaattttgccttgtaagttctagctcaagttggggggtggtgatagacatttaagaagccatat atcttttcagaagtaggtgtgatgtactaaaagtttgagacactttctagaagtctcactatttaagttatgactagtat tggatttttggcatqtctttgggtttcatgtttcttaacccaactqcctgcagggccttatggctgtcaggagcagttct tgggaattaaagtaattactgaagaagtattctagtgagaaaatgaatttatgactcagaagcccctaaagacatgggta ctaagcaacaaaataagcagatgttaattaactgtaattttctcttacagctgtttgcagacaaggtcccaaagacagca gtatgtatatatgtgtttaatttttttaaacagaaaattttcgtgctctgagcactggagagaaaggatttggttata agggttcctgctttcacagaattattccagggtttatgtgtcaggtacgaaatttactgaattttattttatttgggttg ctcccttcatttgggattgagccagaatatttcaggatacacatatctgaactgttactctaccatttcggttctattta accettetatteagtttgaacttgggtttaaagtttgaacettgeagatttggcacactteatggttatgttgteagaag tgacatttttcctatatgttgacagggtggtgacttcacacgccataatggcactggtggcaagtccatctatggggaga aatttgaagatgagaacttcatcctaaagcatacgggtcctggcatcttgtccatggcaaatgctggacccaacacaaat 20 ggttcccagtttttcatctgcactgccaagactgagtggtaagggtacaacatggcacactaaccacctgactaaatgaa aagttgccctggggggaacggaacaaacactacttttcttcaacctttgcttccacagactttttcatccctaagatact ${\tt gctgggttggttgaattaggtgctacttttttgagattggagttttgctctgttgccaggttggagttgcagttggcacaatct}$ gggctcactgcaacctctgcctcctgggttcaagcgattctcctgccttggcctcctgagtagctgagaatacagatgtg tgccagcatgcctggctaattttttgtatttttgtggagacggggtttcatcatgttggccaagctggtcttgaactcgt gettttttttttttttttttttettetcagactggatetegetettateteccaggttggagtgcagtggtgccateteage tcactgcaacctcctcccgggttcaagcaattcttctgcctcagcctctcaagtagctggaactacaggcatgcaccaccaccaccagctaaattgtgtattattagtagagcgggatttaccatgttgtccaggctggtctcgaactcctgggctcaag tataggcacatgccaccatgcccggctaatttttttgtatttttagtagagacagggtttcaccgtgttagccaggatggt ctcgatctcctgacctcgtgatccgccgccttggcctcccaaagtgctgggattacaggcgtgagccaccgcacccggc ttccttttcaaggttggatggcaagcatgtggtgtttggcaaagtgaaagaggcatgaatattgtggaggccatggag gctttgggtccaggaatggcaagaccagcaagaagatcaccattgctgactgtggacaactcgaataagtttgacttgtg ttttatcttaaccaccagatcattccttctgtagctcaggagagcacccctccaccccatttgctcgcagtatcctagaa tetttgtgetetegetgeagtteeetttgggtteeatgtttteettgtteeeteceatgeetagetggattgeagagtta agtttatgattatgaaataaaaaactaaataacaattgtcctcgtttgagttaagtgttgatgtaggctttattttaagcaactaagtgttgatgtaggctttattttaagcaactaagtgttgatgtaggctttattttaagcaactaagtgttgatgtaggctttattttaagcaactaagtgttgatgtaggctttattttaggctaggctgatgtaggctgatgtaggctttattttaggctaggctgatgtaggcatgtacggcgagcccttgggccgcgtctcctttgagctgttttgcagacaaggtcccaaagacagcagaaaatttttcgtgctctg agcactggagagaaaaggatttggttataagggttcctgctttcacagaattattccagggtttatgtgtcagggtga cttcacacgccataatggcactggtggcaagtccatctatggggagaaatttgaagatgagaacttcatcctaaagcata cgggtcctggcatcttgtccatggcaaatgctggacccaacacaaatggttcccagtttttcatctgcactgccaagact gagtggttggatggcaagcatgtggtgtttggcaaagtgaaagaaggcatgaatattgtggaggccatggagcgctttgg gtccaggaatggcaagaccagcaagaagatcaccattgctgactgtggacaactcgaataagtttgacttgtgttttatc ttaaccaccagatcattccttctgtagctcaggagagcacccctccaccccatttgctcgcagtatcctagaatctttgt gattatgaaataaaaactaaataacaattgtc (SEQ ID NO:12060) gatetgtetagggetgteagtggagtattgaagtececeaegattattgtgttaetgtetateteatttettaggtetat tgcaatggcatgatctcagctcactgcaacctccgcctcctgggttcaagcgattctcctgcctcagcctcccgagcagc toggactacaggcatgcaccaccacacctggctaattttgtatttttagtagagacaagggttctccatgttggtcaggc tggtcttgaactcccgacctctggtgatcttcccacctcagcctcccaaagcgctgggattacaggcatgagccaccgtg cccggcccatagtaactgttttataaatttgggagctccagtgtttagtacatatatgtttagaattgtgatatttccct gttggacaaggccttttaccattatataatgccctcttttgtctcttttagctgctgttgctttaaaatttgttttgtct gatataagaatagetaeetetgeteaettttggtgtetatgtgeatgaaatgeettteteeaeeeetttaetttatgtga gtccttatgtgttgttaggccagcatcaccctaatatcaaaaccagcaaaaggacataccaaaaaaagaacattacagacca atatttttgatgaacacagatgctaaaatcctcaacaaaatactagctaaccagttgcaacaacataccaaaaagataat ccaccatgatcaagtagtttegtaccagggatgcagaaaaagcagcagattggtttgtgagttcttatctattctgcaattctgtagaaaaagtggagcatttacattcaatgttagtattgaaatttgaggtaccattgcattcatcatgct ctttgttgcctgcgtactttggtttgttttttgattttgctctttaacttgtatttttgttttataggtcctgtgttgatt tgtagggtctctgctgagaaatctgctattaatctgataggttttccttataggttacctggtgcttctgtctcacagct cttaagattettteettggtettaactttgtataacetgaegaeaatgtgeetaggtgaatatetttttgtateeatege ccaggctggagtgcagtggggcaattttggctcactgcaacctctgcctcccaggttcaagcaattctcctgcctcagcc tttgccatgttggccagcctggtctcaaactcctgacctcaggtgatccacctgcctcggcctcccaaagtgctaggatt acaggcgtgagccccgcacccgagccctgatattaatttttaaattaaaagactttattttaaaagcagtttgaggtt tacagaaaaactgagcagaaagtacagtctctatataccccctactccctgcccccagttttccctgttattaacatttg tgttaatgtggcatatttgttacaatcagtgaatcaatattgataaattaaagtccatatgttagtgttcactctgtgtg ttatacagttctatgggttttgccaaatgtattaatatgtcatgtatccatcattacagtatcatccagcataatttcac afctttttaatataccatagttttgccttttgcagaacatcatatcattagaatcacaataatatgtggcttttcagac

gtaaatgcctaaggcatatttagttttgtaagaaactgctaaactatcttccaaagtatctgtaccattttgcattcca ccagctatgaaagagtttctgttctacatcttcacaaacattggtgttatcagtgttttggattttagccattctaattg gtgtggagtggtatctcattgttgttttaatttttgcaattccctaatgacatatatgttgagcatcttttcatatgcata tttaccatctgtatatcttctttgggcatatgtccattcagatcttttgcacatcttttcattgggttgctcattttctt attgagtttttaagagttcttcatatatttttgataacagtcctttatcagatatgtcttctgcaaatattttctcccagt ctttgtcgtgtcttttcatttacttaacagtgtctttcataaaacagaaggttttaactttgatgaagtctaacttgcca atttttttttttcatggattgtgctttgtgtgttgtatctaaaaactcattgccaaacacaaggtcacctctatgttctcc tatgttatcttctagaagctttgtagttttctgttttacatttataggggctgtgagaaggtgacagaggttacatgagg acgaagacacagcaagaaagtggccatclacaagtcaagaagtgggccatcaccagaaaccaaattactggcaccttgat cttaaacttcccagcttccaaaactgtgagaaataaatttctgctgtttaagccatgcaacctacagtataagttatagc ageccaagcagactaagacagaacccttagcatattaatcatagttactttaaatctctggtcccataattccaaaatat taatttttctgttcaaagcaaggcatgatgtactgggtaaagggaactgaactgaggtagataggtgtttagaatgaaat caaaaaatagagtatggaaaaggggtgaagtaacttcatagtggaaaaacctggcaaacactaccttggttagctgagca aagcettgatatggtgtgatgagaatggaatattacetttgtgatettteteteteaaacaettataateceattetaatea 20 tgaggaaagcgtaagacaaatcccaattgagggacattctacaaaatacctgaggagtactcctcaataggtcatcaaaa caagtettagaaactgtcacagtcaagaagaaactaaggaaaaatgacaactaaatgcaatgtggtatcatggactggct cctagaacagaaaaagtcagtatataaaaactaagaaaatctgaataaagtatggactttagtgataataatgtatcaat attggtttattacttgtagcaaatgtaccatactaatctaagatgataataaaaacaataactctgtgtagggccaaagg gagggaagtgggctgatacgggaactctccgcactatcttagcaactttttggcaaatctaaaattactccaagatacta agcttctttttaaaaaaaatcacaaaacctgaaaaattttaaagaaatataaaaatttaaaaaattaaaaagagtcaaatcc cagetgtatttttattaattatgtaatattgtacaagtcactetetgagetttggtgteeetgtttataaaagtgataga atacatttttgagtgacatctgaaagatagcagagtaggaagctccaggccctcctttccccatgtaatctgtgaaagga aattcaatttcgggacgccaaactcatttagcgaaagggaaaagtcaaagtgggaactgggtcatgcaaacctgcctccc acttttgggtcctcaataagatggctacaagatgaaaagctacatgcctccgccatattttgcccacaaggaaattccta gtgagttgttaaaatttcaccgtagcaatgcaaattgatagcttatctttacaggtgcagtcgccccggcgcactagac ataaatgcacatctgagtgttcccctgccccattttgtccatgttatcttatgtaaaatgcatattccccacatttttcc ctcttacatgaaaattgtgtacttctcagtatcgcaccctttcccctttaaattttgagccctcaaaatcatcttcggag ctcaattgacatctggtaaccacgaagggatcctgagtgaaagtgacccagcctgcagtagctcacctctcagtgcttgg caceggettggteacettatageecaaaetgagaggacaatttgeecaaagtegaggacetettteeagggatetetgate aacaaccagctggtgttaatttcctgcttacccttagagcgctcagaaatcatataatttgcgtgatcattgttagtttt tgtgtgtgtgtgtatgtgtgtgtgtgtgtttttggtcctttcccctatcggatttgaccaattctgaaccttcaagctc atgagtgtgaaattttccactctgaagaaacagaacacattgctccctcagccctttggggcattctcaggcgactgag aatcacatgagggtttctgggagaaatgctccctaagacatgcagcagctctaaataggtttccccctcaaaagaacata cttagggtctaatctcagccagcagatgcatataaggaactgacccctcccaaactttgagcccctgacacactgtgcca ggtggccacaacgctggtggaccaaactggttcagggtgtaatggccctgtgaaaagctaggtttgcaagcagcacattt tgggtccaacacaccccaacttggtcaaatccaaaggggaactctaaattatagagaacaaggcctctaagaccccag cagttgcagaatataaagttcccctcttagaaactccagcagggtatatgcaaaatacttatggtgaatcatcatgcaaa tatttaaccaagcggaccactataactaaagcagattctaagttacaatggcctaaatggggatcttttgagatgcccaagcagattctaagttacaatggcctaaatggggatcttttgagatgcccaagcagattctaagttacaatggcctaaatggggatcttttgagatgcccaagcagattctaagttacaatggcctaaatgggcatcttttgagatgcccaagatgcccaaatggcctaaatggcctaaatggcctaaatggcccaaatgggatcttttgagatgcccaaatggcctaaatggcctaaaatgggcatcttttgagatgcccaaatggcccaaaatggcccaaaatggcccaaattagtgtacctgtgaaccaggatggagaatgcagacaaaaaaccaaaccagaatgggacagctattttcagtggt caacaaggctgtttatttcacctgggtgcaggtgggtgagtccgaaaaagatgtcagcaaagggagttagggggc agttttataggatttgagtaggtagtgtcaggaggcccgacactcctgtcttatattaataagaaaaacaaaacaag atagtggcgaagtgttggggtggcaaaaattttggggggtggtatagagagataatgggcaatgtttctcagggctgcttcgagcagattagggcagcgttgctt tgtggggttgttagaagcaatatttgttgtacagaatgattggtgatggcctggatacagttttgtatgaattgagaaac taaacagaagacacaaggtccgaataagagaaggagaaaaacaggtattaaaggactaagaattgggaggacccaggaca gaaacggctaggagagagtgagattgatagtgtggtggagatagctggggagaggtagaggtggcataagaatgggaac gagaataagagtgagtaaaaaagtaaagaataggacttcatcagggtgaaagtaccggactgtgccttgccactgaagat cttttatccacttcaagagagatttaagggtggtggtttgagataaaaccaggagataccagttatgatggtttggagga aaagtgtaaactgggagtgtaaacaagggcaggcatttatgagtagttgagaatggtgaataggagtatgactagacag aagatagtagggatgacaagtttttggggtgcagtccaagttgggctggtgtctggaatgagactggggcctaataaaaa ggagtgtccatacaggagctcaaatgggctgtaccctgtagcatcccgaggacaggcccaaattctgagaagggcaagtg gtaaaagtattgtccagtcctttttaagttggaggctgagcttggtgaggtgtgtttttaaaagaccattagtccatttt acctttcctgaagattgaggatgggaaggggtatgaaggttccactgaataccaggagcctgagaaactgcttgggtgat ttgactaataaaggccggtccgttatcagactgtatagaggtgggaaggccaaaccgaggaattgtgtctgacagaaggg aagaaatgaccacagtggacttctcagaccctgtgggaaatgtctctacccatccagtgaaagtgtctacccaagaccaag aggtattttagtttcctgactcagggcatgtgagtaaagtcaatttgccagtcctgggcaggggcaaatccctgagcttg atgtgtagggaagggaggggcctgaacaatccctgagaagtagtagtagcagatggaacactgagaagtgatttcct tgtgggaagagattgataggtggaagtttcagcgggggagtaggtggagdgaccaatgaaaaggagaaaaactggcagt gagggacagaagttggaatgctagctgcttttttagttatcttattagcataagtgttgccttgagcgatgggatctgat gccttttgatggcccttgcagtgaatgactagcttttttggaagtagagcagctttaagaagagtttttattaaggaggc attaattatggaggacctttgtgtagtggggaaacttttttcgctcatataacagcatggtagtgcaggatatggaagg catatttaaagtcagtataaatattaacacatagtccctttgcaagagtgagggcctgagttaaggcaatgagtttggct cagtgattggcgattaggcctggtggaactgccatcaagtgtgatcagggtgaagaacaggaaagaaggaaatatgggga

aatqqaqtqaatqccaqqtqqatcaqaqaqatacagtcatqqqqqtcaqatqtqqtatcaqqaataatgtqqqaggccgg gaagtgtgaggaggaaaatagattttgaaagttatgggaactgtagagggttagtggagcatagcttgtgatttttaggg cctctaaaagtattaaagcggcagcaatgaggtgtggctgtagcctaggaatagtcagggaagcggataatttagttaaa atgtctcaatctaataagggagctgggcaggtggggataactaaaaaagagtgcataaaaagaatgttgtccaagttggca ccagagttggggagttttaaggggtttagaagccttgctgtcaatacccacaacagttatggaggcaagggaaacagtcc acccaaagtgtctgtgatggtccaggaggtttccgaggcgattaggcaatgtcagtcttcaactgctaagccacgaatat ctgggaaggagtcagtcagagagccttgggccagagttccaggggatctgggagtggctgccaggcgagttggacagtcc aatttccagtggggtcccgcacagatgggacatggcttaggaggaatcccgggctgcgggcattccttggcccagtggcc agatttccggcacttgaagcaagatcctgggggtggcagtcctggaggaacgcctggctgctgcagttcaggtgttttga agttettgtgtgctggagatgtggctggggtttctctcacagtggaggcaagtaattgcaactcagaaatacgttgctac taatttttggagctttttctaatgtcaggagcaggttgggtaataaaatgcatattgagaataagatggctttctggccc ttctgggtctagggcagtaaagcatctaagggttgttgccaaacgggacatgaactaggctggatttttatatttgatga aaaagagcctaaccactaactgatttgggagaggtcagataaagaaaaaggagaattaaccttggctatgccttcagctc cagccacctctttaagaggaaattgttgggcaggtcggggaggctagtcacagaacaaaactataagctggaccaggtg tgaggagggaggtgataaaaggattataagggtgggagagcagaggctgaggaagaattgggacctggctcggcgtggca aggagcagcctggggaggaggggagaggtcagataggtccgtagaaaaggaggattcaaaaggactcagagcttgggatgg agactgaaggaacaggagagaaagaagatttgggacaagtcgcactgggagcagagactaaggaggatcaatgtgtaaaagaatgcctggacgtcaggcacctcagacccatttgcccatttttttgaccaaaatcatccaggtcttgtaaaatgg agaaatcaaaagtgccgttttctggctatttagaaccattattgagtttgtattggggccaagcagtgttgcagaagaaa ataagacgcttaggttttaggtcaggcgagagttgaagaggttttaagtttttgagaacacaggctaagggataagaaga gggaatggagggtggaaggttgcccatagtgaagaaggcaagcccgagaaaatagagggtagagacatggagaaaggggg aaatgtgtctcctttgtctctactagagaggaaaaagaactagaattggaaggacagagagattgaagggtagcgagaga gggagactgaagggtggcaagagaggctggagaagagagtaaaaaagaccacttacccgatttgaaattggtgagatgttc cttgggctggttggtctgaggacccgaggtcataggtggatctcctcatggagtgagggcgaggacaggggactggtctc ccaaaggagtcctcctgtcccgggtcttcggcaccaaatgtcacactcgtccgtgtgaagagaccaccaaacaggctttg tgtgagcaacaaggctgtttatttcacctgggcgcagttgggctgagtccgaaaaaggagtcagcaaagggagttagggg tggggcagttttataggatttaggtaggtagtggaaaattacagtcaaaggggttgttctcttgcgggcagggctggg gtcacaaggtgctcggtgggggagcttctgagctaggacatttcacaaggtaatgtaatcagttaaggcaggaacaggcc attttcacttcttttgtgattcttcagttgcttcaggccatctggatatatacgtgcaggcttgggctcagaggcctgac aaccacctcatctccctacaggaggccaacaaacaacttagaaatgctaaccaagaactctgtaatcttgtatctcttt aaagaaatcctcagaattccttacttcccccttggtacctccccctacacccctactctaccctgaccaatctgaacttc accccacccctcatgattccctgacagctccaatggcaacatctcatctggaagatgtgggaaaagggggaccgtgcagg gatateteteatgateaccetatitttgggaacaactgetaacaggtaggggaaccetggtaattgtetaccaacaccetg gtcaaaggctgaattccaaggcataaagaatttcctgacccccataaagatccaattgggtttgagtatttgagctcatt gtcagaacctatgacccaggtcattcagacttttatcagctagtccacatgttggtctcagaagctaaagctaaggaatg gctgggaaaagcacaatggtcagactctatagcagatttgacccctgaaggcccaatggagccaacaacaaccagccccca caaatccagaagacaggcacaaaggtgcaggaatgagacaaccactctattaaatatcattccttcagtgttccaaagg aactttaaaacaacattgtgggatgtcagctgattgctttgaaaacaataaaaatgatacattattaaatgcaaatttct taaacggactagatgatgatttagccacccttgtaaaacacaaattggaccacagccagaactaatgaactagttaactt agctgaccaattatcccgcactatgataaaacaaggaaaaacagaagattgcccaagttatgcatttacagctaaagcaa 50 ctgtaaatgaccgagacaccttatgatggattgccttaggctgaaacaaaagaaaaggcagaatgcaactcaggaagaca agggtgctccaaggaaatacaggggtttcacctctccaaatattctaccctgacaaaccaattgggggagattaatata ataataaaccatgagtttacaactgccttaactgacataggtgtgactatctctgaaaaatcccaccttatttagaaacc ccattcctcagagtaatgaaagaatgaacatggtgggtatgtctaataaaatgatctcatgttttaagtccaaacccgta ccttagggttcatcaggttccactaccctgtcgcaggctctaagtgtgacacactcagtaggtcccatatgtttctaata 55 tgcactggggcccctgtcaaacttttgggctgtgatctcaacatccataatgcccatatctctttttcatcaaaaggtga aacttttttagaattggagccaggagaccaaaaataccatatttaaaaattgtcctgacaacgtacaatttagtactagta atgttaaaatgtcatcttgtgaccaggaaaataaaatagagacagagaaggaaatattagggaagaagaggaacattgg aatacagagcaggaaacagtaaaactccttttagtttccccagtcttcctgttaacacccagaagcagcacttgctcaa ggatgtgtcctcccacttatagtctcagtcaaatacagatacagagaaagtattctcagccattccaataaaggtagaga taaatccaaagaaacccctatccaaccttaaacactatcctctgcaaaaggaagccatagatggaattgctcctgtcata caagattatetgagaaacgggctcattattccctgcacaatcccctgaaacagccctatattccctgtaaagaaactaag cgggagaggatggaaatttgtgcaggaattgagggcaataaacaatatcataattctcaggcacacagtagtccccaacc cacaaacccttCtatcacctatatccactaccagccagtatttctcagttgtggatctctgcagtgccttctttagtatt cctgtagaaccagacagccaatatttgtttgtctttatttggaaagaatggcaatatacgtggactataatgccccaaag gtatacagaaagtcccacttagtgttcccaaatattagaagctgatttggagaattaaatattttcccagggctcaacat 65 tcatctactctcctttgttcaqacacactctcttcctctcaggaagatagtctatatttactcaaacagccaccaaggga cacaaatgtctaaagacaaacttcagctatgcttacctgaagttaagtatttgggacatattatctcagccaaaggactg agtattaaccctgatagagtgaggaattttagctttcccaatgcccgtcactaagaaacaacttagagtattttggggcc tggcaggctattgtagaaactggataccaaatttctcccttatggctcaacttcagtgtacatacctaaaaaatgaacaa cctgatcccatcatgtggactccggagggacaatcagctgtacaacaaataaaggaaattctgactaatgccccagcctt agggcacccgaactacaaattgcctttctcccttttcatacacgaagttggaggtactgcatccggagtactgacccaga aacatggtgatcatcagagacctataggctattatagccaacagctggaccctgtggctcaagggctgcctccctatgtg agagcaatagcagccacggcccttccgtataagtctgttgaagaaataattataggttccccccttaacatttttgtgcc acattetettgagaccettetaaacteteateatacacaacaetgtetgteaactggttageetettatgaaattttge 75 ttttatcatctcccaatattactagttcctgctgtaataatcttaatctggccactctcttgccaggcccttctgacaaa accccctcatgactgtgttttgatgactgacttctcaccccaggacagacctacaagagatgccactggataatgctga gatagaatggtatacagatggatcttatttaagaggaggatggaaattttatagcaggatatgctgtggtttccttac tagaggtaattgaagccaatcctctcccccaagccagatcagctcaagtgaccaaattggttgccctgaccgaagcttgtcaattggcaaaagacaaggctgcaacatttacactgacagccactatgcttttggggttgctcatgactgggatgttat ggaaagagagagatatttaacccctcagggcaacccataaaaaatggacaagtatcagagttgttagaagctgttcta aggccgaggcaggatgattataaaaatcccaggttggccaggcgcagttggctcacggcctgtaatcccagcacttttgg aggccgaggcaggatgatcacgaggtcaggagatcgagaccatcctggctaacatggcgaaaccccgtctctactaaaaa

tacaaaccccqtctctactaaaaatacaaaaaqttaqccqqqcqtqqtqqtqqtqqtqqtqqtaqtcccaqctactcqqgag gctgaggcaggagaatggcatgaacctgggaggcagagcttgcagtgagccgagatggcgccactgcactccagcctggg gtaagtcagggtaaccaatttgctgaagccacagctaaaagagcagcattcaagccatcagcccaagttggaaaatggc cataaaacccaaaacacttaaatacatgttgaaagaaacccagagcatagctcctacaaaagagaaatctacttggaaac aggcagggggatacttgtctcccaaaactgaaatatggtgtggacctaattattccattccaagaaacccattattccaa tggaatgtcaggtgtcccttatgaaatatgttcataatctaacccattggaatccagataaaatatatcctggtgtaaa caatattactqqaaaccatccttcacagtggcacaaaaagtttactctcagccgggcaccatggctcacacctgtaatcc cagcactttgggaggccaggcaggtagatcacctgaggtcaggagttcaagaccagcctggctaacatggcaaaaaccct gaatcgcctgaacccaggaggcagaggttgcagtgagctgagatcacgccattgcactctagcctgggcgacaagagcga aactccatctcaaaaaaccaaacaaaaaagtttactctcaatgtgttatctgtcccaaacataacccaggaaaacccctc catggggcccagggtcattttccccttccggctgaccttttgaggtatgacagcttgattttatccagctgccatcatct 15 cacgacagttggaaaaatcctactagaaaaaattgtcccactgtggggagtcccctgtgaacttcacagtgatgggggat catactttactggccaggttactcaaaatatttgtaaaatttggccatatttcaacatttccattgtgccaccatcccc agtcttcaggcctggtggagaggaccaatggaataattaaaacacaattggctaagttcacagaggcatttcacctcccc tggcccaaagcactacccctagtgctgcttatactacgatccactccttttggaaaacatcaactgtctccttatgaaat tataacaggaaggcccatgtgtatgggaacgaacataaccaatccaacttttctccagggagatatattgcaatattgtg 20 agggactcatttatcatcttagaaaaaaccaaaatttgttaaaaaattcctttcacggtgcgctccccgaagataaggtg cctggtcatctgcaacctggagatttcatctattggaaaagacatctaataaaggattcccttcaaccctgatggaaaggg cccgtaccaggcactactgactaatccatgtactgcaaaattaaagagtatagattcatggattcacatctctcatctta aaaaggcacaacctcctgagtggactgtaactcccaccaaagaccttcacctccggttcactaaacctcaacctgcaacc caggattagaagcagacaacagctgttgtggactgcttaaacccaagacacagaaccaggcctgtatacaaagggaacgcctctgtttattgtacagtaaccattacaattattgtcctagatataccggcaactgctgtcttataaatgacagggcacttgccttgtctgatttaacaccatttagtactaaaatgaatttcgcaaccttgctattattaatcctatatccctacact 25 ttottgccactgccacccactgatgcccatgaaacaaacctgtttctacaatgggctcagcattatgcagacaaattaca aagaacacctgctggatatgcagactcatgcctctttccagtggctccagcctggcatggtggatatcccccttccaagg 30 atacatacaattqqcccattaaaaacactcttaagaacaagggacatgggaaaagattttgaatggaaaggaccaggtca ttagctctcactttagcatccccccagctaaaacagaaggtggtaaccaccccaaacaacagctcattttcaaaatgg aataatqcaaatttqqqctgqatttatctggctcacccgttcgtctggccaactcagccaaaattctcctctgtgctggg agaaagaaaccatatcaaggacctatggccaaacagtacgagagatacggggtggacacctggagaatgctgtgaccaca acatattggctatgtggcactaacttatggccgtggttacctctagggtagttaggatgatgttccctaggttatgcttg ggcacaagacacgtaatccagaccctgccaaaaccagcaaacctttttcatttacaatttcattggacatgttaggtatt ccaattacatccaaaaggccctgaatgatagccacatgagtattgccttgctaagcaatgaggtcatgcttatgaggaaa gttgtgctatacaaccatatggctttagatatactcattgcagcacaaggggggacctgtgccgtcataaaaactgaatg tctaaaaccctcactaatcaattggttgagtagttggtttggatcctggggaacttggtggcagaagctactgcttataa taggaataataatattgtgttctgtcctgtttctgctacaatgttgttacggtatgtgcttgcaaataagttaatgca tgggcgtgacttcctaggaatgagccttcctggtgatgtgggacctaaacttctagaaataaactatcctagcaacagga ttaaataaaaaagaggggaaacctgaaaggaaattaaattttgggaccccccaaactcatttagcaaaaggcaaaagtc aaaatqqqaactqqqtcatccaaacctgcctcccccttttggttcctcaataaaattgttacaagatgaaaagctacatg 50 totoctocatattttgcccacagagaaatttctagtgagttgttaaaatttcaccatggcaatgcaaatcgatagcttat ctttacaqqtqcaqtcgcccctggcccaccagacataaatgcatatctgagtgttcccctgcccaattttgtctatgtta ttatttacttatttattttgagatggagtttcgctcttgttgcccaggctggagtgcaatggcacgatctcggctcacag caacctccgcctcctgggttcaagcaattctcctgcctcagcctccagagtagctgggattacaggcatgcaccaccaat 55 cccagctaatttttgtatttttagtagagatggggtttctccatgttggtcaggctggtctcgaactccagacctcaggt gatccaccegcctcggcctcccaaagtgctgggattacaggcgtgagccaccacgcctggcctttttgttgttatttagt tttatttcatatcataaacttaactctgcaatccagctagacatggaaaggaacaaggaaaacatggaacccaaagggaa ctgcaatgagagcacaaagattataggctattgccagcaaatggggtggaggggtgctctcctgagctacagaaggaatg gtctggttggttaagataaaacacaagtcaaactttaataagttgtccatagtcagcaatggtgatcttcttgctggtctt gccattcctggacccaaagcattccatggccccacaatatttatgccttcttttaccttgccaaagaccacatgtttgt catccactcagtcttggcagtgcagatgaaaaactgggaactgtttgtgtccagcatttgccatggacaagatgccagga cctgtatgctttaggatgaagttcttgtcatcaaatttctccctgtagatggacttgccaccagtgccattatggcaatg tgaagtcaccaccctgacacataaaccctggaataagtctgtgaacgcaggaacccttataaccaaatcctttctctcca gtgtgcacagcatgaaatttttctggtgtcttggaaacttgtctgcaaacagcttgaaggagatgtggcccaagagccca ccatctatggtgatgttgaagaacaaggtggggttgaccatggctgatagtacgggggctcctggcagcagcagcactctgt cctacccctcttacatgaaaattgtttacttctcaatatcctaccctttcccctttaaatttgaagccctcaaaatcac catcattittccaattgacaaaacatttaaaaaataatacagactggacccagcctgcccaactcccagtggagagcaa 70 ggtttccttctattttcataggcaaccagaacaatgttctatgcacattttgtcctcagtaagagggcctctggccaaaa tttggctagcggcccattgggataagaagctaaccaaagcccctgtgttacagtgtaatttagagagcagcatggagagt atcatctcaccaaaggtgaagatagcattacggacatcaggacatctcttactgggagtagtttgaatctatcacaggaa aggaaaatcaggaagcagcttataacaccattactttacttgaataatttcatgactttgatcagccactgcctgactta gatgacatcgatgtggcccagaagttcagcctgggtcagagtagagtggaagaaataaccgtgagagaagaagttgggaa tatcagtattttacaagaaaatggttttggcgattttggaatggatgatcattgagatcagagaaagcagtgcttttgag gatgatgacatgttagtaggcactactgcttctaatctcctattagagtctgaacagagcaccagcaatctgaatgagaa aacttattagtaataatgatggtagtatctttgatgatccccctgcctctctgaggcagaggtaatgttgccagagcag gaaccagccaactatgactgatcaaacaacacttgttccaaatgaggaagaagcatttgcattggaacctattgatataa ctgttaaagaaacaaacgccaagaggaagaggaagctaattgttgacagtgtcaaaaacttggatagcaagacaattaga

gacaggagtagtagaaaaactgttttctttacctgctcagcctttgtggaataacagactactgacgctctttacatgct gtcttacaccacttgtaccagaagaccttagaaaaagggggaaaggagggacagataatttggatgagttcctcaaagaa cttgaaaatccagaggttcctagagagaactagcaacagctacaccagcagcatgatgttattgataagcccattttgga agagccaagccatctccagaagtcagtgatgaggccagcagaacaaatctggatgagtcagctatgcctccaccaccacc tcagggagttaagtgaaaagctggacaaattaacccagagcctgtgatgcctcctcagcaggttgagcagatggaaatac tgeetgtagagetteeccaagaagaaceteeaaatatetgteagetaataceagagttagaaettetgeeagaaaaagag aatgagaaagaaaaggggaaaaaaagatgatgaaggggaaaaggatgaagatgtttcagggggtgatcaagatcaggaag aaagaagatggaagaaaaggactcagcagatgcttcacggtcttcagtgagctcttgctaaaactggagctgaatctatc agtttgcttgagttatatcaaaacacaaacagaaaacagttgcaaagttctacagcttcttggttcttaaaaagca gcaagctattgagctgacacaggaagaactgtacagtaacatcatcgcaacacccgggccaaagttccatattttatgag gagctagaagcattatagctagtgttcatttcactagtgcttacaaattgcccccatgtgtaggagacacagaacccttt ttcatctttgagggaaactgattagatggatgtgtttgtgttctgatggagaaaacagcaccctaaggactcagaagatt 15 a a cagt t caga a cag a t g t g t g ca a t a t t g g t g cat g a t g t t g a g t g g cag t t g a a a g t cat g a t t t t t a t c t t a c g t g a c g a c g a t g a c g a t t t t t a t c t t a c g t g a cgttetteattaetgeattgaaaaggaaaaeetgtetgggaaaatgeetgaeagtttaatttaaaaetatggtatgagtet ttgaaaagaaaaaaaaagcctttccatcagtagtaacactggcaatcttcttgttaaccactctccttagggatggta $\verb|cctgaaataacaaaggtcaccctcttgagattcgttttaagtgtaattccctaatgagcaaacgtgtacgtgaaattgtg|\\$ ttgtgactgatacccttcagctacagataggactgacttggtttaaagtgttctattttgtaaatcattccatttgagtc 20 tttctgatgaacttcgctatctcgaaatctgtcattttagtgaggctccaaaatgagcagaaataggcctgattagagta gagtgactatcaaatagcagactitctaggacctataaatagaagttttaaaaagatgtttggatatatttgactattca acactcctgtgtttggaactttaatagctttgcaacgaaatcctatatccggtttcctataatttaactgaagaaaaaca catccaaataaaggtctatattaacagaccagatagcatcagaaatcatgtgactattatgattatcagaatatgtctta actttttagggcaaaattaacactgaaagttctagcttaagtgttgacactttcgtggggaaaaatcacttttgaaac ccctgtttgtaaaaagacattgtagataattgaatgtttgattttagaaaggtcattggtttcttgttacacattttgtt agtctgttttttttgcttattgggtttaatattgttcttgaaaatagttgatgctatgttatgtataactcttctaataa aagttgtgttataagttgaaacaaattatagtattacagactggctacaataactttataggaagtctgaaaaatactca aagttetatageaaccaageaaacacetagteaagaaaacgatacagteaaaatggttagaaattttgggacatttttac ttgcctgtaccccatccttccctcctggcacacctggggaagcagccctgctcccaattccctcctggaaccccag agagaggaaagtggactttatttgcaacattctaacctgtcaaggggctgcctgaggtactggtctctgttttacctaat 35 tcggaggtcagacagggaaaagcaacatggctggatactcaggctcaggaaaagccacaggaaatgatgggcactactca tgaacactgcagggggcctacaaactcacagatacctggagcaagagatcagaagtagaagaatacaatagaacatctaa gcccaccttctgagaagcagaggtgagactctttaggaaattgagacattttaagcagtcatgcattcaagggaactgga aaacaacaacaacaacaacaacaacagatacccaggccaaggcaaaatgcatagccaaaagaggtctaagaagaccttaa gacctcacatggggctgatcccaaagctgacagcatgccctgctaattagtgaaggtcttccctggcacagaacctactt gtaatgactagcagaggtggctgtttttttgaatgatcaattttaaaaatgaacaaaaaaataacaaaccatgcaaagaa acaggaaaatatggcccattcaaaggaagataataaactgtcagaaactgtccctgaagaaacacaagcatcagaagtac tagacaaagacaaaatgtettaaatatgeteaaagagetaaatgaaaaeteaaagaactaaaggaaatgagaaaaatgacacataaacaaaagagaaatattaacaaagagaaactataaaaaggaaccaaacagaaattetggagetgaaaatacagtat ctgaattgaaaaacgcctagagggattcaacagtagattcaaacaggaagaaaaaagaatcagtgaacttgaagataagt cctttgaaattattgaatctgaagaccaaataataataataataattaagaaaagtggacagagactaagagacctatgg gataccatcaagctaaccaatatatgcattacagaaatctcagatggtgacgggataagaaaggagcagaggaactatt tgaaaaaataatggctgaaaacttcccaaatttgaggaaaggcattgattcacaaatccaaaatcttgctgatctccag gtaggataaacccaaagcagtacataccaagacacattatattctaacaaaagccaaagacatggaacactgcaggggga ctacagactcacagaaaccgggggcaagagatcagaggtaaaggaatacaatacaaagtctaaggccccctcaagaatct 50 tgaaagaagcaagagaaaagtaactcatcatgcacaatggatcttcaataacattatcagtggatttctcagcaaaaacc ttgaaggacacaaggaattgaataccatatttaaaggaaatttttaattgttatttttccataagttattggagttcag gtggtatttggttacgagtaagttatttaatggtgatttgtgagattttggtgacctgtcaccgaagcagtatacactgc actgtatttgtagtetttcatccctcacccactcccactcttccctcaagtcccaaagtccattgtatcattcttat gcttttgtgtcctcatagcttagctcccgcatatcagtgagaacacgtgatgcttggttttccattcctgagttacttca 55 tgaattgtgccgctataaacatacatatgcaagttatcttttttgaataatgacttcttttcctctgggtagacacccag tagtgggattgctggatcaaatggtagttcacttttagttctttaaggaatctccacactattttccatagtggctgtag gccattcttgcaggagtaaggaggtattgcattgtggttttgattttgcatttccctgatcattagtgatgttgagcattt tttcgccatttgtgtatcttttgaggaattgtctattcatctccttagtccactttttgatgggattgtggggtttttcttt cttattgatttgtttgagttcgttgtagattctggatattagtccttgtcagatgtatagattctgaagcttttctccc
actctgtgggttgtctgtttactctgctgatgttccttttctgtgaaaagctctttagttaattagtattagttctttttattgcattttattgcattttggtcatgaaatccttgctgaagccaatgtctagaagggtttttccaa
tgttatcttctagaatttttataggttcttaggtcttaggttaagtccttaatccatcttgagttgattttttataggt
tgtatcttctagaatttttataggtcttaggtcttaggtttaagtccttaatccatcttgagttgattttttgtataaggt ttttgggaattgtttttctaattctgtgaagaatgatggtggtattctgatagagattgcattgaatttgtagatggct tatgatttettaeageagtgtttgtagtttteettgtaaaggtettttaaeteattggttaggtatattettaagtgttt tttttttttttttgcaactattgcaaaaggggttgagttcttgatttgattctctgcttggttgctgttggtgtatagaa gagctacttatttgtgtacattaatcttgtatgcagaaattttgctgaattcttttatcagttctaggagctttctggag gagtetttaggggtttcaaggtaaatgactgetatatataaagtttcagtggcacaaaagaaatagcactcaaatataaa attttetttttaatteteageaaggetagttaettetetatagaagggtgtgeeettaeagatggaaeaatggtgagege acacttggacgagggaagggattcttatccctgacacacatggcccctgctgctgttgttcccctattggctagggtca agcaggtagcaggtaaatggaatgagttagggtggagcaggtgattggaatgtagggtggagcaggtgatcagaatgagt cagggtggagtaggtaaccgaaaaaggttgctttacgaggaagttaagtttaaaaagtagaaggcaaagaattgaacatac tgacatattaattettegaaaagaaatttagaaeteatatetaaeatgateatateateageaaaeagtgaeagttgae ttcctetttaccaattggatgccetttatttetttetettgtetgaetgetttggetaggaetteeagtaetatgttgaa

gaggagtggtgagagtgggcatgcttgtcttgttccagttctcagagggaatggtttcaacttttcctcaatcagtatta tgttggctgtgggtttgtcatagatggattttattacattaaggtatgtcccttgtatgccgattttactcagagtttta atcatataggaatgetgggtttegteaaatgetttttetgeatgtattgtgatgateatgtgateatttttgttttaattet ggtggattatctttttgatatgttgttagaactggttagctagtattttgttgaggattttagcatctgtgttcatcaaa aatattqqtctqtaattqtcttttttqqttatqttctttgctggtttttggtattaggattatgctggcttcatagaatga attagggagggttccttctttctctgtcttgtaaaatagtgtcaaaaggattgataccaattctttgaatgtctgctaga agtetgetgtgaateegtetggteetggaetttttttttgttggtaattttettaattaccattteaateteactgettgt tgttggtctgttcagggtatcttatccttcctgatttaaactaggagggttgtatttttccacgaatttatccatctctt ctggqttttctaqtttatgtgcataaaggtattcatagcagccttgaatgatcttctgtttctgtgtgtcagttgtaat atctcccatttcatttctttccttttttttttttttgagatggagtctcactctgtcccccaggctggagtgcagtggtg ccatctcagctcactgcaacctccactcctgggttcacgccattctcctgctcagcctcccgagtagctgggactacgg gatctcctgaccccatgatccgcccacctcagcctcccaaagtgctgggattacaggtgtgagccaccgcaccggccct 15 ctcccgtctcatttcttactgagcttatttggattttctctcttctttacttggttaatcttgctaatggtctatcaatt ttattigtctttcaaagaaccagcttttcatttcatttaccttctgtattttgttcatttcaatttcacttagttctgc tctgatcttggtgatttcctttcttctgctgggtttggtttgttcttgtttctctagttccttgaggtgtgacc ttagattgtctgtttgtgctctttcagactttttgatgtaggcgtttagggctatgaactttcctcttagcactgccttt gctgaatcccagaggttttgatagttgtggcattattgtcattcagtttgaagagtttttaaatttccatcttgatttca 20 tttttgacccaatgctcattctggaccaggttatttaacttccatgtatttgcatggttttgaaggttccctttgaagtt gatttecagttttattecaetgtggetetgagagtgtttgatataattteaatttettataatgtattgaageteattt tatggcctatcatatagtctatcttggagaaagttccatgtattgttgaatagaatgttttattctgcagttgttggatg aaatgttctgtatatatctgttaagtccaattgttccaacgtatagtttaaatccattgtttctttgttgactttctgcc tagctacccctgctcgtttttggtgtccatttgcatgaaatgcctttttccacccctttattttaagtttatgtgagtcc 30 ctgttgagaaatctgctgctaatctgataggctttcctttataggtaacctggtgcttctgtctcacagctcttaagatt 35 ctttccttggtcttaagtttggataacctgatgacaaagtgcctaggtgaatatcttttttgcgatgaatttcccaggtgt tctttgtgcttcttgtatttggacatctaggtctctcgcaaggccaggaaaggtttcctcgattattcccttaaacatgt tttccaggcttttagaattctcttctttctcaggtacactgattattcttaagttttggtcatttaacataattccagatt tcttggaggetttgttcatatttccttattetttttetttgtetttgetggatggggtaattcatagacettaaagete tgaatttetttattetaettgtteagttetattgetgagaettteeagagaattteeacatttetgaaagtgtgteeaaag 40 aggtaaaccaggtatttcttcttgtttggatccattgctggtgaagtactgtaattttttgggggggtgtggaagagcctt gtattgtcatattactgggtatctcagccgtggataccagcacctgttccaatggaggtggcggagggtgcaatggactc gstettgstaasgstgstgstgstgstgstgstgstgstgstattetagstatt 50 gtcccagcaagttcctgggtcctctacctctgtatttcactcggctctctaacttgactcagctccaggtaaagctggaa acttcacctgcaaacagaccttcagcctctccagtgggggtgtgtcttcaggagaggagggtctacctttcccacttccg 55 cagttgggaaactcacaggaatttttttttttttaatgtcaacagataattctacatcttggaaaactgcccttcagaaat gagggacaaattaagacattccaagataaatagtcaacattgcatgggaatttttggccagaacaattaggcaagac agaaacaaaaggcatccaaattggaaaggaagaagtaatattatctctgtttgcagaggatatgatcttacaggtagaac actgtaaatatttccccaaaatcactgttagaactagtaaatgaattcagcaaaaatgcagaatacaaaatcaacacaca aaaatgagttatgtatctatattggcattaaacaatctgaagaggaaattaagaaaacaattccatttacagtagcattg aaaataataatattettagaaataaaettaaccaaagaggtgaaagaettgtacacagaaaactacaaaatgttgctgaa gactaatggaataataaagagcccagaaataaacccttgcatatatggtcaaataattctcaacaagggtgccaagacca tcttagaagaaaacatagggggaaattttcgtaacaagatttagcaaagatttcttgtatctgataccaaaagtacaggc aacaatttaaaattatatgagttggactccatcaaaattaaaaacttttgtatatcaaaggacactatcagcagagtgaa aaggcaacccacagaataggagaaaatatttgcatatcatatatgtgataagggactaatatccagaatatataaagaac tcctatgactcaacaacaacaaaaaacaacaacctgatttaaaaatgggcaaagaacctgaacttcaaagaagttataca aatgaccagtaaacatatgaaaagatgttcaacatcactaaccactagagaaatacaaatcaaaaccataatgaaatacc atttcacaccccctaggatggctattataaaaaacagaaaataacaaatgttggcaaggatatggagaaattggaactct tgtgcattgctgtaggaatgtaaaatggtgcaaccactgtcaaaaagagtatgacagtttctcaacagatcaaacataaa 75 tttattaggggaattggctcatgtgattatggaggctgataagtcccacaacaggctttctgcaaattggagaccttaga atgccagtagcatggccccattcaagtctgaaggcatgagaacccagggggctgctagagtccaaaggataaagagcctg tectigetecagetgattagatggtgeetgeeeacattgagggeaaatettecceacttagtecaetcaeacteacatge caatateetetgtaaacaecteacagaaacaecaaaaaataatgetteacetgttetetagttatteettaateeagae aagttgacacctaaaactaatcatcacaccatgggacctagcaattccacttctgggcacaaaagaactgaaagccggga ctcaaagagatacttgtatacccatgttcatagcagtatgattcacaatggccaaaaggtgaaagcaacccaagtgtcca

ttaacaqatqaataaacaaaatgtgtatttatatatatatatatatacaataaaatattcagtcttaaaaactaaagaaat tctgacacatggataacatagatgaaccttaaagacattatgctaagtgaaataagtcaaccacagagggacaaatattg tatqattctacttacatgatgtacctagagtagtcaaattcatagagacagaaagtagaacagtggttgttaggggctac gqaqactqqcqcacaacaatatgaatgtacttaatgaccctgaactgtacacttaaaaatggctaaaatggtaaatttta agttatttatattttacacacacacacacaggtaacatactacacatgatctcatgggttttgtgagaatcacactgagatcca tqtaqaqaaqccttqtaqtctatataqcccttcgcaaatqttaqctcttcttagtcattatcactccattttccccaatc tgataccattatccacacactttacccagccacacttacccaacagcacactgtttgagtttgagtgctatctggtgaat 10 aatctcaaagacttcttcctcttacctagttttacccaatgattggctttgaagcagtccttattcagtaataagaggtc accatgccatggccaagaatagggcaaatcttcctccaattcagttgaactccctggccgtctagcaaacaacatatctc ataacacatcctttgagcaggtgaacaactctgaaccttctttgaaggaacaggattctgggaaaggaataaaagaaatg catgcagtgtgtattgagaataaaatctattagctaagaaataaaaatgaaaatgctacaacatgatcagttttgatgg actagacaactetetgtagagtagccacagggetgaacceteaaatatteccagaaagtatagacattgetgtagaacca 15 ttgatcagaatccacgtcagcattcaggtgctctctggctacaagtttccttagctcttgcaggcgctgctcattgaaga tttctcttaacacaggtaatgctaccagtctcatctggcacctttttcatgcaatgacaactatccaggagttgctgcct ttccagatatcccctgcgagaccaatgagggattttattccatgactctttgaagaggttcaaacatggatcaaacatga 20 gacttttcaacaaagttttctgccagtgccccacaaatcatgactgtggtctcccaaattctttgattctccactaggtt ccctttctccctccattcaaagccccaaataacatttaccctatatatttagtcccgtttttttgtagaaatgcttctttgc ttgtgttccccctaccttttcatatcatacctacatcgttaactgaggctcagtcataacatcaacaacagcatgaaaca teccacettetgtetteattttgetataaactggaggcaaaggaaatgetgteacteagggagtatateaatgaagggaa agactotoacaagacaggcactgaggcaggagtcactagcacacagtgtataagtgaaatotaaatataaaaaagcaagcacttgggatacatcccttgcacacacctcctottttataaccagtagagtgaagttggttgctgaagtcacagaatcaat agtctatttcccacagacggctgatgatagcagaacaagcctggctaagtgccccacccttttcttgagtagctcattg ttatgagccacggaccaccatcaccaggtcacatgttctgtactctttcctaaaaacagtgacaaaatatgctgagcca tccatatttcctcagttacattgagaggcaggagatataacaattaagcagtctctggagccagagcaacctgagctcaa 30 accatgccttagcttgcttgttgtgggacctaggcaaagttactgaaacttctttagacatgtttatcaataaaatgggt acagttgactggctccaagatttcttgacctcttgatgtatttgccctgcataattcctaagactgtgattataatggat tttactcttatgattaggttttcacatagcacagttgactttaatacagggagattatctgggtaggccttgcctaaaca caaqaqccatttaaaaqcaqaqttctccccaqctqqtcaaaaqaqaqaatctctqqtcaqaqattcacaqcataaqaaqq tttcaatgtgccatcactggctctgagatgtagaaacccacatgtaaggaccaaaaaagaagcccttaggagctaagagct 35 aaaatgagcttggaagctgattcttctcccaaagattccagataagagtacaacaccttgatttcagccttgtgagatcc taagcaaagaacccactcatgtccacccaaacttctgacctacagaactgtgagctaacaaatgagtgttgtaagccact aagtttgtggaaatttgttacacagcaatagaaaactaatacaatgaggacacagcaagtgcttaataaatgttagcttt 40 geatteagtggggggaggggtteateetgtagaaetgeettggaeatggeagteeatttateatetetggettetettee cctagcagtagtcattgcaacaactgaaaatgccactgtacatttccaaaaaatgctcctccacaagggttgagaactttg agaactactttaagggaaatttcataagaaagcatgcgtgtcttaaatgctgccataaagctacctcaataactaccatg ctactcaaattacctgaccctaagaatcgcagtggcacttgtttaaatataacgattcccaagttctttccctggagtc ccattccatagggctggggtggagccccaggaatctatactcttactcaaagaccccaggttaatcttttgtttatgtaa 45 gtttgccaaacactgagttagaaatatactcagccgtacatgcatttagcaaaagttcaccacaacggaacaatgacaca ccaaaactctttgaaactgtgccttctacagagctgtaaatctccttttggaccattccattacacaaggtgtcctcttg gtcacacagtgattgcaaatgggactctagagtcatggaaatgggtatactcttctcaaactttccatctttaccagaat tacttcttaaagtgatatgcttcatggtgtaaactagcacttattaattttttctaaatatttatcatatttcatatact 50 tecegggtteaagegattetetggeeteageeteetgageagetgggattacaggeatgegeeeeegeeeggetaatt ttgtatttttagtagaaaaggggttetecatgttggceaggetggtetecaactecegaeeteaggtgatgegeeegeet cggcctcccaaagtgttggcattacaggcatgagccaccgcgcccggcccatatacttttaatacatgtggaattaataa aaacgtccatgcctccaattccgtggctattttaccgtcttcctttttcggacaagtccctcaaaggtagcgctcttggc 55 tecttectttgettatecectaaccetgteeteetgaggtgeeceetggattteeteeaacceeggeagggtetgeettt gttttctgtttccgatactctgcctgccagaatcccctgccgcaccgcccaccacgaagcacatggaacccacggacta 60 gggcggaactaaaatgcaagccccacagttgtcagcaaaggacttccctgttaccatggtaaagccgctgcgcctttatt tggactcgcctgcatctggctcggaacagagttaatctcaggagtgagaatatagccctccggtggacgcaactcgcgc gtttgactgtgagagacccagcggtggatcgttctctacgttctgtttcggtgagaggaattcgttgtagtcaagtttc ggggagggactcccctctgcaccttctattcatgaatcgctaccggagcgcggttcggacgttcggaggttctccct gctattcctgtagggcgtccaacctggtggactcatgagcaaagagatattcccattctgccgaggtctcgtaggctttc cgcaatatcagtggggaagttagactagcgttcagcttctgtgcgtttctcctttcatgagcttcaattattctctagag gagaaggctcacggtaacagctcctcactgtcccgtactacttctcatcctctgccccagaatacagactatatgctgag 70 ggtatagatectagtgtecacttactgtcctctcctaaggactttcatcctttgctttttatctgtaacattttagtgc gqaattttaaaaaggatcgaaacgattctgaattatcttttttgctgaataaqttgtttttaaaaaatacgtgtgattat tttagagtaccatttgaaagggacatgacaaagtagttcagaatactttttaaacatctttcactacattcatcgtcatt ctcccttaaatgttgtatgtgtggaaatacataggaacctgttttaaaaattatattataacattgatattttttgta 75 cacgtgtcagatcagtctgagaactaacatttgagagtacctacacattttgtatttagtttcagtggtatatttccttt gttaagaggtctgaagaaatacaatggaattgggattggagaacactattttgagtcttatattttgatgatataagttta ctttctcactaaagatctatgttataaactcagaattttaatgttacctattttcttccttagtggggaacattccttat gaagetactgaagagcagttgaaggacatettttetgaggttggacetgttgttagttteaggtgagateceetttteet tcatggtgggagcttcttaaaaatcaccacagatttggctcttagtaataatggcaggttttctttactggtgacttttc acatacattttgttcttgtaacagctttattgagatataattgatacactatacaattgacatttattcttacctaaaat atgtttttttcgttaaaaatgttttttaggcagggcatagtgactcaagcctgtaatcccagcactttgggaggccgagg

caggcggatcacctggggtcaggagttcgagaccagcctgaccaatgtggtgaaaccttgtctctactaaaaatacaaaa attagccgccgtggtggcccatgcctgtagtcccagctactcaggaggctgagacaggagaattgcttgaacccgggagg tggcaatgttagcaggaaccctgtatgtgtgtaacatttgttcctgacacttggttctgctctccagattggtatacgat agagagacaggaaagccaaagggttatggcttctgtgaataccaagaccaagagacagcacttagtgccatgcggaacct gaatgggcgcgaattcagtgggagagcacttcgagtggacaatgctgccagtgaaaagaacaaagaagagctgaagagtg agtacaaatccaacttggatgcagtatgagttagtaaagatgtaacaatgaagattttccatttctgatatgttttagaa aaggctcaaaccgtttcaaaactgttctggcaagcactgtagggatgcatagggtcactgcagacctaagcatgctgga ggcttgctagtaagtgtatatctttaagaaacagataaagttgacattagaaattcttcagttgctccagcctgggcgac tcaaattcatcaagccattagtagtactaactgtggcattagtcattcctgtcactcttttcaggaatttttgaagttag cgtatttttctctctttaaccttttgtttctgaaatgacttgttaaaagaagtcaatgtgcctagttctctaacttaggtt aacattgtccttccatgtgatcatgatccccagctttcctctgagaacagaaaatacactctcactttcctccacagaaa 20 aaagagcetettgaatattacatttetcagaggggaatggetetaaatcactatcagtttetaagtcataagtattaaacetgaatctgettatettetcagetetgttecagaatagtecccaggaggcacggaacatgttactteagaaccetcaac 25 tggcttatgctttgctgcaagcacaggtagtgatgagaattgtggatccggaaattgccctggtgagtgcttctggttct tcttttcactttttagaaaattctgcatcgccagacaaatatcccaacgctgattgcaggcaaccctcagccagtccatg 30 gtgctgggcctggctcaggatccaatgtgtcaatgaaccagcagaatcctcaggcccctcaggcccagtctttggtaggg ctttatcccttaacatttttttgtatctgtcttagaatgtcattttctttttaggagaatatattgaaagaagaatggtc tagattogattocaagtttgtaaaacaaagagatcetteeegtatgeeettteetataagetaaetttgtgtgtatgtg catgcctggcactgtggttggcacttcgttattccatatgcattatctcatttaatcctcaaagcaattgtatgaggttg aaaattgatacatttgaaaactaaaaatttctatataaagaaaaaaataagtatcaaagacatgacaaattgagaaaa agtatttaccacacatgtgatggaaaacagactaataaagagcccatagtcattcacaagaatgtttattgccttagagt gaaaaattggaaatgtcctaaatgtacgtcagtggaagaatggagaaaatgtgtgggtacattcatccagtgaaatactgtacaacagttaaataactgtacagtgaactagaactagaactagaactagacagttaaacagcagttaagatgaactag gatacataatatcaacacaactccaaaacagtgacatacggacatgaaactaagtgaatatggatgcattcccgaaatgt tgtaatttttcataataaattttaaaaggcctcctataaattagtaagaaaatttccaataacccagtagaaaaatggga aatagacataaatatttcacaaaaggagaaatataaatatataaaatttattcaacttcaaaataagataatgtaataa attatcatttatatatgtaatgttataagataatgtaaatagaaactacaataagctaccatttttcatctctcaggttg gcagaggtacagggcagggaccagcaaacatttttctgtaaatgatcagacagtaaatatttttggctttgcaagtcaca cgttaaaagtttgttataaaaccaggcagtgagcccgatttggcccatgggtcatagtttgccaacccctgctctaaat 50 aaataaatacattttcagagatagaaaaaaaagctaaggcccagagaggttagctggtccaaaaattgacacaattata agtggcagatetatttetgaacetggttttatetgaceteacagecagttttetettaactaettteetatacagetett ttgagctgtttctaattcaagggactactcagttttttggggaatgcacagatgaaaagatgacattctctttttctcaa cgagttttaatgtagcatttaaaaaaatatatttcacattcccccaaaaccagaattatatctaaggacaggagtgagaa cagtaggtgttatgtgctgccttgccacacagataagacttgtcaatctctacattgagaatatgttccatcttaaccgt gcagccaaatatgataatgggatccttaggtaaattaatacacagctagaaagtatatatcttaggtggaggaaatagt agatttcttacgttaaatcctgtatgtctaattatacacagggaaagggacagtaaagtgaaagagcatagtaaaact tgaatgaactgtcagattaggttcaaaagctcatgaagaaaacagacaaaaaaatacaaggtcacatttgttatagcata gracatttattgaaaatgatagateggeaattaataagagtattgeteatataettgtaaetgtteettgtteaaeaat 70 tgtaactaagaagattgagtgaaataatgattccccatatgaacatctgtatgaacacatgatgtattaccaatattta aagttttttatgtaacaaacttggtttttgttaatttatctaatctagggtaggttgagtacaacactactcatggaga atgatttaattotaaattgttctgttctgtagagaatccagtctgcagagctaagttgatgatgaggaatggaagaagagatt ttttgaagaaatttctgcaaactcaggaattttttgtatctactttaggattgttatgtatctactttatcctaatagag ttatacttgtatttaaattatctttcatgacaggaggtccatgggtaagtgacattgttttcctgtattatagaagagct 75 tcctgccaagagtttggtaaccaatgaaatgaattattcttattgaactcactattctgtcactgaaacataaagtacaa gcagaatgaggaaatttgtaaactcagccactgttctaatttttcttttccgctgttctaattggtgttttttcttgtct gccctttatcttctaggaggaatgcaggctcaggttggaatgccaggaagtggaccagtgtccatggaacgggggcaagg taaataaatattaatgtctgactaatgttaattggtcatggaagtgttccacatccacagtatctaatatggcagccact cattccaagtgctcagtggccacaggtgactagtggataccatacagacattacagatatagaacattctatcatcgt aaaaagatctattggacagtgctggtctagactttccacctggtgattcagagtccagctctacaagaattgataatgaa

actgagtaaggaattttaataatgagcatgtaaatatgtggctgggtatgtagaagactagatttaaaccccagagaaaa ctgggagggaatcataggtctgtaacgcctacttaatgaacatatgttgtaccgtggctgtactgctatatacaacagta gctgctgctccaaaatctccatgttgtttcttcatgttactggagtttgaaggacaagaaagtgcagtggttcagttgga aacaatgttaggaggagagatcgtaagaaaagagaaggaactgagtgcatactatatgccaggcactttaattttcataa ataatcttgtgagttaggtggcagcacctcagttttacaggcaaagagttggaagctcagaataagttactttctcaagg ggacaaggtaagtaaatattaatgtatgagtaatgtggactggatttggtgctcttattttctcttccaactagtaagtg gcagagctaagattcagaagtctttgactccagaatctgtcctctttctgtcactccacactgcctctgttaacttccaa gcatattetteagtgtettetactettatteettgggaataaaatgatgggaaagactgetttggacaageatagagaag 10 cttaaggttttttcttttgtagcatatggtttataagtggaacccatttaaaaagcaaaatattggccaggcgcagtggc tcatgcctgtaatcccagcactttgggaggctgaggtgggttgcttgagctcagaggtttgaaactagcctagaca acatggcaaaaccccgtctctataaaaaatacaaaaactagttgggcaatggtggtgtgcacttgtggtcccagctactt gggaggccgaagtggaaggatcacttgagcccaacaggttgagactgcagtgagccataatcgggcaccactgcactcca 15 gaagtetgacagcaggacaaactccctggccaaatatctcatattttctctaagcatccaatgcttttgtgctattgtac atccctctatccccaccgcaccactgtcaatagatcatatatgttccccagagtatttctgcagtaatgagaaggtatta gggtttcagtcatacttctgcctgtcatggggccagccctcaatccatcaggttttagctgtttaacgcatacttgcaca agacatcttcctattatagttatcttcacctttttgtcagaaattggcaaagggaagtgactcatgttttgagggtattt 20 gicatgatgtttattatcaaagacitgctgtggcagagtatttcttgtgggagtgatattctctttcatcatgtaaagitc tacatttatgttctttgcataactagaagattcaaaactatcctttttatatatttttttcctaatgatttcataaggag acctaacggaaaactagtagcagaggtgaaaatcgaaaatgtcaggttattcccacctagatcaaaccagtgcccccatg qqattccctttcaaaaqctatctqqtcaaaatqqaactatttcaqaqacccaaaqqaqctaqtqtaqtttaqqqaqattt gcgtgtgtatgcaagctattttaagtgtctgctctttctccttttgaacttactgcttacctaggaaccctacagcactc gcccgtgggacccgccgggcctgcatcaattgagcgagttcaaggtacccattgtatctgtgggtttccttttgcttgtg gtgttcagggtgggacgttgagaggaaaagagctgcgtggcagtcatcctcgcgttcagaacccaaaagggtagtgtttt tgggtttttgttttttaatttttcctgttgaggccacaagcctaagattgacctcttcacacagggcagagaacatgg 35 gacagegggttettgcagagecatggcagtgtteacatatgccaagaetetacetetgttttgtgactetggteettgaa ctaagattgattagaaggaaaaccaggagcataagtttetecaggtegeagtgetagteettggeaggttgeteeeeagt ttgctctttatataattccatccatacctctgacatggcacagattctgcctacaccctgcttctgttcttgagctgcaa cagcggggatccttgcctgcgaatgtcccaacccctcgaggcttgttaggagatgctccgaatgatccacggggaggcac tttactttctgtaactggagaggtagagcctaggtaagcactaacatagaaggaaacagttgaagaaatcagaattgtcccttcttccctgagaacaaaatctttctgtaccagttgtacctgtttgcctacttcaaaaggtagatcaatattcatggcc ctggcctacatggtgaaatcccatctctactaaaaatagaaaaattagcgggcgtggtggcggcgcctataattaca ctactggggaggctgaggcaggagaatcgcttgaacccaggaggtggaggttgcagtcgagccgaggtcatgccactgcac ttaatggggatcatgcctctgactctgctctgagtactttacttagatcatcttattaaatccacaagatcctgtgagat 50 ggataccattattagtcccattttacacgtgaaactgatgtgtggaaaagttaaatatgtgtccaatatcacacagcta ataagtgatagagcctagatttgaacccatacagtctgaatccagagctcatgttcttatgcattgttctgcaaactcat acatataatgaatattegttgatteeteectaattatgaaccaaataaegaaattetagaatacatggatttatatetet gtagctttttettccatctatttggtgttattttcttgttagtattcatagactacatcagctctttgttggatgttact tactgatctggttggtactttgttgttgttttgttctattttaaaatacaacgtttttctccatctccagaggttacttg 55 ggaccacctcatcagggtccacccatgcaccatgtccctggccatgagagccgaggaccacccccacatgaactgagggg agggccattacccgagcccagacctctaatggcagaaccaagaggacccatgctagatcagaggggtccacccttggatg gcagaggtaaggggagatcacattgcaaatgccataatgaactcaactgtcttaggctctaatctgggataaagaatgct ggaacagtaggtttgcaagcatctttaaggtttatccacaaatctgagaaactggggaggagacaatagtctcatatgtt agctacataatggttttgttacatttttctttataggtggaagggatccccgaggaatagatgcacgagggatggaggcc cgagccatggaggcaagaggttagatgccagaggattagaggcccgtgcaatggaggcccgtgcgatggaagctcgtgc aatggaggcccgagcgatggaggcccgtgcaatggaagtccgagggatggaggccagaggcatggataccagaggcccag tgcctggccccagaggacctatacctagtggaatgcagggtcccagtccaattaacatgggggcggttgtccccaggga tccagacaggtatgtgtaacactgacttctggcatccaagtgaaatcttgatctattcaggaattgattattgagcctaattactgccttctgacttgggcttctttagcttgttagaaagggaagacttggatctccctgtagcttctctgtcc tggagcagagcccctgaaaatttagggttagaaagtagtcttgattggggtacaaaccaacatcatgtaccacgttttt tccaagatatacttgcccggatctcatccgaggtataaactcagaatctcttattagtaggatctgagcatggatctg aaaaacttcccccaaatgattctaatgtgaaccctgactggggaaccactggggttagagtatatgaagagctgttagtggccatttagataatcttaggtttagagagaccgtgtgttaatttattgtcatcacatagcctaagtgaacagtggaatgtgaa aggeagtttattaataatcaccttaaaaggtgtggaaccgaagtcttgtctcctcttttatttggatctctctgcctg tgtgtacatgctccctcttcatctcgacttggttgtggagaggtggtatgtgttgttcttccgtgagtttttatatgctg gcaccttcatttccctctaactgctccaccttccttttccccccttcctctgcgtacttctctcttcttttttatgtgt 75 ctcagtttatagatttggaaattaaggcccaagaattcaggtgacttgaccaaattcacatgactaaaaagtggcagagc tatgtgtctaccccctcctctgtaatatgaaatacaaatagagggtttttttgctatgtgtagaataaaactgttctcta ttgtgtttgaagtgtttgtgggccttgatttttattgtactctctatggtcagtagcctagtaacagaaatggtttttat gcattcattctgtcactcagcaaatatttattgagcacctactatgtaccaaacatagatctaggtacgggggatactgc atgcgcttacataattttactggtagttctatgatgcaagacattgcaagtaagggttggaagaacatttctggataata ttttgctcctttctctctgctggtacttgaacttattaccctaatactaggtttataccatttttattagtagattcgat

aaagccaattagatctgaggcaagagaaaatacaaattttatcttcaaacctttaaaaaaattttaaattaatattaa cttataaatatatatattcgttcatctataaaagatatatgtattaagaacttcaagccaggcatggtgacatgcacctg tagtgccagcactctggaggctggggcaggaagaccatttaagtctaggaacttgaggctgtggtgcattctgatcgcac tcctgtagtcccagctactctggaggctaaggcaggaggatcagtagagcccaggagttggaggcccgcctacacaagat agtgagaccacatcttaaactaaaaggaaccttgcttcctctctatgcttgttcccctgtggccctctaggtcctgta taccttttttttttttaacttaacatgtccttaattcatacttttaaattagattttaaaattaactctagtccact tagttagaaacttgtgggcaaaaggcttattattactagggtgattatataatttatcatctaaaggagaacatgaaaga 10 aagtgctgttactttacttggaggcaaaaacataaactgggactatcttagggaaaccaagatgtatggtcacttttgct agtacttgtctgcctagaacaagcacacctagaaacttaaaatggccgttattgagtggttagatcacaattacagtacc tcagattaaagcttcaaaaagattatactcaattccgaattgtgctgctataaactcatgtgaccaaacaccacctgttc cccaataacctatggaaataaaaaattttaaaaaaaaagattatacccataggtgtttcagacccataatagctcgttaa tgttcagactggtctctggaaacttgtctctggtttcagtattgataatgaacagtaacagtgataatattctagcagtct atacaaatctgtactaatgtttcatctatccattgtctttgggaaatgagttaatgcatgtaagtgaatgttccagataa tagaactattctaccaagtttttttaacttttttaataaaaaattataaaaagtatttgatatttcctttcttgaacagga tacaaaaaaatagtttaatcagttttgactactcaaggtcatcattgaatagattcattattgtctataccgtaatataa aacatagttatctcctgttttggtttctggtctccttcactgtcaggccgtcacctggetcttcatattactgaagtggta tetgeteetaacagttatttateegtatttettttatgttitgetgettetaatetgetgggtaageaggtaacaagttt 20 gttaacaatatgtgtttattaagagagtacctaagctctgggtgaatgcctgagtgtgaacataatgcttgtatagggac attctaacagttagatttggtactcaagaggtcttttccttgggttctggtagtcttgcaaagggttgaactcattgaag cagaaagcatctgccatatgttc (SEQ ID NO:12061) 25 ctggaaaacgaacatgagcctgtgcttcccgcggtaccccagcgaagggcaccgggccttccatctaatcttcgaggctg tcacgggcttcctgctgcccttcctggctgtggtggccagctactcggacatagggcgtcggctacaggcccggcgcttc cgccgcagccgccgcaccggccgcctggtggtgctcatcatcctgaccttcgccgccttctggctgccctaccacgtggt gaacetggetgaggcgggcegegegegeggceaggcegeegggttagggetegtggggaageggetgageetggee _egctcggcgggcgtgggcttcgtcgccaagetgctggagggcacgggttccgaggcgtccagcacgcgcgggggggag cctgggccagaccgctaggagcggccccgccgctctggagcccggcccttccgagagcctcactgcctccagccctctca agttaaacgaactgaactaggcctggtggaaggaggcgcactttcctcctggcagaatgctagctctgagccagttcagt a (SEQ ID NO:12062) cagtetteatacaattatatggatgaateteataaaatgetgagttaaagaaateagaecaaagaacatataetgaaaga ttotototatatacaaagttoaaaaataggtggaccaattoatggtggtgttagaaatcagaagagggctacctttgtg gggaggggacagtttaalgcccagaagcggtaaataaggaatcclctggggagtggtaatgatctggatgctagctacag 50 qatgtqttggttgtaaaaatgcattttttatatctagctttttccatgtgtatattatacttcaaagaagttcagttaa <u> Łaatttctcatgtcactgtagagtagctcagttagccccagcaagcctctggcttaatcttgtttttaccttaagccatca</u> qtcatttacaagtaggaaaattcacagggaaagttagagtataaaatccagaatgaaggtttactgggtaagagtctctc cattttccaaagcccgtttatttcttgattccagttcttaagaagtctcagcattgtgtctttttcatgtatcttacaag 55 aggagaaatttggtgcctatttcctaccaggcaccaataagtgggaccaataggtgggattaaagatacagtagaaagta ccctgagaagtgcagaccaaagccagggaaggctctgcaaagatgtacaaatggaagtcaccttaataacctctgactgc tgcgcataatacatttcactcaaaagaggggttaaacaatggaacagaatacagaggccagaaataatgctgaacactga caaccatctgatctttgacaaaatccacaaaaacaagcaatggagaaaggactccctattccataatggtgctgggataa acttaaatctaaaaccaaacactataaaaaccctggaagatagcctgggaaataccattctggacataggacctggcaaa gacttcatgacaagacaccaaaagcaatagcaacaaaaaccaaattgactaatgaaactaatgaaactctttagttgtac aagtgggcaaaggacatgaacagatgcttttcaaaataagacattcacacatccaaccatatgaaaagatgtttaac atcactaatcattagaggaatacaaatcaaaagcataataagataccatctaataccagtaggaatgactactattaaaa agtcagacaataacagatgctggtgaaggttgtggagaaaagggaatgtttatgcactgctagtgggaatgtaaactagt tcagccattgtggaagagagtgtggtgattcctcaaagaatgtaaaaccgaactgcctttcaatccagcaatcccattat caqaatagtatgcagccataaaaatgaacaagatcatcatgtcctttgcagcaacatggatgtagttggaggccattatc ctaagcaaattaatgcaggaacagaaagccaaataccacatgttctcatttataagtgacagctaaatattgagtacaca tggacacaaagagggaacaatagacatgggacctacttgagaatagagggtgggaggaggaggtgaggatcaaaaagtacc cataggacactgtgcttattacctgggtgatgaaataatttgcacaccaaacccctgtgacacacaatttacctatatag aaaacctgtgcatgtacccctgaacctaaaagttaatggtggggggtggggttaagctactttgtgggtataaatctgag cattcatattaaaataaaatattacctcattagagtaattaacattattaagcaaagagccaagtaccttacacacat gattaaatgcatggggcatgccatttgactagaaactggaagcatcaggatttaaactcagttctgaatggttttgtagg ctttgttttttccacattatagcatggcctgccatgaagaacaggtcctttctggtgtttgtcttgtttaggtttaagtga agcaaatatttatttaaatattcaagatatgctgttaaatttttactcaaaaatttgagtacagtatggatcttctgaag ccaaataactcttattcaatgcttagttgagaaattttatggagtagttctcaattttatgtagttccactgcaaaggt

ataatttttaaaaataaaaccttgtttttatatcaagtggggacatttttccaaatgaaaaccgtgtattcattttata taccatccaqaqataataqtqcttaaagatttqatatatagacacacacatatatacatatatatcatcctaaacttc ctttaacatcttqcctttactttataacatttatcacagcagtcatgagataatgatttacatggtcattgttagtaagc taatagctaagtgcatgaactctggagctagcctccctggattttaatcccagatctgtcactgaccagctgagcaatac taggtaaattgctcttgttccttagtttcttcatctgtaaaatagagataaaaataataccacctcataggattggtgt gagcattaaatgagcatacgtatgtaggccacttaacaacaatgccttcacatactgaacacaaatatacgagctgttgt aacctggtatacagtgtgcattcaatagttgttgactattattactagtggcatttaacaaatatctgttaaatgagtga agaaalacccatttactgcaagtgtgtctaatattgatggcataatgggggaaactcaaactctggagtcaaacaggttt tttatcaataaatagtagctatttttgtataagtattacatataatatccaggccactgctttgcataacccaaaagggg caccattcatgcagaatacaacataaatggtgtccctggagcagtgcagtataggaaccctgaggggacctacagtatac tttatagttcatagattacaaattatccctttatcagagtctctcaaggttggatgtatttgaggtccataagagcaatt taggattaacagtagctgcagaaaccatctgcagtgatattctcattttaaatccgcgggaaagaagacagctataaact 20 gggaagtaaatgcctctgaataagcaagttaatgtcagtagttgtactgtatgcatattgatgaacaatagaggaaccaa tgtccaatcagatgagcaggatatttggcaataacaagttgcctttgaggaaaaatgattttctttggcaagttctttatc ctgctattgttgatgcctggtgcatgaatcaggactccagcccacaagttttcccagaactttcttatggccatcatctt taagtgtetggtgaacagtcatagtttggtacacaaaagggtcaacctgggggatggctagggtttgactcagtcgttac aatettgggttaactataactagactettetettattaactettettataactettgggggttaactettgggttaactettgggttaactatacactagattetgettcagttetettgggggggaatcaggetaattacatttgtttacatcagttetettgaaggaagaaaatacactggttgcagcaagacaaatttaagctagatgtaaattacattattttttcagggaagaattgtgtagggtttcaggggaagaattctgaaggaaaatatagagctgaaatgatcttgcaggctcactgaaactgcagggtttagatccacactgatactcgttctattatcactgtaatga aggotgatggaataagtaaaatgttttgtattagtatgtttttacacttatttgcaaggcataaataggttaggttttg atcttaatttaattctaacatgtattgtgcacaagctgtgagcagttttcaggagttaggtatctggccatgactgattt 35 agccaggcgtggtggtggcgcctgtagtcccagctacttgggaggctgaggcaggagaatggcgtgaacccgggaggtg gacacagctgcaaacgattccccattaaatatgatgtttcttgcaatgtttggaaggtactcctttttagtaagggaaat cccctcttctggcttgctgaaagttttttctttccattttaaaaatcgtgaattcctttttgcaatattgaggtggttat atggtttctcttctctaatctgttaatatggtgatttaatggttagaaattttctaatgtaaattccactcatattgcag aaataaacctaaactgagcatgaggctatattttttatttgcttctatattttggttgctatacagtattatgtttaagat 50 aattttccttgttattcttttgctgcacccaaattgttgatatttctattgtctaatttctattcaattagaatacttt ggctttgaaatatatgtacattgtggaatggctaaatttagcttattaatgtatgcattatctcacatacttatcatttt ttgtggtgagagctatgtgacttttgaacttatgagttatttaaatatttttaaattattaagcatattgggattttaag 55 taatttacctttttattattaacttataacaagtagaacagttaacctgtatgattctacatcattgaaatttattgaca tttgcttcatagtctattatatggtctacttttgttcatgttacatctgtagtagaattggctaatagttgagtaaagta cacatatgtctatgaaatcaagtgtaatccagagaaaaagagaaatttactgaatatattgttctaggtgctattatatg aaaaaaaagctagctctactatttgtaaagaatgaagcaaagatacaaatgaaggcccacatatcctataactagatatt agciggggttcgaatttagaaatctttgatgcttcagagtccacactgaaatgtggaggcacalagtgagttggtcccca gccttcagtccacccaccttctctttactaaatcacctttcacatacatgtatgaacaccccagcctccaagtccaaacc ctaaacaaaatgggacacccttgtgcatacacagagacacagcccatcctcaggaaaaacctggaaaagtccatacaagtt ctggaagcaagcttgggacggtttcagtagtgtggtctataagggaggcctcagaagacaggttttcttaattctgtgaa $\tt cttctcccacagtagaaagggtgctggaggagggtcagagtgaggacttctaaagcatgggtcctgagtaggggccactc$ ttgcccaagtctaagaagggtactagaatagcacactactactagatactagaacccagatacaagcacaggtcttctga ttctaaattctttacatgtattatacaactgccatataactgccatatgagggatgtaccctcattgtcaccattttacc gatgagaaaactggcataaaacgtttaagtaacttgtccaagttacagagcttagtgaagccacaatgttgctcaattt ctctcaaacttcaaagggatgggaaggacacctaagtcatagagtctttaagaatcagagctagaaggaatcttagatgt gctttaacttttctcagaacaagaaatcctttttggttttaatctatatgcacatctgtatttttctcaattatcgggta graaaatataacttttcttctgtaatattttttaactttaatgagtgttcctcataatagaaaagtttggaaaccattgc tatgggtatatactttctaaagggatagtaatttctctagaatattcatttaatgctccagaagtaattagcacaattgt gcaagtctgtgcatcatcaactatacattctgcctgtttactccaaatccacatgaaactgattatacagtcaaaggcga gcccagtggagaggcatttttggagacttcctggtacattgagacagggtcggccagtctgcgttagggtcttggtcaaa actgcattictgaaactaaactcagattgctttcttttaaggggtcagaactgattcaaatctacatttttaaaagcctt agatgtggggcttttcctattcccagtctccgctattggtctttgtgaatccacaggcaatttggccacatccttgactc tctcttatattaagaattaaacagctaagttcatgcagaggaaatataacaaaggagggactttcctacaagatctttga aaaatggaacatttgcataagtcatatttagccagaactgttgttttatattttcctttctgaatactttgtacacctc ctcccagccaacccccccctccctgacccaactagtcagagaccaaagccttcacaatggtttacacttgaaccttcc

accetetgacaccettaatetteccagaataccattgtgateetgttecactettgetcaagtttteccagaaactagagt acaaactttataagctttagagttgaaagccactctatctctttttcatccccaggtctctgccaaggcagtataacctg tccaacatctctaacttcaatacctttgtcttagatactagactctcctcctggtttctaattaaacctgatctaggatc taattttgcctctgaattctgttgccctttgccaagtgatctcttcctcctctgagccgcagcatctctgagcttgcaca ccagggataggaactctgcccttatgtgtccatagcccctggtagtatgtcttgcagtcgtacattttcagcaaatgttt aattggttaattgaagacaactgtcccatgccttaagcctctctttttgctaaacatgcctgtgtcctttgtcattgaac aactattttgatctattttcttcctgacataggggtcagttccgaggatgctgaaatcaagagacatagcttattctctc 10 aaaattgetiteaagagtgattttgitgtgaattgagaactggetgeetaetittggactaeccaettcagcaagagtgt ttgaaaccaaatctattctaagtaattttttattccctttctctatggcattagacacacagctcttttaaactacctt tcgttatctattaaacagacattcagtaactctatagacactgtctagctatatgaacttagacaaactaatatctctga gcttcagtttcttaaaatttaaaatgaggacaataccatctatggccggggattaaatgctatgaggaatgtaaaccaga tgtcaggtaccatctctctaaaatccagataaaatgaattaaaaatactggccgcaaaccctctctaagagttctcaaaa 15 ttctcagagagcttaattttcatgctcaccatagcaccgattttcttctaaatattttgtttctaccaaaatattttgtc ccaattttgccttttatggctatttcttcatatccactttcccaaactaaagaagcagcccttcaccttaaactcctcc thcaaagcaacctaaatacaggtctgggtttgtattcctaataagaggttagtgttacagaggttagtgtgatgcagaggaggaggtcagctgcttcaacaccctacccctcccgccacagaggccttcagcccttacacttctcacattcctacacattcctactctctacacattcctacacattcctacacattcctacacattcctacacattcctacacattcctacacacagggaggaggagaaaattaacccctcctaagtttcttaacacagagtgccttaattacatattactattgtttgagttcctgccaa 25 tcatcattatggttactaccagtgttaaaacaattggtattgaaaacaccactaccagatcaagcttcaaaccaagatgt caagtaaatattattgtcagacctctgagcccaagcctgcaggtatacacccagatggcctgaagcaagtgaagaatcac aaaagaactgaaaatggccggttcctgccttaactgatgacattccaccattgtgatttgttcctgccccaccttgactg 30 agggattaaccttgtgaaattccttcccctggctcagaagctccccgactgagtaccttgtgacccccacccctgcccac ctgactetettttcagactcaacctgcctgcacctaggtgattcaaaagctttattgctcacacaaagcctgtttggtgg tetetteacacagaccatgtgacatttggtgccgtaactcagatcggggaacctcccttgggagatcagtccctgtcat 35 tttaaattgggtaagtggcctctttttactctctctccagcctctctcaactatccctcaacatctttctcctttcaatc ${\tt atctgtgaacccaaaactccagcactggtcatggacttggaaagacagtcttcccttgatgtttaatcactgcagggatg}$ agtaccactttgcctgggtggcaagcacctctctctggggggcaagcacctctcctggggggcaagtaccccca accottctctcatgtctccaccctcttcttctgggcttgctccttcactatgggcaccttcaccctcattctccctttttctccccttagcctgtgttctcaagaacttaaaacctcttcaactcacgtctgacctaaaacctaaatgccttac tttettetgeaatacegettgaceceaatacaaactcaacaatggtetcaaatagcetgaaaacggcacttteaatttet ecateceacaagatetaaatactetgtegtaaaatggacaaatggtetgaggtgcetgacatetgggcattetttta acgteggtecetecetagtetetgtteceaatgcaactcateceaaatectecttetttecetectgetgteceetcag 45 teccaaceccaagtgtegetgagtetttecaatetteettttetactgacccatetgaceteteccetettecccagaet getectecteaggtegeteccegecaggetgaatcaggetecaattettecteagegtecgetectecaccetataatec ttctatcacctcccctcctcacacctggtccagcttacagtttcattctgtgactagccctcccccacctgcccaacaat ttcctcttaaagaggtggctggagctaaaggcatagtcaaggttaatgctcctttttctttatccaacctctcccatctc agttagtatttaggctttttttcatcaaatatgaatacctagcccactccatggctcatttggcagcaactcctagacat 50 tttacagccttggacccagaggggccagaaggtcatcttattctcaatatgcattttattacccaatccactcccaacat taatagagtagaggcagccaagtagcaacatatttctgagttgcaattccttgcctccactgtgagagaaaccccagcca catctccagtacacaagaacttcaaaatgcctaagccacagtggtcaagcattcctacaggacctcctccatcaggatct tgcttcaagtgccagaaatctggccactgggccaaggaatgccctcagcctgggattcctcctaagccatgttccatctg tgtgggaccccactggaaatcggactgtccaacttgcccagcacccactcccagagccccctggaactctggcccaaggct ctctgactgactccttcccagatcttcttggcttagtggctgaagactgatgctgcctgatcgcctcagaagcctcctgg accatcacagatgcttttggtaactcttacagtggagggtaagtccgttcccttcttaatcaatgcagaggctacccactccacattaccttcttcatcaatgcagaggctacccact cttaaaactccccaactctggtgccgatttaaacaacatcttttatacactcttttagttatccccaactgcccagt tcccttattaggctgagacattttaaccaaattatttgcttccctgactattcctggactacagccacatctcattgctg 60 cccttcttcccaacccaaaagtggcaactcctttgccacttcctctcatatccccctaccttaacccacaggtatgggac acctctactccctcgctaacaaatcacacctcattactatcccattaaaacctaatcacccttacctgggtcaacg ccagtateccateccacaacaggetttaaagggattaaagcetgttateacttgcctgttacaacatgtccttttaaagc ctgtaaactctccttacaattcccccattttacctgtccaaaaactggacatgccttacaggttagttcaggatctgtgc 65 tetetteaettteaettggaetgaeeetgaeaecateageeteageaaettaeetgggetgtaetgeegeaaggettea tggacagccccattacctcagtcaacccaaatttcttcttcatccattacctatccaggcatagttcttcatgaaaaca cacqtqctctccctqctqatcatqtccaqctaatctccccaaccccaqqactqqcaaattqactttactcacatqccca 70 aatcaggacactaaagtacctcttggtctgggtagacactttcactggataggtagatgcctttcccacagggcctaaga aggccaecgtggtcatttcttcccttctgtcagacataattccttggtttggccttcccacctctatacagtctgataat ggacaageetttactagteaaageaegeaageagttteteaggetettggtatteagtgaaaeetteataceeettaceg tcctcaatccttaggaaaggtagaactgattaatggtcttttaaaaacacacctcaccaagctcagcctccaacttaaaa aggactggacagtacttttaccacttgccattctcagaattcgggcctgtcctcgaaatgctacaaggtacagcccattt 75 aagattetgtatggacgeteetttttattaggeeedagteteatteeagacaceageecaacttgaaetgtgeeecaaaa acttytcatccctacaatcttctgtctagtcatactcctattcaccattctcaactacttgtaaatgccctgccttttttacagtgctgatttatacttttcccccaaaccatcataactgatatctcctggttttacctcaaaccgccacccttaagt ctctcttaaagtggatagaagatcttcagtgacaaggtacactccaatactttcaccctaataaagccctattcttact
tttatattcactcttattcttgttcccattcttatgccactctctacctctccaccagctatctccaccactatcaatc caccgagtcctcaatttactcactgctaaaaaaaggggactctgcatatttttaaatgaagagtgttgtttttacctaaat

 $\verb|ctgaacccccttgggcactctaattagatgtcctgggttctcccgattcttaatcctttaatacctgtttttctccttct|\\$ cttatgcagaccttgtgtcttccatttagtttctcaattcatacaaaaccgtatccaggccatcaccaatcattctatac ${\tt cgccacccctaatcctgctcgaagcagccctgagaaacatcgcccgttatctctccacaccacccccaaaaattttcact}$ gccccaacactttaccactatttcgttttattttcttattaatataagaagatagaaatgtcaggcctctgagcccaag agaagetcccccactgagcaccttgtgacccccacccctacccacaagtgaaaaaccccctttgactgtaattttccact acccacccaatcctataaaacaqccccaccccatctccctttgctgactctattttttggactcagcccacctgcaccca ggtgattcaaaagcttcattgctcacacaaagcctgtttggtggtctcttcacacccgacacgcgtgataattattatatt acttttaactaaaaccettteaqaqteteqeaqqqaaqqetqtatatateteataaaatgttggggeeeactggateaga caaggccacaaaggccaaagggaagtaaagatctcattatttctcctaataatttccctgtcctttgtcataaatggtgg gtaggctgttatggtgatggcagattttctttccataaaatgtccataataggacatttgaacagaagggaaaaatcaaa 20 gtttaaggggaaaatatagatgtctaaagaatacatttattcattttccacagtgcaatttggacaagagcctctttc gtatgtgctactatgcccagctaattttttaaaaattagattttaatttggtgaactatttctgtaggaaactacaataa 25 atgaacttggtactctgagtaaagcataggaggagttatttcataaaatgtggagcacaatcatgtgacaaagataatgg gatccccatttcataaataaatctgaagttcagagagagtaacaactggccagggtcacatcacggagacagaggcaggg ttcccactgatgcctctgactccctgtcccaggcccttcctcctcccgcaagcagaagtgcagggggcagagctgaccct gtgcagtgaaaatctgagggctgagttcctattggaacacaagtgaaagacttcctggcttctaatctcaggataaggac tcagagctccatctgttccagccttaggataagaaccagaatcttacaccatgaaagcatgaaaggtaagatttgagtga 30 gaatatagaactttattittaaatottatatacatcataattacaaggagtagtgtccatttgggttccttggccctgatg tgttagtggaataaacatttttgtcagggttgccatgtgtgtctgtgcacgtgtgcactgtacacctccaggggatgtac cctaaaccacatgaatgtgatttgcacatccaagatttacagtgtactatagggagaatcttttgcaacagcttttgcta 35 taatacagaatctgagatgtctttgagaaagaaaagtgtaatcattaccaaaaaattattctcataatgtgtgcaaattt gtatgaaatctatattggccatgggacaaggaggtatttccagctagettctgaaagggctctattctctcataagaatt cagctgttgacattaggtgatatctgcccaggtcatcagatgccatagagaaagagggtttgctgaaacttatatcagca gacacaaactctgccctgaaggagcatgtaatctcactggggagaaaacaaaacatatgataatttcaaaataacaaact aggcaaactagttaacacttaaaaagcaggctttattcaaatgcaaaattgcatgttacagggtaacctttcagtaagaa gatgaaatttaaagaatatgtagaatctaggtaagtggataaaaggtctgggggcagggggaaaggagagcatttcattgt gaatcaaggaatttetecaeetgttttaaetetteeatatgacateaaagagatgteaettgeagetageattteagtga tgttttcttactaataatatcgtgataaaagaaacattgactataagaaataggaatgggtctcataaaaggaaacagca a agt cag c caact gaa aa ag ag g t g g c t g aa g ag g t g g g g g g g g c t g aa g c cag t t aa a t ag g a t g g t c ca a t t c a c a g c c ag t t a a c a g g a t g g t c c a a t t c a c a g c c a g t c a g c c a g t c a g c c a g t c a g c c a g t c c a g t c a g c c a g t c a g c c a g t c a g c c a g t c a g c c a g t c a g c c a g t c a g c c a g t c c a g t c c a g c c a g t c c a g c c a g t cgtttctcctcagaaaagacaaaaagctgagctgtataaacacctgtgggctgggggttgagggataaatgaggggcgaaa tggaagctgaaggaactgttggtcaggtagaaatcttcccagatgcactgaaggaaacacattcatgttgacgtagga 55 agggcgatttaatatgggtcattcatactgaaagaaaaacaaaagataataagagtttaaaaaattgcaaaacttggagtg ttagtagtaaaggtaaatattcattagagatgagaagaggagcaaggaaatgctttcagctggaaatctcagacaagagg ccaggctttaggaacctctgaagatgaacaaatgtaagcaaaccctagtagcagcacttctcagattttcatgtgcttac cactcagagatggtgttaaaatgcagactctgattcagtaggtctgagtggagcctgagattctgcacccctaacaagct ctttagtgatgcttatgccactggcgcacagaccccacttggagaaatttttgtggtgcatacggtctttgtctccagat tatttatttttgagatggagtctcactctgttgcccagtccggagtgcagtggcacggaggcagetcatgcaaccacggc ttttgtatttttagtagagatggggtttcaccacattggccaagctaatctcaaactcctgacctcatgatccacctgcc ggaattagaaggcatgcttaaatggaaagtgaaattggagaaaatttaaactcatgaaatagtggtggttataaactcgt gataaattatateetgggatataatttaatgagatggtaacacatttagtttaaagaaataagtgacaetttttttgtgt gacacaactgtcttattcttggaaaggacaaggagagaatgaaatatggtatgtcttcacagcacctttcaaagggagaa ccagattctgaggagctggtctcatgatgaactgtcagggtaaaccacagttcagcagctgcaaatgtgcttgccaaaat agagacaaaaaatgttctgaaaacaaaatttcacatatgccctcctctgaggttggcatcatatcttcctgtgtatct tgggtgtagcttctatcctgccagaatttagacagtagaaaccaaatgaggtgataaacagagtcattttgcagaaagagt tacctttgacttgttctaaaaacacaccatacttctaccccaccttcctcagtgccgtcacacaatggtttcagtgtga aaaaaaaaccacgttactggaaaaggaggtgcctgggacttgccactctaagctggtagtcaagggtcttgagttcta aaagcatacgcgttaagagcatgattcctggatccaaatgagtatggatctcagcattgccatttattgtgacctcaggc tattttatttctctgtgcctqtttctttatcagtaatgaagatgttcatagacccttctcccacagacttaaaggcatat ttcatgatttaagacatgtaaaccattcataacagtatacaacatggaattaatatttgataaaggtttatgattattgt ccaccaagatcatattcagacctagaattctgtgattcttatgaattaatacagccttggtcaataaatgagagctgggc tccaacttcaactccacaactcctcaataagccatgggctcaagaaagttctgctcagtggcccctgaaaaatgctttca tagteteactaccataccactgettacacaattteetteetacagaetgeetteetteetgettteteecatataccta

 $\verb|ccagctaggtaataattttcctgaaatcagggaccaggctgactcctcttgctgtctcaagaaagcttagcagtttccaa|\\$ cacaaaaatgttcaataaacaactattaattgactgattataaaaaatcagtgacacttaaacttaataagcaattg cttagcatggtaattagctttttgctaatattcttccagcagtctctcctctgtgcctcaaggacatcttaaaaaaa aaaatctagttgatctgcttccatctagtggcaattaaaacaggtggttccggtagccagaaaacagctctgggtagatt gtgccagaaaatactttcactcagtaggtgcgagtttgaaagaagatcttcacatctgtgggtttcctgccacagacataa ggagaccagcccagaaaagaagcattctcctcactagactccatttgcactagataaagagaagataattaaaaag aataaaaagaacctccactgatcgtacatcctcatccagttacccctgccccacttctccttcacagccaacattttaa aagagatgactgcttgttctgtctctactttctcatcctcagtaatgctcaatgcttggccgtctgacctctgtcttgat cttttcatttctctttcccttaggtgacttattagataatgatgttcctctggctcccatactctctcccaggtcctctt ccattcttaaagcactcacacctccctggatgatagtacccactcctgagatggcagttacctcctgaaatgtgaggga cccaaatccacttctcctgccatagcctctgtgctttggataggtccaatgagccacagtgaatgatgtgcatacaccca aageteaqtacaaaaetgaaccatgatetttacetecaaaaceteteattettttatgtteeetteteagaagtaaaca atteagttaatateaeeteetettattteatgaaceeattettaetaetagtteeetagacaggegeeateggttttaat ctaataactgcaaatgcctccaaaacaagtctctttgaatccaggctcacctgtctcccacacttgccatactgctctgc agggtgaccttataagatgccagaggtaaggctactcactgtttaaacccctttagtgatatcccaaaagacctcaagat aaagcccatatcacatggcttatacattagtttatgatctggcttctggtgcctcatttttccccactttttcctttgca ttctaagcaatggcccatactaagtttgtgattggtaggatggttgcccaaaccagcatccaatcccttcagaaatcatc tcacttcatttctagcattttaaaggaagctcagttgtccagctgggtactgaatatgtcaccaaagtcctcctttcata gtttattttacttaactctccttcctaaaattccagagcaagtcactaaaccctagatactgagaaatattttccatc 25 ttcatttctgccaggtgggccatcaactttcacatgtctgcatctcctcccactgtgctatttctccagtagaagaaatt atttctgaaggacaatgcctgttagagcaattgaatgcaaatagtcaattgaataagcatttattcatttctcaataagt ttgctaaattgcctggtggcaagacccaatatgtccattcaagtgtttatcccttcccaatctgccatctcatcctacct gcagattcttcccttgagggacagctgctaatactgtaaaactatgtgccattacagctcacagcatcatctctatgaga atccacaagagaatttcactttggtcttgttggtaggaattgtgcagcctcatctgagtaactaatgtgtttttatctta caaacacaaggaatatcacatggttctcctttgactggctgtaaggaaactcagagctagatctgagaccctctcctacc aagtatataaaactttgtgacatacatttttgtgccataacttcaaccttggttccaaatgatttttgtaccctaagttt aaattttggctttcttttttttttttttttctacccaataaaacatcaagctcatttattattgcgaagagcgaaacaacaaca actctttgagcagaaagaatcatttgggaggcaatatatttcagtggctgtaaagtggcattctagaatcatcctaccca ctgttaaagaggcataataattgtatcatcctcattgggttgataaaataaaatattccaagtatttagttcaggtcct agcacgtagacagtgttgcattactgttttaatcctttaaagtattaaagactactatttgaaatcttttcttctaaaat tcagcctgctgatgaccaagtgcacttgagcagggggaatcaaattcyaattatttttttagggatgatgatagaatcaagtgattagattatttttttagggatgatgatgatcaagcaatagatgatgattaatttttttagaaggaaaaaacggggcattgttcatttttgaaggataacctgtgtgttggttcagtttcatttttgaagatttttagaagatgattttagagatgatgtttagtgagtttaatttttgagatttagagaccagtgattttagaagatgatattggcctggtttcattattaccaaaacaggg aagtgctagagtcagaagattcatctgaggacagaagaataggggtgaaggctctagtcacttcattggctaccatgctc Etttateettgtaaatgeeattaaetatattitgtettagatttageetgggaatgtageeattattetaeeattgeet ccataggaaaaatactcttcatgttttaaaggaccaacctacaactaaaatctttggaaagcagaatcatttgtaagttg 60 gtgcagtggtgctgtcatggcttactgcagccttgacctcctgggttcaagtgatcctcccacctcagtctcctgggtag ctgggactacatgtgcatgctaccatgcctgactaattttttgtatttttgtagagatgtggtttcgccatgttgcccag gctggtcttgaactcgtgggctcaagtaatcctcctgcctcagcctccaaaagtgctgggattagaggtgacagccaagg tgcctggcccacagatgaagactatttaatgttatcttaaagataccctaagcttcctaccaagccagtgatcttttggg gcttctgttttctttgttggcataactgtaactagcctaactgcccgttatctgtttcctgtttgccccacactgattcc cacagcagttttcaagttatcggtttgagatcttgtacagaaatgactccaaggtaaaaaatttaaaaaaccaccctcta actgtataatactataagatagtgagattcaatcagcacagaatttctaatagcaagggcagagacattttaactgctca gtgctctcaggttatacatagctaatgacgttctttgcatatcaaccactccccctcacacactttgtctttctgg attggttagaaaacttacctagcgcccactattctcaaatttaaatgaaagataagatcagagtggcacgcaattaggga ctgataaataatatttttgtaattgccagtgtaaatggacaggggcaacctttacataccatattcagtgaacagaata cgtactaactaatttgatggaaggaaaattaaaatgacaatcaactgagcccacagaaaaggcaacacagagcagttggtt gtcaccaggetggagtgcaatggtgcggtctcagctcactgcaacctccggctccagggttcaagtgattcttctgtctc agcctcccgagtagctgggattacaggtgcccgccaccacgcctggctaatttttgtatttttagtagagacagggtttc catgagccaccacacctggccaaaacaggtatatcttaaaagctgcccaatgtccatgaatgttacagccttgaatggtt cttccaggtgagtttggccaaatgtggcaccatacacccaaggcctgctgcaggctagtgggttgctcacactttaaagc

tgagacacact catgcctta aggta aagggagt gata at ctggg cag cagatgtta acttct caagg cag tcct ccttct aggree of the contract of the contract concttttcctctccagtgacggatggttggaaagcatatatggtgcatttggttagagctgtggccttggtgaatagatact tgggagaatacatgggaatttctcccagggttaatgccatgtgttgggaaccaggtgactcttgaagaggtcag gtatttgggagcagtgccttgaaaccttagtggacattagacccacttcctagtggaattgtagcattgaaatccaaggc atgtaqqctcttaqaqqacagagatagtgtgtcattttttcagaattaattaagagcaggccaggcgtggtggctcacac ctgtaatccaagccctttgggaggccaaggcaggcagatcacgaggtcaggagatcgagaccactctggctaacacagtg aaaccccgtgtctactaaaaatacaaaaaattagctgggcatggtggcacgctcctgtagtcccagctacttgggaggct gaggtgggagaatagcttgaacccagaaggcggaggttgcagtgagctgaaattgcaccactgcactctagcctggtgac agagtgaggctctgtctcaaaaaaaaaaaaagtattaaagaattacataagagcaaagaaccattagaatatctcacttag 10 ttgttatcagcctagcaagctgccttgaaggtaatagacatttttaaaagtttatcagatgaaaagcgaaaatcagccaa cctgttttaatgaaggtgtgtcctgggctgatttacatgtctccagggactgatgatggctctagaatgtaaagcttggcatc accatgactgccactggaatgaagagggggttataatcacctccttaatcattgagaaacttttgtccaattctgaaag 15 agaaatcagtaaggcacatagcatgagaccaccagcattatttccttagtctatctcatgatatttgacttttttcctc ttacateteceagtagtageecatttgatgeeatttgacagatgaggaaactggeatgggaaggeecetgatgagtetae agcataggcaaagactggaccagccttgctagtctaatgcctacagaatctcaatgcccagattttgtggttcatagagtt cctgaaaatgcacctaaaaatgttggcaagaatggtcatcgttgtatttagctccatggacttgttcaatgactggaact ctgaaacacagagaagagctaaaagcctaatacaacttcaggaaaaataaaagccaatgatctgaactggataattcacc 20 agtcaaaggaaatcattaatgcttttaattttaaagcagttgtgcaaaaataagcacttgatttttacatgccaaggacct ctaacatttgaaggaatctacttttttacatattggcagagggtctgattctatccttagttcttcccattactttgatg atacacagtcctctgctaaaggcctccctgcctctctctgctcatccactctactccctggccctgggcacgcagcacac agagatcagcatttetgacagettetgtagateetaceatttaaagaettttgteateeatgeagatagteteaggagaea gacacaggtagctattctttcacatgctagcttaacatgcatttgctttagcacctattgccaggcactgtgtcaggtgg aggyatataaagatgaacaagaacaagatcottittaataagattittaagagattitagaggattitagetagtitaga gagtaticaattattiggggaagtaggtggtcattagtgaccttttacaggcatticaatgggctaacagagatgttagat tgtagtggaatagaagaatgggtaaaaagtaaatcagtgagttcagattitaggagttaagatggcaagagggtgagaaca 30 aaaaaaggaaatgattgtcattaaaggaggagaaagaccagccaaagattttacagtgagttaagcatacaaatttatt atcgttaagatttcagttttccaggacaaacttactcactttgacatattggactaggatttgaccagattccagatgat 35 tcacaaatggttttcttcttcccaattaactcagttccttctgagcagatgaaggtacatgcagaggtaaagctgaagct ggccaggggatggctacagttcatgatccccaaatctggtgctgatagaggctcacactgaatcacttcaatgaaaaaga tacattacttgtgatattgcttccaggctttattttcttgagaatgatggtggtggtgaatgagagatgaaggcaagga 40 taccatgccatatggcctctgcatcaagggctcttatgggatattctcagagaatctctgccgtttcatctgttctgatatgggatattctcagagaatctctgccgtttcatctgttctgatatgggatattctcagagaatctctgccgtttcatctgttctgatatgggatattctcagagagaatctctgccgtttcatctgttctgatatgggatattctcagagagaatctctgccgtttcatctgttctgatatgggatattctcagagagaatctctgccgtttcatctgttctgatatgggatattctctcagagagaatctctgccgtttcatctgttctgatatgggatattctcagagagaatctctgccgtttcatctgttctgatatgggatattctcagagagaatctctgccgtttcatctgttctgatatgggatattctcagagagaatctctgccgtttcatctggttctgatatgggatattctcagagagaatctctgccgtttcatctggttctgatatgggatattctcagagagaatctctgccgtttcatctggttctgatatgggatattctcagagagaatctctggatatggatattctcagagagaatctctggatatggatattctcagagagaatctctggatatggatattctcagagagaatctctggatatggatattctcagagagaatctctggatatggatattctgatatggatattctgatatggatattctgatatggatattctcagagagaatctctggatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatatggatattctgatattgatattgatatggatattggatattggatattggatattgatattggatctacccaagcattttgaaaaacatcccaattcactgaagcaagtccaacttccgtaaattccagtaggtgggttgacag $\tt ttttataatttcaataagggattttgatagcacttctaagaattaaactacttaaactaatgcatcaggagcatacttgtagataggattaggattttgataggattttgataggattaggattaggattaggattgattgatggattgattgatggattgattgatggattgattgatggattgattgatggattgattgatggattga$ agaaaagttaaccaaaacttcgtaagttcagatgacattggttttccccatatggagataaggttggcagttaaaaatg aaaaaaaaaaaaacctaccttatttcaaacttgaaaagatcaagagattgtgtttttgtttttcagttgttattctcc ctgggaaggaaactggttggtattaagtaggacaccacataaaacaggtgttattgagaggagaagaaccaaaatgtaac tgaggttcaacaagacattatttatgcaatggcaatgagaaaaataaaaaacacagtataaccatgctgtattgctataa 50 gttggttctggagatgaccagtttccaaalggtccacaggtggtttcttcaatcccagttaagtttgttccttcagagca gctgaaggcacactgtgagctgaagctgaagtttcccaaagggtgagtacagtccatggtacccagctctggggcctcca aaggeteacaetgaateaetteaatagggaaagaaacagtatggggaagagttaagaggaaetgaegeetggatttgaat cctagcoctgccacttgataaccatgtgcctttaaacaaggttacttgaaccctccaacttcagtttcttcatctatata 55 agaggaataatgaaattgtgttatctttatcaaattgatatggaaactaaatgtaattcaattagcataagtcaaggacc ttagaacaaageetgactcatcagaaattctaagtaaacattagetagtcttcatattattatcttcageattatctgta gtgagaatccttaaagccaaataggtgtaactgggaatgaccagcttagtcgggaaataactatcacatcagagcccctg agtctactagagtattgggagcaagatgttcagagaaagagtgggtctccataataagccttctttgcaaggagagaata taaaagtctaggaagcattttgacctcaattctgtctttctattctagctcagttccagaattttaactcttttgattttg 60 acaaccctctccagaaactgtatctatttccctgttctgattggtggtacaataggtaaatttaagacttggaaatcaaa gttttcacattttagaccctgccatgccatttagtaaacagtacaactttcatgtettattcctcatctgtcaaatttaa gccattattgctaccttgctctagagacttcaaggaagaatggactcaaggaatcagaagaatttttgtatttggaaact atatgagatgagattagggagaaccatgggaactaagagaaaatgttatcttttttcattgatttaaagagtatctatta 65 gattgtcatgtatgtgtgtgtgttttaattgcttttaattgatcagtctccctgtagtatgaataatgtatttgagggg agttgacaagtggaagacaaattagaaaaacactaagttgtaaaaattggtagaatgttaccctgcataaatgttggggg agttaagagagtteteataccagggtgcccatgtaaatggtgattccacatatgagataagaaatacgaagagaaaagct gactgggaacaattggttttatagtcttttaaacatccaaaggacatccttagcatatttgagttcagagctggagata ggcttatcagtccaaagatcacatagatttgtgagtccgcaaaagtcagtaagtttgaccaaaggatacatgtagattag 70 agtcagaagagcaatatacaaaagacaaaagctgagaaattatagtagtttatggtcctggataagtgctcatgaaggat ctcaggagaaatgatcacaggtagaaagaatgagaaaagagtgatatgagagaaaccaagacaaagaaaagtaaaatgtt aaaaatgagtgaaataggcataccaataattaaaaatgagtaaaataggcataccaataacataagggttaaaaaataga gttcaaaaatgggtgagggtaaagtattaggaaggagtcatggccagggatcaagtgaaatgagattagatctataggt ctatttcagttggttgacatttaaatgtattttggttttaattcttattgtttacaaacattgcttttttaaaaaatta 75 aattgtccaattcaattcaggctcacaagcaagtgcctcatatatacaggcattttgtggatcccaaagatgcaatgata aataggacacttactgatctcaagaagttttcagtaccagaggagacggacaagtgaacagatgacttcaacataagtgg gagaaatgaggaagaaatatgtggagCtatCagaactaagaaagcttcCtagaagaaactgtctttgaacaatgtcttaa aagtgtggagaactgcaagaaggaaaggaactactagaaggaaaaagcaagatactttctgggtaactcagcctcctaat gggaatctaccatgctaattccttatggtaaccctgacagcttttateccaacactgtgcttcttgtggtactcaaaaag

acttgttgagaagtgagtcgaaacttcatgctgacttatgaaatctttacggaaaggtaacaatattgtgaaagcagagc tttctgatcaaaacttcccatttctcagagtggctagtatcattttgttccaaccagcttcatgataagctataatgatt acagttgcaggtgtaattattgatgatttctacacattctccatggccactgcatgaccagggctggcaagaagctttaa ggaggtcagaaaaaaaatattttaatgtgattacattttagtactcaaagtcatttctttagacatagataaccttttgt ctgagatgatttaaataatcaggaaaggtttatttgtaaattcatagcataaaaatcatatgctaaaatttttacgtata aaatacactaagcatatagtcataggcatttatttgcttttggaatgaaattaccaatactaatattctgtaacacttat tggaattgtagaagattttacagaaatattcatacaccaaagatagtgcaatttttatataaaattatataaaggttagac caagaaggaagcacgcagcaccacactctctacttcacaatgtgaaaactgaggtgatgtgagcctaagtttccaactgg ccccagctgtcagcttctcctcccctgccttattatcaaaggcactgattgtctagctcttcctctgtacttcctacgta gatctatcattttgatgtaacttgatttaggggtatagcttttgtgcacagggacaatcttacacaccaaaaattctta ggagtgacacgatgcaagattatatagagggctagatgtattttagaatgaaccagaagctgttctcatccccccacctt tccatggggtaaatctgagtattctcttaaccgtggcccttcctgagtctgaggcagcatagccgtcttgtcactcccta cctgtgtaacagagggctgcctttagtttgtggcaggcgtcatcgttccatttgctgcatctttgtttctcttgatata gatelecacgeaglectecttgltettettgttgttgggeteaceateteeceagttetetgettetteagtaagagatt tgttggttcccacccacgtccatattcctcctatcttccggattcctatccagtagtaagaacgactgaaaggcagagtc ttctccagatactcaatttccgccttgttttgtatggcaactaaatctgtgtaattgtctcggcagaatcttctagccct ttgccagttcatgggtttttcagaataatggtaagtcagcagtcggttccatgatgtgccaggaaatctgcaagacatcagtgtgacctatgcagacttacataatgttacagctaaaaagaacctagcactactccaggctgagctagacacttagag atgaggaaacagagcctaagagtgtatgtgaccatctcaggatcacagaatagttgtttgcagatttgaagtagaaccta gaccttctggcttgaatataagatgcttttatctaaggttctatttgaaacaaatttagtggttttctaggtttattttc gctgttaatgatttacaactaattaccgtgtaatatcatataactatacaatttacgtatactttttaatcctggaatca tttcttgaaggccaacacatatgtacctatgggagaagcataataaggacaggaagaacagtgacatacttttaagtaac ctcttttacataaaaaacattttattttaccataggaagaactgcttctggaaaagcccaatataccactcaactcttat atatctaactgtataattttttaaaaagaacaatttacaaagccaaatggtataggattatgaaattcattagatcatgtt 30 ctatacacaaagagactcaactgatgatgtttaataaacatatggacccatcaaatatgagggctttgaagatatctaat taaacacataattacacaatgacttcataataatatatggcattctaagcatggtatgatctacatgaatcactatttaa tacagtaaagaaacagatataattgatggtaaagagcatcataaaataaacattttgaacagagttttgaatgagcattc cactagaatgcaagttctaagagggaaaaaactgttgtgtccactgctgtatccttagtgcctagcataaatttcacaca ttgtagggactcagaaaatacctgttgtatgaaaagagcactaagtttctatgtgacacagtgcagacatggcataagga ttaggaaatgaaaaccaagttcaaagctattgctggagagtcttcaagaatcagatataaaatttgtcacaacaatggg agaaggaccaaaaaatgataaacccccgtcccttaataagctcgtattgtaattgtagaaatgacattaatgtacactga cattattcctttataattgagggattttgtggggttattggggatttgaactctacagcatgggctattataggttaaaaa tagtgttcaggagtttctggggaagaactaaaggtaagaagaaaagagatgtttacagaagggatagaattaacagctct gtgaaataattttcccttagactatgtataactagtggatatttaagaaaaatgaatataagtaaaatagacttagcgat atataaatatcataacataccacaacagagcattgtccacccccacaacttgaagatgttccataagtccctctgggtgc
tctgacatttccatggaaatatctgcaaatgaaatacaaaattatatttagatgtatactcttaaaccacacatttatag cctttgaggtggtgcttacaactttcttaataatcagaataaacacatatgtctactaaccctgtctgaggtaacaggt ttctragacatagatgaaaaattacttcaaatttacatcagaactgatgacaagttttgttttgttttattttattttat cgctttagtctcaagttgctaatcggtactgccctgaatttttctatatggtttggtaatttttatcttctgct cagacaccaggaaagaaaagtatttcttttttaataaaaagaaatacctttttgagcaactgaaatgacaaagtcacaa atttcctgcacaccttaaaatatacttaatgtaaatgacgagttaatgggtgcagcacccaacatggcacatgtataca tatcacttctcaggtagacacagtgtttattgcaaaagatctgatttcaatagtatttcttcaagagtctccccagagac aaagtcaagaagaagaatcagcatatctgagaagaagatttcaggatcactttttttgagggtctgagaaaatgttta gtttctatattatttaaaaccagaattgaaatggggtgattcctatccttgccacctgcctctacaaccccaagagtttc tatctgagcatctaaacgtcttttaggctgaaaggctcaccatggctttgcttggtccttctctagttcttctgcagccc atgagatggttttataagactgcatgtgaaattaggacccatatgatgaaggacaataaaaaggaagacccactgatgtg agtcaatgagtcaaatgcaaatcagatttgcatttttaggaaaataataataacaacaacaaaactctgaagctcagcg ccccatatttattattattgtttaatctttataacagctctctgctatagatatgattattatccccattctaaagagtct caaagaggttaagaaacaaattcaaaaactagcgaaagacaagaaataactaagatcagagcagaaccataggaggtaga gacacgaaaaagccttcaaaaaatcaataaatccaggagctgcattttgaaaagattaacaaaatagatggaccactagc tagactaataagaaagaatcaatagacacaataaaaaatggtaaaggggatattaccactgatcccgtagaaataca aactaccatcagagattactataaacatctttacacaaataaactagaaaatctagaagaaatggataaattcctggaca catacaccctcccaagactaaaccaggaagaagtcaaatccctgaalagactaataacaagttctgaaattaaggcagca attaatagcctaccaactaaaaaaagcccaggaccagatggattcacagccaaattctaccagaggtacaaagaggtgct tcctgatactaaaacctggcagagacacaacaaaaaagaaaatttcaggccaatatccctgatgaacatcattgcgaaa atactcaataaaatacggcaaactgaatccagcagcacatcaaaaagcttatcaaccacaatcaagttggcttcatccct ggaatgcaaggctggttcaacatacacaaatcaataaacagaatccattacgtaaacagaaccaatcacaaaaaccacgt gattatctcaatagatgcagaaaaggccttggataaaattcaacaccccttcatgctaaaaactctcaataaactaggta ttgatggaacgtatctcaaaataataagagctatttatgacaaacccacagccaatagcatactgaatgggcaaaaactgaaagggttccctttaaaaactggcacaagacaagtatgcctctctcaccactcctgttcaacatagtattggaagttctg gccagggcaatcaggcaagagaaagaaataaagtgtattcaaatagaagaggaagtcaaattgtgtctgtttgcagat

gacatgattgtatatttagaaaatcccattgtctcagcccaaaatctccttaaactgatcagcaacttcagcaaagtctc aggttacaaaatcaatgtgaaaaaatcacaagaattcctatacagcaataatagacaaacagagagccaaatcatgagtg aatcaatatcatgaaaatgaccatactgcccaaggtaatttatagattcagtgctatccccatcaagctactactgactt ttttcacagaattagaaaaaactactttaaatttcatatggaaccaaaaaagagcttgtatagccaagacaatcctaag caaaaagaacaaagctggaggcatcatgctacctgacttcaaactatactacaaggctatagtaaccaaaacagcatggt gctggtacaaaaacagatatatggaccaacggaacagaacagaggcatcagaaataacaccacacatctacaaccatctg atctttgacaaagctgacaaaagaagcaattgggaaaggattccccatttaataaatgatgttgggaaaactggctagc 10 catatgcagaaaactgaaactggatcccttccttacaccttatataaaaattaactcaagatggattaaagacttaaatg gaagacctaaaaccataaaaattctaggagaaaacctaggcaataccattcaggacgtaggtatgggcaaagacttcatg actaaaacaccaaaagcaacagcaacaaaagccaaaattgacaaatgggatctaattaaactaaagagcttctgcacagt agaaaaaaaaaactatcatcaaagtgaacaggaaacctacagaatgggagaaaatttttgcaatctattcacctgacaa .15 ttagagaaatgcaaatcaaaaccacaatgagatgccatctcatgccagttagaatggcgattattaaaaagtcaggaaac aacagatgctggagaggatgtgggagaaataagaatgctttttacagtgttggtggaagtgtaaattagttcaatcattgt ggaagacaatgtggcgatttctcaaggatctataactagaaaaaccatttgacccagcaatcccattactgggtatatac ccaaaggattataaatcattctacgataaagacacatgcacacttatgtttattgaggcactattcacaacagcaaagag 20 ttggaaccaacccaatgcccaccaatgataaactggataaagatgatgtggcacatatacatcatggaatactatacag ccataaaaaaggatgagttcatgtcctttgcagggacatggatgaagctggaaaccgtcattctcagcaaactaacactg catcacacactggggcatgtcaggggatgtgggggctaggggaggaacagcattaggagaaatacctaatgtagatgacag gttgatgaatgcagcaaaccaccatggcacatgtatacctatgtaacaaacctgcacgttctgctcatgtatcccagaaa gaacagaggccaatcagttccaaatccatgctcttgatcattaagctgaacttatggcaggaacttggaagacatggtaa aatggggaaaaacgtgggagacttgtgaagtgccagtgctcccactataccctgaaagaagtatctagactt acttttttctcaagtcctctctctctctctctaagagatgcggaatgctgctctgtcac tcactatgttgctcaggctgtaattctgtcttgaagcttgtccaatcaggctttcagccacaccaattccctgagactgc tctcaccaaggtcctacacttcactaacaaacagcctattctccatcctcatcttacttcaccagggagctcctggtt ttcctcctacttcactggctatttcttctgtatcatgtgttgattctccctcatctccccaacctccaaaccttggagt actocagagatcaccgctttgctcttctgtgtctaacctcactaacttggtggtccaattcacactcttgactttgaata ccatttaaatgcgaacgaattctaaattctgtacaaccagaaccattctcctgtagccaaatgcctactcaacatctcca tccccaaacaaatttagttgttcaataagcctctcatattttacatatcccaaactgaacttctgaatttctcctccaat ctgtagggetetteccacageetttecateteagtggattataactecateettecagttacteagaceaaaaettttgg agttaactgagacacctctctttttttcacaagtcatatccaatgtgtcaacaaattttggtagtggaaatattgcggg 40 tccaaaggactgagccctgaacaaagagttaagttaccttttaagcattttgtggggtgggagagaggggtatctgtgca tcaagaagaaacatgttttgegacttgagtttatctgtctagtgaccttgcagctgcacagctagagaaacagggtcttc agcttctggtaaggcctcaggaagcttacaatcatggcagaaggtgaaaggggagcaggcatatcacatagcaaaagcag gagcaagaggggatgtgggggggtgacagtcacttttaaacagccagatcttgtgagaactcattcactatcatatgaaga cagtaccaagaggatggtactaaatcattcatgagaaaccccacctcatgatcaaatcacctcccaccaggccccacct tttaatgtacattcagccaaaagaagatttggaataggaaaggtcatggagatatattaacagccatttgatgggtggta 55 aggaaaagagtggttattagactgttttgtggccctcaaaaggtagaactagatcgagttggtgagcattataaaaccat attgaaagcagcatccctgggtccaagggatggtcaaaggaccactacccaaccottccctagcctacgcctccattaca 60 tecttacatttggcatgtaagcccctcttactgtetgtcatctatctectacacagttcacctaaactgttetctectga cccaaccttgattttcatcccaaatgcttccttgccatctctgggattcctgtcttcaccatcaccaaactcccctcaat $\verb|cttccagtttcctgttcaaaacttttctcctacctccttgctttgtcattagcccgactgcctccctaggacatcacttcc| \\$ cctgcagatctctcaagatgacaatatttattctccacaacagcacatacttcagggttggaaggcaggggcaatcttctc ataaaataactetgettetttgaagettgtgacaetgagataaaccateteaetgteeteattgtagtgaeeteteaact eeteatgeaagattggetttggeaeetagtteetgatetteettteeetgtaageaetteteatagtettaegggaette accatccatggcacaaccaataccacagcccagatcctcagctctccaatgacattttcctccactagacttgagctacc tecttecetaggeacagectcaacetegacaacacetaagactgtacegtetetaaagtcacatgtteaaacactteact etttaaccactgtetectattetgcaagtgtattgctcaagtateteattgcaatgctttttactetactcattgaa ttttttttttttgagacagggtctcactctgttgcccaggctggagtgcagtggtatgatctccggctcactgcagcctc catctccctggttcaagtgattctcatgtctcagctcccgagtagctgggactacaggtgcatgccactacgcctggct
aagattttgtattttattagagaaggggttttgccatgttggccaagctggtctcgaactcctaacctcaggtgatcca tctatgctgcactattaaaactgccttgacaaaaattataatagtgagaaaattatgacagtgaaagagatctgaaataa tcaacccccatcttgcctttaccttccagactgcccttaataattcctgagcttgggccaagctatctttggcagaaatt tagtttatagtttaaatgataatagcccttctccaaaactaaactgcctttgtaaaactaataaaaagaccaccaatgaaa ggttaggaggatgagaggagcctgaattctgctaaggtgtagatgtaaacaattaccaactgttattccggaggtcacaa gatttgcaacatcgccaattactcctgcagataacagcactatcatagaatctgattggccttttgagatgtcttttcag attettacattteaactggtggetetacetggacceateaacaagteetgtggetecacecagaagcagaettaacatge tgaaaaatettageettagaattttgggggaggetgattteagtaataaeaaaeeeeggteteeeaittggetggetet

ttggacagttacactgttggcagatatatcttgcttccaaaattggatttttgtttaatgaatttattctgttttcttga tatttacaactgtgaatgttgtgtctgaattctctttatttcttgttgaaaagaactatattgctacagccagtacatac ttcccaaactacatagtgttatatggtatatgaccaatcaacggtggcaaagctccagaaataccacatagacatcagg gacactttaaactaatcagcctatagtcctttttcagtaatttccaaacctggttgtgcatccaaatcacttggtaacat gcctcttgagtagctgggactataggcacgcaccactatgcccagctaatttttgtatttttagtagagttggggtttcgccatgttggccaggatggtcttgatctcttgacctcgtgatccacccgcctccacctccaaagtgctgggattacaggc tagcatctgtactgtttactctatgcatctcaatattttttcttttagtatctttcctttttcctttttcctctcttattacttcctc ttgtgctatttttacacctccttttttaaaaaattttttcccttttattctattqacctttaqccctcacaatqattcc agtagtgggggcagttgatacataactaggttttaaagtctagccttctgagaccactcattccatttgtgaaaagtgat 20 tccactotgtatcaggaatgtgotaggttctgggaatacagcaatgaacaaggtaatttttcccttacccctaaggaactt agagtttagtggggaagacagacattaaacaaacaattgtgcaagtaataatctataattattattacaattaaaggaa ggaagagacatatggattatgagggcattaaagaggagacctagtgtaagtagccagttctcgtgaagggacatgtatta 2.5 ggtgtggtattttttatagaaattgteteacacaattatggaagetgagaagteecatggeetgetgtetacgagetgag aaccaggaaagccagtggaatacttcaaagtccaaaggccctggaaccaagagtgccagtgttggaaggcaggagaagat gggtgtcccagcttaaaaagacagtgaattcactctttttgctctacatagggctcaatgggttggatcatggccacco acattggtgaaggcaatcctcttagtctaccaattaaatactaatctctttggaaatactctcacagacacactgagaaa 30 ttttaagttataatttaaattctcaataaaactcaaacaacacactggtatttcacacagctaatttctaatgca tgttotctcttatttcccagagtttttctgcccctttaaaagaacctctgctgttctgatccttatcacatctctgtttt gactgttggctttgttgttgtcgccagtgttcagccagaacttctctgaaactttttttcaacacatgctaagttaatggaa 35 attecteteteecagageaccetaacatacagaagaaaacaaatagggaataactattagacatetteattegttaaaaa tctaccagatgactcttttacatggtgagtttctattgtgaatttaaaatcttccataatatacaagaattatgtttaca aaattatacctttgtgtgtttgcatttatgcttttattagttcaaaacgtttggcctcatggaagtttttcatcgtggaa accacatatttctgaaaaaatatctgacaatatacaaaccttccattcagtttttactctccaattctaccatgttttca aaaaacaactgtagtaaaaacactcagaactttattctggttaacatcatgccttgctaggggacaatagtttccctttt tgaaataaatttaaaacagatgtaacataatttgttaataaacaatgagggggtaatctagaataagtaacttttaccat 45 tattcaatgcaagtaaaaatatcacaatccttaagaactctttaagaagcactgaatcccatagggatgaaagtgattaa attgtgcatagtaaccetegcacagagcattcagtaggatttgcaccattaacaaccetecatgcatttgcetgtgggca tgccaagattttacagcgagcaagggagagttagaaaaggaattctgagatttcagagtcttggtctcttcacctttgct tggaagaaaatatcctttcccttcattagccaacactttcttgatcctgagagtaggaaagggaacactgagtcttttca gttgaaggccgtccttgcctgctggactttgatctattgaagtggtgatggggtgttgcggtttcagccataaaggcatct ggcatagtaggcagaagaagggcagaagacccgaggagagttatctgtctctgttaacttcagtgtatccctctagttccc agatgcacctgtttctgtaaatataaacatgcatgtcatcagaacacttaatattctgcatactgatcatgacaacaaaa 55 tqtaccttctaacacagacactctcactaggatagaccatgtaggaacatcgaattctattcagttaggacagtgatgat gtctacatattatacctctgtcaaaacctacagaatatacaacagcacagagtgaattctaatgtagcctgtggacat taatgaataatatgtatcaatattggcccatcagttgtaacactaatataagatgttaataacagggggaattgaaggg ttattttaatttttaaaaagtattcagagggacttgacctttccaaattctctcaaagcaggtcggagtagttaagaac 60 acaaattttagaaccagactgccagagtttgaatcctggctacaccacttactagctttgagatttcagacaatttactt aacttetetgteteattttetteatetgtgtgataagaaataaagtaacaggeecaggeecagtggeteaegeetgtaate ccagcactttgagaggccaaggcgggtggatcaggagttcaagatcagcctggccaacatgacgaaaaaatacaaaatct ttgcttgaacgcaggaggtggaggttgcagtgagccaagatcatgccactgcactccagtctaggcaacagaatgagact acacaataaagctagatccgtttctttcctctccttctacaaaaaataaagcaactttccagaacaatacccaggtgatg atttetececetgetecetecetaagatattggeaagtttggagggtteaaggagaaacagageatgtagagaagataeet ctctcataaccatttgtgatttacaagtcttacctgattcttttgaacttaaaggatgtaagaaggcttttggfagcttc catctgattcaaggctttggcagctgctgtggaatacatgagaacactaggtaaagcactgtcttccaacatgaagagag aaaaatatgtggaatgttcaatggcatgctttgtataagaatgcaacttacctggcaggaacaaatttcttttgctgcaaa aganaagacaacaaccattaattcagactaaatgacttttaaggatatattaaatccagatacaatatgacttaattca tcaagtgttgcaaactcgatgcttcagggcctctgtaataatcagagcacaagcatggctctgtggcatctagggtaaaa tgcaaagtgcacagccatccaaagggcatagcagcttcctaatgccagcaaatagctacggggtcatcttgcccaattca gctcccaattttcatgagaagtccaaagtcttaatttaaatgtgagatttcctattttgtaaacgtcagaacttaactc 75 tggcagttccattgcacaattccgggaggcatcatataattcaacatgaatagcacccctggagttgtacaatattag cacgactaacatttttatttcctgaaacacttcccacactgagttgtactactaactcttttcttaatacttctgcttaa 80 attttcaaaaacatttttgaagtacattcataaacttcctcacctttccgtaagcatttccgaagccagaggagaaatgg tgctaatgtcaggagggagagtccagcagcagaaagtccagctaccaagggaatgttggactcagtgggagctaaggaag

taagagacgaagaaaggtcatgaggaagaattgatgttaaagtototocgtootgtooctttggoottttttctgtacat tcattactaggagcagaagagctatctagtttaatacaagaagcagagatgtggcattacaggcctttgagatctgctcc aagccacctttgaagctatttccaccattggcaggcagaactctaacttgccaagctcgttcacaataccacaccaccacc ctctqtctcctttttccagttgtcagaattctaccctttccatcaacatgcaacttctgtttttctctatccccataca acttaatattcacaacttgtcaacctgggcgaactttctggttttggatataatgaatagttgattactgtaacaagatag agtgtcctgtggctccacatgtccgagctgcagagccattgagcgtccatccttcaggacaggcgaacttgcacacagtg ccaaacacgggctccccactgcagctcatgttgatctttcccggaactgccaggcttgaacattttaccactgcaaatgt gtaagcgctacttagtittcagcatgtaggaaattaggaccaaacccctttggggcaatctaggttcagaaactttatga agatgtgcactcaagttgagttgatccatgtaattcaaatccctcctcacagctgaaggcacaagaggacttgtaggtga cacgagagagcactttagaagtttgtttgcatctccagcaatacgtttcccaaggtaaccaagttcccaagctcttcaat agttetttttatettaaaataaaataaaacaagaetgtaeetteaeatgtgggettetegttgteeeacteeeetgtg gggccacattggagccttttggatcccttcaacacaaaaccctgctcacaggagaactcacagctggacccataacggaa cactgatcatggcactaattaaaagactaattaatcagaacattagttcctgagcactgttcttctaacacacaaaataa gtgctggctttggctaggacaaggccagtgcctgatagtaaaaactgcttgttttcaatatccttgctctcactttaaag tgaattaaaatttactgcttatatatgcatcaatactatctctgtagctgacaccatgcttgaaacagtctcatcactgc taattatgagccatttcagaagacaggtgtgatgagagttttacattcaaatcatgttctcattattctgctttccgaattttctaatatgattcctttagattaagaattctgtctattccatgctaatgtctacaaagttttatcagcacatcacagt taanaaaaaacagcaaagaattcattcttaacacatatgatcctttccctggccaaacattagttcttttaaatgaatct gaagatggttgttctttaagaaagtataaatcgaaggatctcaagcttaccttcacaaactgggatttgctgtgtccact gcccttgagtggtgcattcaacctgggctggtccctgcaacatgaagccttcctcacaggtgaagttgcaggatgatttg aaggtgaactctccagcaggggaatggctgcacctcacagagccattctgaggctggcggacggccttgcatgtcacagc tcacagtaagtetecatgtggaacaactetaacettacacgttggettetegttgteccaatteccagatgaggtacact gaaggetetgggeteceattagtteaaateettetteacagteaaatgtacaggttgtgttecatgggaagettecaggg ttttggaaacattccacgaacccattggctggatttgtcacagcatcacactcaaccactgaggattttaaagagcacca tgaattttacagaagaatgatetttteaetteetattgagetgggtgeetaaeagagtgaggaagetgeetteaaagggt agatcccaaagtcctatgtcaattcttagggacatgcacagccagaataaaagcttttattctttttcatggatattcta tettttetgatttecaetttgectatgetgagtggtetetaatetatgttateatttaegtgaggtaaaaatttaaaaaa ctttccctgaagttttgaaaatgtaagttgaatcaaaaaacagaagcaatgaggatgagttacagaacgttctgtgcat tctcagagggatttaccattgcaggctggaataggagcactccattctccagaggacatacactgcatggtctccatgct gcttggcaggtaacccctatcacagctgatagagcaggaagaattgtagctgaagtttcccagtgggtgactgcaaacca ggcttccatgctcaggggattccagggctgtacagttcacaactgaaaaagaaacccaaatcagttctgctcatctctca taatggaatttgtaaaattgactgtaattctaccccttttcttttattcaagaaaatgctgatccataacaacaacaaca aaaaagcagtgatgacaaccataaaaaagaaatattgagtgatatggggagagtagtgtaattgtgttttacctcaaaact gttcaaattatatgaacaaacacagcaaacttaggtaccacaacaaatttcttgttacttttctcacaactgctaaaaat actacagtaagcttccaaccaggatgagaaccattcacaaagctatatttcaaatttaagtactagaatacattacaaat tttaaaaccctaatgctgcactgtctactatagtagccactatctgtgtgggctactcaaatttaaacttgaattcgttga 55 ${\tt aatcaaataacatttaaaattcagttcctcagtgtcaccagccacatttcaagtactcaataaccacatgtggctcatag}$ gtacacactggaaaacacagctatggaacatttccattatcacaaaagctctactgcacaacgctgtgctaaggaatctt gcaacgtcttgttaccacctagatgaggtgagtacatgttcctcgcagggacacagaattacagtttattgaatgtgtcctgtgtgccaggcaccatgtaaccatgaggctatgaagttcacactattattattcctcattttacaatgagaaaactgaca tägägägttääactatettgteaaggtgeeaaaätaäataaetggtgaatetaggaeteaaaceeageagggtetgaett catagtctcagctcacgatcaccatatgacaccatctgacacagggaaagggaaggcatgcaggactctgactctaatgccag ctaggacgtgagatggtgctaccatctcaagtgaagaagagggaagggaaggcatgcagacctgacctctaatgccag ctaggacgtgagatggtgctaccacttgcaagtgtaattattgatggtctctacacattcaccgtggccactgcaggatgtattggta caggcagctacggaaaatacaaagcatgatgaggaggactattactgtgcttatactgagtgcctttgattttagaatca acagtgtgcaacagagacatcagcagtcctacagagtgccatagactttaactgaagtgttttacaaagttccaaatctg taaacagaatcttttggaacataaaatgaccacaatagagagcagtttttgcatgctgtaaatttgccaagatgcccaca cactgaaactacctccactgctgccgcaaactccctacctgtgtagcatagggcaagcttcttcttgctgcacctctca tcattccacatgcccacatettttctctcttgatgtagatctccacgcagtcctcatcttttttgcctattgttgggttc acctggagcccagttcttggcttcttctgtcagaggtttctgggttcctacccagacccacacttgttgacttttctga aggtgtgtgtacctttgctgacaataagcactggcctcatcataagtcatagcttccgtggaggtgttgtaagaccaggc tccactcttttaatgagaagcactagtgggagaaaaagaaaagaaatggtagagtttggtactgttgtggtttaactct gacaactgtgctttttattgtcttatttttggcaatgtttgtgacatggcccagacttttctcatcttttcaaaagtaag cacaacattatagtatacccattttgtagtagaataataatcagaataactaagctttattgagcacttagtatgcacca agaagcactgtatgaggtactttccatgaaccatgctattgaatcctcacaatgcatctgggaaataggtcattatgatc

cacactttacacttaaggaaagggagacaccaagaggtaaagtaaatgaccccaagcccagggaagaacacattgcaggt tgcgagaatgagaaatcttggtctaatggcactgacttacccaaagtgagagctgagagaaactgtgaagcaatcatgac ttcaagagttctttcacccaaaggtttaggcttgaaatactttcctggggagataaaacacaaaatgaattaaagaagg aaatcgtgggtagctagttacattattctaccatgatgtttaaggcagcatcctaagattttgggcaaaggacactagtg caataatctttatttcagagtttaatcaaataaataaacaaattttaagactttcattatttaggtcaaagagaaaagac aggttttagctacaatacaataagagcttgtacagatgtggtttttattagaaggccttttgcatatctgtgtttcatgg cccgaggctgcccttataaagcgttctgcacttaccgttttgggaagcagttgttcaaacacaggatctctcaggtgggt atcactgctgcctctgtctcaggtcagtataggagttttgatgtgaagtcagccaagaacagctgaacactacttcggct gaggcccttttataggaggattgcttcctgtgaataataggaggatattgtccacatccagtaaagaggaaatccccaa tggcatccaaaaactttcccgggaatatccacgatgcttaaaattacaatgatgtcagaaactctgtctcttgaagctac ttcacctttgtccatgcctttatatcgtatatgcaattttattaatatgacaaaaatgcatgatttttataatataac ataaagtctatgtctttaaaaagttgtaaaactttgcttgttagtagtgtctctcatgtagttgtgggtagtaattagaat accaatcactactcatttttttcttcctttttcacctgccaattcaacatatttaacatgcactgtctcacagaggaatga ctcacaaggtagatattaatcttcagattttgcacggcagttatgcctaaattaaaatattatctaaaaataatatctaa cactcaaatggttaaaataatgccttattttaaaaaaaagaaaaatgggaaatagatatttacatctgggaaagtttcatg gtttgttcagtgaaaaaaataaaaaggaggccaggcacagtggctcacgcctgtaatcccaccactttgggaaggccgagg caggeggateacetgaggeegggagttcaagaceagcetgaceaacatggagaaacgceatetetactaaaaatacaaaa 20 ttagctgggcatggtggcgcatgcctgtaatcccagctactcgggaggctgaggcaggagaatcgcttgaacccgggaag tttgaaatgttaatgtgcaaagaataaaaattcttccacaatgttaacagtgactaactctggatggcaggatttgggat aatttttatatccttcattattattttcaggattttaaagttttttcaatttcccttttttcacctttatagtaacaa gaatacagtttaaagaaacttgtctctaggccaggcatgatggctcatgcctgtaatcccagcacttttgggaggctgagg tgggtggatcacctgaggtcaggagttccagaccagcgtggccaatatggtgaaaccctgtctctactaaaaatacaaaa attagceggggtgtagtggcgcatgcctgtaatcccagctactggggagcctgatgcaagagaatcgcttgaacccagga tetteattitgacatttettetgggtgattgtatacatteeccatetetgeatettaccetatetaaatgatggtaacag taaatggggatcattttaatttccatattctgtaggttttcagagctcaagtcaagctaatattctatatctacagcctt tcaaaataggaggtctatctaaaaatgtactgtcagcagacctgaacgagtagtggtaaaagcctcgtttttctctttac 35 ccaccttaccactctcttacatgatccagatactgacattattccaattctttatcccactttacttagctcaatgtggt atacattatctgtatgtattttatttttaataaagtatgaatacataatctgctatttttaaaaagcatggtcaaatgta tagagtagccaaatcttaaaaaacaatttatcttcgatatcaataaagtacctaataattatattgctaatagaaattag tcgttaacatccctagataactaacttattattgcgaatttttcataactaagtttatagtttatctcttccccttttt cccaattataatctctaacatttattgagtgcttactatgtgccaggccatattctgagcattttgtatgttcacctatt gattattcaatccgtacaacagcctatgaaataggtactcctattatccccattttacagatgaggaaattgagaatctg gggattttatctcattcaaaagcacagagctaagggttgaaaccaggcagttgatatccagagcccactcccttacctgc tactccaaaccatgatttcttttgttatgccccgagattccttgttctacccaagtttcctgtactcttccttgccct $\tt cttcttcctgagacatccttgaccatcacagctctccactgagataactgtgtcctgggttctgagacatgggggctggagatgagagatgagatgagatgagatgagagatgagatgagagatgagagatgagatgagagatgagagatgagagatgagatgagagatgagagatgagagatgagatgagagatgagagatgagagagagatgagagatgagagagagatgagagatgagagagagagagagagagagaga$ agggaccccagggacagtgagcagtagggagaggatgcagtgagaacagaccctggatccccggtgcataggcagggaga aagtggacaaaggaaaaaacaagcaaggcaggtggagccatgcctaggtaaagttgatccctaagccacagttcccagaa gttcctgattcaaaagcaaattttctctaaggtcaaagggcaaactgattattctaaattctaaactgattattctaaa 50 tgagacctcaaattcactatgccaaagggaaagttaagcttgggaaatqaqtcatgcaaaaactgccttccttttqttcc caaatacctgtaatttcacatgcttactttatcttatataaaatgtagatgtactgagcatgagatccatgcataatttc 55 cctctagtcccttctttttacatgtaaagtgtagactcactgagtgtacagagccttgccacaatgtaaacacttgtct tctttggaaaaagcgcaggtcacagatcctacagtgatttgtgtttcttttacctgggacaaaataaacctctaatctgt gttttaaccagaggtatgttattcaaaatccattcatccttacaattacctgcattctcccacagtattttctgtgtccc tgcccccgaggttgtcactgcaaatcaggtacatggatactgggagctgatgggctcccctctggctacctgggctgctg aaggggccatagacagacccagctttcctctcgtggagaggccctgggccagcgctgcgtgggagtgggattacaaccag actatagettetteacetgettttteetateaggattteataagaggeaattgettgttttttgagggggggaaate agggggagttgaagaggaaattgggtaagatttgaatagttgggcatgttgaatattatgaatatcatctccttctcaa ataatccaaaatatacccccaagaaacaggctgattagaggtgcttcaaggctccactgaatctcccaagctctgaagat gtagctagctgttaccggattgccggttttcaagcctcgcctcacatggaccctcttggcagtttctcgcatgggggaag catcogctacatagatgggaatgaaaagaggaaagaagatggtgcaaactcaggcacaccccggtgtctgccaccagtgctatttaatctctgaggtgtcacccttcctggctttattgtcttcctggaagtctcttgtcctctccacacccttt aatcaggcatcaaagactttaaccagttttgctgtgtgcccaggcccactcattctcacttttatggcaaagggagtggg agacagagagatagccagaaagaagagattggggaccccaagacaaatgttagaattttaaccaaggccaccctgtggga agacagagagattattgggtttagtggaaagcaggactggccacaaccacctgggcaaaagcatctatcgaggaagtgaagttat atttggtgaatgtgaccgggaagcaggggcagtggtgtcctcctgccttcctgaggcactctgttcccttacctctgcga aggcttattttacccctgagtgcttagttttgaaagccttagttccctctcccataaaaaagctctactctgctaaca 70 tctaagttacctttgcagagtcttaggtagagggggaaatcccaataaagattccaccctatctgcaaaatacaaacat 75 cctaaatatatttgatgaaaatgtgtctggttctaagtttatttcccagaaagccatgtttactcacttggaatttatag acatcttataatatctgagtcgagtaggagctccgggctctacctcactcttttctcccacacccagggggaagtgtagg gttctcagactttagaataaagaggaatcacctggacaactcacctaaaatgcacatcttcaggtctcatactcagaggc tetgacteaacaggtetgggtggcccaagaatttgggetttaaatgagtateteagatgattetaatacagaatgtgt aagatgaccagatcctatcacacttagatgtattggcctagggccacctaacttggagaaaatgttagtaagaccccgtg gttggtgctcagctataggtaccagaattttgatcaaaatttactatcattgtgacacttctcttcggaactggaaggcc agaaccccacttgtaaagtgctgggaaaatacaaggaaaatttagggtgagtagcattttgaattcttacacatggaaag taaatgtataagaattettaccaataaaaaaaaagcaagagagaatagetgetaaagaattaacacaaatatqtatatat

acttgaatttttcatgtgctttttgcttcctatttggcagcatcttatcttgaagtttccgctttctgcttggggaccta attatgtaagtetttgatatttggaaatgattggattaaccggattaacaatgaatatttaaatacagtgatttggcaagg agcagtggctcatgcctgtaatcccagcatttggggaggctgaggcgggtggatcacctaaggccgggagttccagacca gcctggccaacatggtgaaaccccatctctactaaaaatacaaaattagccaggcgtggtgcaagactgtaatccca gcaactcgggaggctgaggcaggagaattgcttgaacccgggaggcagaggttgcagtgagccaagatcacgccattgca 15 tataccaagagtgctttactaccgtctctgctagctgtgacataatatgacaaaaggtataaatatgggaaaaggcacta atttatatcaaagcgttcttcgtttttccttgctgtgaagtttttagctaataattcataagaatataccatatttagag tgtttactatgcatgggcctggcacttcacatacattgcttcttacaaattttacaaagtgaaaggtagatattaatctc attttatggaggacaagatagagatctggagaggttacataacttgccagtgttttttcagttaataaatggtagggtgg agattcaatctgtgttactctaaagtccgtgtcctttttattggctccatgcctactcagatttaaatctcagcagggaa gtaaaccttagtttttacatgagaaaatgttacagcagccttctcggcttcctttacccccatcccagtttcacgagctt agtgccttagatcgggttcctttagaagcagacctcgaaataaggatgtgggtgccagtcatttattgaaaagatgatcc caagaaagcctagtaggagagtgaggaagtgagatggggaaaggaagaaactccacaagaagtgtgttaataagcaggtt gggcaagaagtctgcctagggtatatatccgccaactcagtcactggctgagaggtgatcctgggagggcatggttaatt cctctgcactttcaagtggattcctgtggtcagaaaagccctctacaatgaattccagatgcttgtatttaaatctgac atgatergaatgergrgtraggacagggrgggegtratragtertertyleatracegraacagatractacaaacetgar
ggetgcaaacaacatatttattatgtcatagtttgtgtgggtcagaaggtacaggttagctcactagtttetetgete
taggtttcacattgccaatatcaaggtgtcatcagttgggetettettgggaggettggggatgaatccactttcaage
tcattcagattgttggcagaatccagttcettgtggttgcaggaccaaggtccetgttgcettgetggtgtgtgcaga
agtcattcttagcttctagagactacctgtactctctgtgcttccacttcacetttcaactggctagt
cgagtccctctcttcaaatgtctccaactgtgccttcacctcatttctcacettcacctgctgctcactgctg
taagggctcatgggattacattggatttattcaatccaggataatctccatattttaaggctagctgactagtgatcta
attccatctacaaagtcccttccaatagtactgtattagtccatttcatgctactgataaagacatacccaagactggg caattcacaaaagaaagagtttaattagatttacagttccacatggctggggaagcctcacaatcatggcagaagtcaa gqaaqagcaagtcatgtcttacatagatgqcagcaggcaaagagagagcttgtgcagggaactcctctttttaaaacc atcagateteataataettatteactateacaagaacageatgggaaagtettgeececatgatteaattaeteecacea ggtccctcccacaacatgcaggaattcaagatgagatttgtgtggggacacagccatatcaagtacctagattca tgtttgattaaacaaccagggagcagaaatcttcaggagtgggggcatctttagaattctgcccaccaaggctgggcgc gccatggtgaaaccccatttctactaaaaatacaaaaattagccaggtatggtggtgggcacctgtagtcccagctactc aggaggetgaggtaggagaateaettgaaeeeaggaageggaggttgeagtgageeaagattgegeegetgeaetceage ctgggagacagagcaagactgtctcaaaaaaaaagaattctgcccatcatagtaggctgtcctacagagacataacccag agttatcattaattggccacttcacattagacacagcacttaggacttaagaataccatgtcatttgatcatcataatat ggtcaggaattaagtattgctatccaaattttacaaagaaggcactgagggttagagtttaaataacttgcttaagatgt catagcctgtaagtgacaaaactaggactcaaatacaggtccatctgactccaaagtctatgttcttggctaccacactg tgatgtttgetetaatecagttttactattaattagttgetggtgeccaagtttttactgagaaatggggataattttgg aagtcataatgatgccttcttctcatagggtattttatttgttgttgtatctccaggccccaacacagcctggcttttag taaatgatcaaaaatacctgttgaatgaataaatggagtcacctgaaacatgttaaacatttgttcatgtgtcctaatcg 55 tggatttcaggatagtaagcatcctaaaaggaaagcatgcacactgttcttgctacattaatttctcacaatataaaaaa agaaaagcatetgaaaaaagctgccagccgctgtgtgtctcctaatatcaaactgagcacagatatggagaagctaagggag agggatgatgggccatgcctctaacctcatcatggcaaaagtcctgggggtcagacccgaggagagcaggaagtgtcttt gtacagtggtgctatcteggctcactgcaatctctgcctcctggattcaagtgattctcctgcctcagcctcccgagtagctgggacaacaggtgtgtgccattacacctggctaatttttgtatttttagcagagatgcggtttcaccatgttggccag gctgatctcgaactcctgacctcaggtgttctgcccgcctctgcctcccaatgtgctgggattacaggcatgagccactgcactaccaagcactctctactgatagcatttacaaacccttcttagaatatttaaaaattctaagagaagagtaaattga 65 70 cagcaaggootcatetetgettetaatagataggaagaaaggaagaggaacaataetttttaagaageteagettta tegeettateteatagaaagatgeeteeagtetgtetggetaaaggtaattggeatgggaaagtetttatetgtgattet aacaagtggaatgtttcccttcattaagagagccttgtctggcttggggaaatgaaacactttctccgatatgagtgggc tgtaacccctgctactacatactcagaagaaataaggcggttgtggagcagtcaggaatgagtcacttgcctccctggaa 75 tattcagaaaactgaatcaaaagtacattcttctgggttttcttagtctaatagactaagggtctctactttgttaaatt attaaagagcctgggatatatagttaatatatagcagcatgtaaagatcctgttagaaatgctaattttacagttaacca tttggagatgateegeeaaagetgetagtgtagaggeaactgagaatttgeetgteetteagaatatgaataaataactg tcaatgatgtctcaagcctagaaaaacctatccatctggatggggaaatttctaggctagtattgagaagcccattt

ctggagaggatgaattgaattctagaagatgaagtagggaagacgctttaccttcttgtgaaatggattcaaagattcaaagaccttcgggaatctccaattgtataaatggcaccatagctgtatgttccatggaacactacttcccagagatgcccag tgaaaaaagaatgccacagtcaaataagtttggaaacactccattatgtggccacctccttgaagactctaatgcacattagcatgttaaacagtcttgagaagtcctgcagagcagaaattgcttcacatctgctaagccggcagtttcccaatatact ttcttcattagggcatactttttaatagaaaatattgagaataatctaaatataaatgcacagcatttaccttttctgca taaactatatacaggcataccttggagatactatgggtttggttcccacaatatctccaaaaccacattcggttttatgaccactgccataaaaccagccacatgaattttttggtttcccaatgtatatcaaagttacatttttactataccatagtct attatatatacaatagcattatatctaaaaaacaacgtaaacaccttaatttaaggctgtggctggtttgattttctacc 10 Cagaccactaaaactttcttcatatcagcaataaggctgtttcactttcttactatttttttgtgatagcacttttcctt ccttcaagaatttttccttttctattcacaatttgtttgatacaagaggactagattttagcttatctcagtttaaggtgt ttacattgttagctaaaaatgctaatgatcatctgagacttcagcaagtcataatcttttgctggtggaaggtcttgcct cagtgttgatgtctgctgactgggtggctttggcaatttcttaaagtaagacaacaatcaagtttgacatatcaattgac ccttcctgtcataaatgatttttttttttttctctgtagcctgcaatgctctttgatagcattttacccacagtagaattttc aaaattggagtcaatcctttcaaactctggtgctgttttatcaactaagtttatggagtattagaaatcccttgttgtca agetecteatecactaaagttttateetgagattgeaacaatteagttaeatetteaggetetaettetaattetagtte tettgetgtttetateteatetgtgettaettteteegetgaagtettgaacccettaaagteacteatgagggttggaa tcaacttettacaaactcctgttgatgttgatattttgacctgetcccatgattcatgggtattcttaatggcatctaga ttataaaatgtatttcttttttttgtgggggcatagcgtctcaccctgtcacccaacctggaatgcagtggcacagtcata actcactgaagactcaaactcctgggctcaagtgattcttccaccttggcctcccaaaacactggattacaagcttgagc cactgtgtctagcccaaaatgtatatcataactaatgaggcttgaaagtcaaagtgactccttgatccatgggctacaga ${\tt atggacgctgggttaccagacatgaaaacaatactcatctcctcatacatctccttcagagctcctgggtgagcaggccc}$ 30 agagtctgcctgtcctttcaagctttgaagccaggcatcattctcttctctagctatgaaaatcttagatagcatcttct cccaataggaagccattttttatgccctaaaaatctgtcgtttggtgtagccaccttcatcattgatcttacctagatcc gctggataacttaccacagtgtctacatcattacttctgcttcaccttgcacttttatgttatggggatggctcctttcc gaagaatgttgggccttggattacactttggtttaagggaatgctgtggcttggtttgattttctatccagaacactaaaa ctttcttcatatcagcaataagactgtttcactttcttactattttttgtgatagcacttttcctttccttcaagaattt ttcctttctattcacaatttgaccgtttgatatgagaggcctagattttagccaatctcagtttacaccatgcctttttc $\verb|cctggcttcaaagcttgaaaggacaggccagactctcttattaggggctaacacagctggcgacttttaagttgaagccaa|\\$ atcttataatctttggtgctgacttagacactcattttcctttttgtacgtgaccatgtaaaagttcaagtcaagaaaaa cttgttttgacatttgttttgctgagtgatgggtccctaaaagaaatttggctttgcttttgaaaagttcagcatgatat tgtgtgaatttttcatggctaatgatttttagaacagttgtgatgtgtttaaggtgttttaagaatatgaagcattcagtg gtttaagttggttgttataaaatgaaagaatatgaaggaaagccttcttgtcttagaacacactgattcacaaataagca 55 gcttctctcaaaatgttgtaattacaaaaattccaaggcaaatataataaactccttgtcggtgctatgtctagaaactt ataaagactatataaggacaaactgtttaaaagggagggtatccttgaaagcttgacacttgactcttttgacgaggctg agggaaaacactcagtttcatagattgctggtacggatgtaaaatagtgacatccctatagagaggaatttggcaatatc tagcaaaagtgcttatgcatttattctttgacctagtaatcccgcttctaggattagtggtgaagatacacctcaacaat aaaaatatatatacattaggttattaggttatggtttaatttttaatagcaaaatatttaaaacaacctacatgaacaaat aggagacttactgaataaactatggtatatctgtacaataaagtgcaattcacttatgttgttaatttgttccaaaaatc cagagccaaagagtatttgttatgctctctttagtataagaaaggggaaataagatatgtgtgcatctgtttatttttgt attaatcaacagaaataacaaaaaaagaagaaatcacaagctttaaaatttaatacaaacagaaataattgaatctaacagtatatcaaagtgataacgtaaactcagaagaaaaaaacataatccaacataccagtggaacacaatattctaactgtatacattcagtggttatagtctaaggacaagaaaaaattgcaaaaatatcttgaactttagcttgtaggatttttattggtag 70 agacaggagggcacccctttctcagaacatggtttccaaatgccattctccattaaaaggaacaaggtcttcttggagaa aagactgattctaggtctggattaggtaaagtacaacgttagtctggaatttcttgctgaatcagaagtaagaaagtgct caaaaacatgggaacatgtcacaaacacacgtgaggcaacttgaatcctcactggccatatttaggacaatcgagcatca aaaaaaaaaaaatgttgagaataatggattctaacacttaaaaacaaaaaataatccatagcccacagaaggggaagaga 75 gggggagctcttatttacagatgaatatcaaatagcaaagacagaagaaatgacagaattagagaaacatcattttgcaa aacaccactgtaataatcaattcaggcaagtattattaatggatgtattactattgcgtaaaaccagttggggaacagga tattcatacagtctgaaggtgtcaccctaaacataacttattacaagtggaaaatggtgcctttacaatgaagaaatcta gcagaaaccatcttaatctagtgatcaaacttagtatcaccaataatggatcatactgagtcatgtgtctcctaatatga tgcaccaggaaggatgcaacgtcatgaacgttgtattettttgtattcaacagaccacccagggtaaaggcagetttete acttactaatcagaattgttggttttaattcattttggattttaagatttcttactttcttgtcagctcagaaatttatt taagatgatttttatctttattcaatactttagcttggagaaccattcagagtttctaactcattgtattgccaaaaat

ctaaggaaataattgaatagtaacaaaacactattaacacaaagcatagcaatttgatttgggcaaccaaacactggaaa acagttatgagagtaaatttgaaaacctgaacacaaaacttacatatactccaattgtaacttataaaaaatacgtgcat ataaggataaaacagtacaaacaaaaaaatagttgcgttagattggtagaattatggctccttttgctgtcttaattttt tccttttacattttqatacattattttaattttaattttaaattcaaaattcaaaaqaatttqccactcatctttgccacttcaag qaaaaaaqaaatqtqttcqattattctgttcttagtatagttttggcaatttcctcacgtgtaaaaagagaatactatta ataatttcaqtatctataaqacaatataaaattaaaqaatctaqcccaqtaactqqtacatggaacgtaattaataaatc attatggacttttttcccacacccaagtagggaggaatcagtggtcccctagaggcccagtgtagaggtggcacca atccctaqqqaqaaqatcttqqtqatqataattcctqaqcaqacaqttaqctqaqaattcaaqaqcaqaaaqtaaqaa agaaacaacttettgetaacacetttecaeccaegtttecetgttetgtaetetgettaecettteatggatggagg ttagaatgtagacctgaatttaaatccccgttctgtcagttataatgtgaccctagacaaaacacattctctgaacctca gagaacattetteatttgtagaatgggaagattaatetatattecaettggatggcaagtettttataaactttataace taaacatgtgtgagttgctagtatcattatgttggtaaagttattctgagatatgataacagaactgttttgtctaactc cactagcatggttcaggtttagagagtgtggaattaaaaggctttatcctcaaatatgacttaaatccgatttttccat ccactttcctccacaaacaaatcctcaggaaatgacaaactttacatggttaaacatcagttttgtttagtctttgacat ccacatggttaaatcatacatttgaaaactgcttatatttgttgttgttatgtctaaattgaaaagacttattgaggaat agaagactacacatttttcagcaaacactgcacgttttgcagaatttccccaggcaccagtctccaggaatttattggct 20 actaacaatactaagatatggatgaatgaggaaatcaaaatggagatcttgcaagttttgtgagaatgggtgaatggtcc aaatgaagagataagttgtgaaatattagtacaagtaaaaattatttacaatgaaagacattttgtcaatagctatgaga attttaccattgacccagaaattccatttctttcttcagaaatacccacgtaggtatacatataaaaagttattcattac agtategttttteataggaaaaagttttaaaaateagaagetatetaaaetatggtatatetaggteatagaaateaaat gactaaaaatgttaatataagcatatgtttttaaattaacttggcttgggtcttcagcaaaattggcttcttaacattgc 25 actocagagttagacttacccactcagtcacttatcatgcaggagcagactcctaataccacatatcatagagcagagta accatgcccagctaattttgtagttcaagtgatttctggttcaagttgtggtctaggttgggattgggattgggatcaaggttctaaagtgtactcttaacctctaacct caggtgatccacccgtcttggcctcccaaagtgctgcgattacaggtgtgagccaccgcgcccagcccacaatggccttt tgtttacatctctagtgcagcactcatttcatgttctttcaagaagaatacatatttcatctttttattttatcacagcaa ttagcacagtgcctggcataaggaaaatgatcattaaaagctgggtgaaaaacctaataaagctactgaggataggaact qcaqaccaqcatqqaaaqaaaactatqaqccaqatattqacatcatcctqaaaqqcaqaagatttaqtataqqcaagaag tatgcttttggaatatagaaaatctggattatgataagaaaagaatcatatttgtcttatcttacctactcacttctcag ttccacatgtttctgaggctgtttgtccttactttctgttttctgttttatccactctttctgttcttttagattggatcatt cctattgagctgacatcaagttaactgaccttttattttgtccaaactgctgttaaatgcatccagtgaatttttaactt tatatagtatatettttagteetagaattteeaeatgagttttttaagttteeatttetetgetgagateteetatttgt tcattcattatgaccatatttttctctacattattgagcataattataacagctcttctaaaattcttgtctgcacattc taacacctgaattattctggggtcagtctctgttacattgccttattacaaaaacagtataagtcacattgccttgtttc attgacttgtttttttccatcaggcaggtaacttgactggactcaaactccaaactctaggtcctctgtaatgggcaactg cagtaatctttgtttagttctttaagacttattggccaggcacgggggctcatgcctgcaatcccagcactgtgggaggc caaggtgggaggatcacctgaggtcaggagttcgagaccagcctggcccacatggtgaaacctgcctctactaaaaata caaaaattagccgggtgtggtggtggcgctgtagtccagctactcagaaggctaaggcagaagaatcacttgaacctggaaggcagaaggttgcagtgagccgagattgtgccactatactccagcctgggtgacaaaagcgagactccctctcaaaa aaaaatttattggcactgcttggcatctgctatgaatacatgaagttcatgggtcagctatagatctgggcacgttatac acagaatttgggtctccctttctctggatttctccttttctggatttctttttctcattttccagcagctgtggttgccct aaacteggteetetgtttetttacggcagtaagatttgggaactttatggttttacetgcctetcagacaaaataaaaaa taattttcatettgatgetacteetttettecagatgtagaactettetaattteeagttgttttattgetetcag agtetaaagattateattgttttetgtgggagagttggtetgataaaaactactececcaaaactggaagetggaagett qtaattatqaataqactttgaqtaqtattcttctttggaaaaggattttaactactccctatgtacttctttatttcctg tttttctcatccgtaatcttttattttcatacttcctaagtcagacaattttcctacttgaagattcagtgactgctat caaatgaccccatattactaaatacaatatccccaactgcatttataaaaagaaaatttactgtttattagtaaacaat 55 gttgtagaatagtaaaatattgctgggctttggagccagataatcaaggttagaatcccagattctaacttactagctgg tgtattagtcctttctcatgctgctaataaagacataccccagactgggagactgggtaatttatgaagaaaagaggttt aattgactcacagttcagcatggctggggaggccttaggaaacttacagtcatggtggcagcaaggagaagttccaagca ccctcacgtttaattaccttccaccagttccccccatgacacatggggattatgaaagctataattcaagatgagattt 60 gggtggagaaatagccaaaccatataattccaccctggcccctctcaaatctcatgtcctcacatttcaaaactcaatc atgccctcccaactgtcccccaaggtcttaactcattccagcattaagtcaaaaatccaagttcaaagtctcatctgaga gttgggtaaatacactgattccaaatgggagaaattgccaaaacaaaagagttacagaccccatgcaagtccaaaaccca atagggcagtcattaacattaaagttccaaaatgatctcctttgacttcatgtctcacatccaggtcacactgatgcaag 65 aggtgggcttccaatggccttgggcagctctgcccctgtggctttgcagggtatagcctgcttcctgttttctcac aggotgacattgagtgtctgtggcttttccatgagtatggtgcaagctgttggtggatttaccattctggggtctgggcc aggtgcagtggctcatgcctgtaatcccagcactttgggaggctgaggtgggggatcacaaggtcaggagatcgagacca cccagatacttgggaggctgaggcaggagaatggcgtgaacccaggaggtggagcttgcagcgagctgagattgtgccac 70 gcctttacagcaccaccaggcagtgcaccactaggggactctgtgtgggggctctgaccccacatttcccttctgcacgc cctagtagaggttctccatgagggttctaccccagtggggactctgtgtgggggctctgaccccacaggctattcccttctgcaccg gaaatctaagccgcggaggttccaaacttcaattcttgactcctgtgcacccacaggctcaataccacatgtaagccac caatgcttggtcagggcttgaaccctctgaagcaatggcctgagctgtacgttgacaccttttagcctagacatctagga cacagggcaccatgacccgaagcttcataaagtgggagggccttgggactagctgaggaaaccatttttccatcctaggc ctccaggcctgtgatgggaaggcagccatgaaggtgcctgacatgccctggagacgttttccccattgtcttggtaact aacattcagctccgtgtgcagcaccaacttacttatgcaaatttctgtcactggtttgaatttctccccagaaaacagga tttttcttttctattgcatcatcatgctgcaaattttcaaacttttatgctatgcttcctgttgaagactttqcggctta gaaatttcttcccccagatacccaaaattatctctctccaagttcaaagttccacagatatctaggggacaaaatgttgcc 80 agtetetttgeatageaagagtgaeetttaeteeagtteeeaactagtteteateteeatatgagaeeateteagettg gacttagttgtccatgttactatcaacattttggtcaaagccattcaacaagtctctatgaagtttcaaacttccccatg

ggtatctttacagcagtggcactccccatggtactaatttactgtattagtctgttctcatgctgctaataaagacttac tcgagactgggtaatttataaagaacagaggttcaactggctcacagttcagcatggctgggaggcctcaggaaacttac aaacatggtggcagcaaagagaagttccaagcaaagagggaaaagccccttataaaaccatcagatcttgtgagaattca ttatgggaactacaattcaagatgagatttgggtggggacacagccataccatgccagctagagagccttaagaaagtca cctaatctccacaaataaaaggtttcctatttgttcaacaaaaataatgacaccccttttatgggatttctgtgaggaca aatgataactaacatagccttgcatagtgtctggcacaaaatagctactcaaaaaataatagaaacaacatttaaaaaaat gtagactttattttttagagttttatgtacaaagcaaaattgagcagaatgtacagagagtttccgtatagcactcccta ccccaagcacagatagcctccccagtatcagcatcccgcaccagagtggtacatttattataactgatgaatctatat atgtataatgacatgtattcaccattacagtatcataaagaatagtttcactgtcctaaaaaatctttgatcttcttccta ttcatcactccctccccattaatccctgacaactactgctaattttcctgtctccattgttttgtcttttcctgaatgtc atatagtttaaatatacagtatgtaggattttcaaactggtttatttcacttagtaatatgcatttgatgttcttccata tetttteaaagetteatagtteaatatttatagaattgaataatatteeattgtetggatgtaetacagtttatgtatte attcacctatcaaagaacaccttggttgcttccaagtttcaacaatcatgagtaaagctgctataaacatctatgtacat gtttttttgtgaattgaacattttcagcttttttagctccattcctaggagtgcaattgctggattgtatgataagggta tgtttagtgttgtaagaaactgccacgctcttcctaactggatgtactgttttgcattctcaccagcaatgaaagagttc ctgttgctccacatactcaccagcatttggtgtcgtcaatgttttgagcaatagcattttgatctaacttttcctaggta 20 agtotgtcactotgtcacccaggctggtgcagtgatgcaatottggctcactacaacctccatotttcaggttcaagtga ttctgccacctcagcctcccaagtacctgggattacaggtgcccgccaccaccacccagctatttttttgtatttttagta gagacgtagtttcaccatgttggccaggctggtctcattcctgaccttgagtgatccacctgccttggcctcccaaagtg ctgggattacaggcatgggtcatcacatgtggcctgaagcatgactgttgctttaatcatatgaaatactgctctgtatt gttatctatttgaaatgccacacctcctgagctaaattgcaagcttttatggagcacaaaccatatttatatattagc tagcactttcataccgttaatttttcattttgtgcccagcccctactctgtgaaaaatgaaatgaatcctgttatcattt acccaaagatgcccaaatgctgatccccagaacttgtgaatatgttacatttcatgtcaaaagggactttgctaatgtga agaaaacattttcccagctgggttagagagagatgagacagagtaaaaaggaaagagattcagggcatgaaaatgactctacccactgttgctggctttgaagatagaggaactaggccacaaaacaaggagtatgagtggccttaagaaataggaaaaag ccctcatctgacagccagctagaaagcagtcctctgaccacaagaaattggattctgccaaccactcaaatgagcaagga aatggattctcccctagaacctccagaaaggaacacagctctgtaatgccttgattttagccaggtgagacctgtttca ctggacaagcttcacagaggattcactggttccctagcaaaccagcatgtccagtcctgcagctccctttcttaggccc gcacttcaagtgaggaaacaagaggtaggagaccggcatctctttctcatatgtcccaggctgactcttgtgagttgttt cgacttecaaggactctgatgtcccacagcactagctaaacaagccagttggaaatgagcttaaatggggaatttcctg aatatattccctattgttaggaagccaggttggcttccttgcctacaattatgccaagcagtcacactatagagtcccta 50 gggacatgatattaagtgattcttttaacacaaacaacttaataatcatttatactaatagcaaaacggccaacggctga tattccacttgaagtagaattggctatccaactggaagagaagacaggaagacgtgatctccagggagccactaaaagga ttggcacctgcctctggattccccttttccttatattacctctcagcactggcaggcctttatttcaggatacagtttca agtcatgaaggtgacatacatgtagctagtgacataagtgtagctagtaaaaatagtgagtaatggccctgaaattctat tgaatgcccaaagtgctgaccaggaacaagcatgctctagcttatctcacaaggaacttgacaattttcttcaaaaaatcc tagtagctaagatttettagtaacaaagccactaaggcacaattatgattaacttgaccettaggtgacttttaaggactattetataaaatattacaactaatagtggatccaagccagcactctgctatataagattaattgacagtgtccacact atggtggctctcagtgtctggcttaggcagtaaacactttcgttaataaagacggaaaataaaaaggaataattggtgt ctaggggaaaataatgagctcaagttttaacactctgagttcccggatgtgagacatccaggcgcatttatccaagaggc agttggaagcaacgttccggagcttaggagagaggcatgaccaaaagctggtgggactgtgaaaaggtatggccattctg gaaaactgtttggcagtttcttagaaaattaaacatgtactaacaacccagcaattgtactcttgagcatttgtcccaga taaatgaaaaaaaaaaagcattttttttacacaaaaacatatacatgaaagttcatagaagtgttattcataaaaaac tggaaaaaactgagatgtctttattgagtgaatgcttaggcaaacggtggtctatccatacaatggaattatgcttagca catctcaaaatggtatatactgtactattttatttacttaacattttaaaaatagcaaaatcatagagatggagaacaga ttaatgggtactgtgttttgggatggggagtgagaaaagggtaaggtgtaaatataaaggggtagcacaaaagagccttg tggttgaaggattctatgtcttggttgtagtcgtgattgcaggaatctacatgtgataaaattgtatgggtctacatacg catacacacaagagcatataaaactggtgacatgtgaagaagctccgcacattgtgccaacatcagtatcctagtttcaa tatcagactacagttatacaaaacattgtcattgagggaaactgggtaaagggaacacaggacatttggcatatattttt gcaatttcctgtgaatccgtaattatttaaaaataacagatatactacatatcaaaaatttaatgtcataaagttgatga gtttacctagtggatagctttgttaatatctgctataagactactgaaaatgacagttatgcaagtataagctcagagaa ctttcctccccttcgtaaatgaaatgagcaaaagaaatgaaacaggaaaggcaagcagtactgaaaacagggaagggct cttccccatataactatatctgcgacttcaacagctattcatccagaaacacagcctcttgcgctaagaggaaactttgg atgatgtggcttggacctttaatcccagctacctacaaggctgaggtgagaggcttacttgagccaggagttcaaggcg gcaatgagctatgattgattgtgctatcgcactccaacctggagtactaagctaagactaagacacacctgagagcgg agaagaaacaaacaaatctgaccaataaccccactcccctcattttactggagtgagctgagactgctggcaaacatgg

tcgtagttcataactacaacaagcagataaacgaaggccatggtgagggatggaagacattgtgatatatcaaaggcagg tagcacaaaccccgcctccagccccacccaaaaaaatcactctgttctctccccattctttgataggcatacttgctg ttttctcacagccaaggtacagaggggacttagaggaactagaactctaatacactgctagcaggaatgtaaaatgaagc atctacttcagaaaaccattttatcagtttctagaaagttaaacatagacccaccatgcagcccagccactctactccta agtatttacacaagagaaatgaaaacgtgtccccacacagttgtatttaaaggtgatggttagccttgtgtgtcaacttg gctaggctataatacccagttactgaatcaaatagtaatctaggtgcatctgtgaaggtattttgtagatgtggttaaca atacaatgaatggttatagcagccttatttgtaatagccacaaactggaaacaacctaaatgtccttcaataagtgaata cataaacaaattgtgggtatatccacaatttttacgcagcagtaaaaaaggaataaatggttgaataaggaataaacacata ttgaagttctagaaaatgaggactaacctatagtaacaaaaagcagaaaaattttgcccactggtgatggaggggqcqca tatcttgtggcatggtttcataggtgcatacatatgtcaaaacatcaagttatacacttttaaaatgttcagtttactgt 20 atgetttgeetetetatgaetggetgetgteetteteateecaataeteetteeaaageeeettgettaaatgtaageet tctttcctcctttcaacacatcctgcattccgtgacaaaataagttttccttaaacagaatgtacagcatattatttgta caattaaaaatttttggccaggtgtgatgactcatgcctgtaatcccagcaatttgggaggccgagatgttgtggattacc tgaggtcaggagttcgagaccagcctggccaacatggtgaaaccctgtctctactaaaaatacaaaaattagctgagtgt 25 agtgtggcaggtacctgtaatcccagctactcaggaagctgaggcaggagaatcgcttgaacctgggaggtggaggttgc acctgattttgtggcactaattccattgcagtacttgtccgctcactggcctgtgcctctctgccactatttttggaata atgtcctctccatcttgtttactcaactatatccaacctctaaggctgtgctcctacaaagcctcccctggctacttc 30 ageccaeagagatatttaaetgetetgeagtteaggaeattettetgaetetttaaateaeatttaettatatatgatet aatgccaagttagaaaaatattattgattttatatagattatagatatgtttgaaattttatttggcaatctgcaagtag aaaaataattataatgtggtatatctgtgatagaagtattagtgcagagaccatggggaacataatccagcctggaagtt ttgagatggagteteactetgteteccageetagaetgtggtggtggatetetgeteactgcaacetetgteteeeggg ttcaagtgattctcctgcctcagcttcccaagtagctgggattacaggtacctgccacacatggatgataatatgatca tattttcttgttcttttcctcctcagttgtcttccctgaagaaaggaatgccttttatagatgacaaactcccattctcaagaacaaggatttttgaccaatttaatttaatcagatgtctggctttgacctagaaacacagtcacgaaacttggtgatt agagaccaattcccaaacatgagcatttcttaggaaacacagtaaagatctgagagacccaagagcagaagggcgagaaa 40 ccaaaagccatcagtttgcataggaaacaccttgtttagcctaatctttttattttattactctattagtcactacaac tattttctgattgctatggtgatagatggtttaaaacaagccttcattaagaattgtcacaccatggtctcagtcaaaaa caccaacatttttattggtattgacaattatgggaatatccaattccaagaagacaaggagacctctgaactttctaaat 45 acgtgcaaaagtacggaaatggtaaaaagtaatactacatagtcaaagccaagcagagttcagaagggatctggtggtga aaaatacggctagagaaagcagcaaggattggcttctaaaacctatgtagtatcttggaccttaccctaaatgtaatgag aagettetaaagaatettteatttatteatteattgaacaaatattttgaggetttetgtgaagaacateattetaagta gtaaagatacagcagtgaataggacacataaaatcctagatctcacagaattgacattccagagagggaaaggtagacaa 50 gctgcgacctgaaggataccgagaagctaggtgtgcaaagatgtggggacagaacttttggactgaatagcaaatacaaa tgcccttgggtgcaagctttgcctgttcaaggaccaaaaagaaggccagtgtgcctgcagcatactaagcacagaggaaa acactgttatatgctgagattggaattataagtagagccagataatatagtctcttataggtcataataaggcaaccaga ttttattccaagaggatttaaaaatcactggaggttttgcactagggtgagaggtgtgatttgtattttaaaaagataat tctggagaattaactataatgaggtaggagtaaactaagttaggggctatttcagtggctcagacaagagataatggtag cttagactaggatagtagtcgtagaaataaataaaagtggcactctactttgggggtagagtctataataggtttggttt atggatcatatatgagagtaaaaaaaagaaaataaattaataatggttcctaggtttgtacctgagcaactgaataaatg cccagtggagatttcaggtgagtggagcccattgaaaggtaagggacagggtcaggtgtggtaggtcaggcctgtgatcc caggactttggaaggccaaggcagacagatcagttgagctcaggagtttgagaccagcctgggcaacatgggaaaaaccct 60 gtctctacaaaatatgcaaaatattacctgggcatggtggcatatgactgtggtccaagccacttggggggctgagatgg gaggatcacttgagtacaggaggcggaggttgcagtgagccaagatctcgccactgcaaaccagcttaggtgacagagtg agaacctgtctcaataaataaataagaaacgtaagggaaaaggaaattaatctgatcattggcaaatgcatagtatttaa agccaggggagtagatgagatactcaaagtaggtgaagataaggaggcaatgaaggcctaggactctggtgtacatttag 65 atggttataagaggaatagaaactggcaaaataagtaacactgagcacccaatgaggtggagaggaaagccaggagatga agcatcatagaaggcaagagaagaagggtgtcaaagaggcgaggcagtcatcaacttctgggcagtcaaataataataagg acagaaaagtgaccattggatttggaaatatgatgagcactttgagtggagtgttgagacagaagaccaattagagtaga ttgaggagataacgagaaatgagaaaatgtaacctgcaagcacagacaattcttgagagacttttctgtgaaaggaaaca gacacagagtcttagcatgtcttgtctttctatgggaaatgtaaatagtttgagatcagggatagtattttattctgctt 70 tttgtacctctacattacctagcatagagctagctaatgtgcacttaagtatgttctcaattcttatcgcctgaatgact attggacatgttcctagtgaagcatttttggtgtttcactgttgatgttaatattctaggactttaatgtgattattggacat cagaaaacagaaaacttgaagctctattagtgtttcactggttgaagttaatactgtaaaattatttcccgttccagga cagaaaacagaaaacttgaagctctattagaagttcaagattctctggggttcttaggatttactgttcccaaaact ctgtcaagaacaagaaaatgacctgtatacttaactggtctaggcaacagtggaaagacaattctcaggaagatttgtt ttaagaagacactttccataggaatcaaaacaatagctttcagtgactaacatggtaagacacaggggtgttagctctttcc 75 aggaaataccctcaactgaaaatgagagatcatcatttgcaaatgagttcccttgcccaggcaactactggggaaaatgt Catgcaagcaaaattaatctttgaaatcctccttttccattttttgtgtcttccttttccataggcaccagaaatatcat ggtgcctggatctcatctctacagaaaaaaaaagtgatttgataaactgatttatattgtgtccaaatgtgattgtattt

 $\verb|tcaaagataacctaaggggagaatgctgtctggcccaacagcaggctctcgacttcatttcagacactgtggccaatggcaatggcccaatggcccaat$ tgggaaacaggtatgaacagtaggtttctgagtcccctggaattattccatttatgtagccacctccatgacaggaagcc tccctactcttacttcccagtttgttcattcatggcaccaggttgcagattaaaatttgctcagtgaccttttatctaat aatgtgttaccttctctctcttaaaaagtacaagggacaaatgctcatggtatacttttaggagattgtggctctctatta acagtattattcaacaaacatttattgagcatttatatgtgcatcatgctagggacctggaacctagtaagtgtagcaca cagaaccagttaactaactggttcaaggtcatgcaatttctaagatacagaaccaagagtcaaagacatgattttaaacc aaagctttttctgctactccacattgcttccctaggtgagatctgaggcattccgcgaaaagagaagggtcataaagcca 10 accatcttactggattctaatatttaatagtctaggtgttccatttctcaccaaattaatgtatacatttaatacaatgt caaacgaaatatcttaggaattgcttacaaattgtcagataattacaaagtttacctgggaaatataagcatatatgaag 15 gcataaaaagaccagaactatacctaattatgatgaagatttaaggtatgataaacatgacataattcaaatcagcagaa gccttcatcttacattacaataaattccagatgtattacatttaaatttttttaaaaaaagaaaccacaaaatacttgaa 20 tagagtgcaatggcatgatcatggctcactgcagccttgaactcctggggctcaagtgatcctcccagctcagcccccag gtagcaggaactacaggcatgcgacaccccatccaacttattttttatttttttgtagagacaggggtcttgctttgtttc ccaggettatetegaaettetgeetteaageaeeteageeteeeaaagagetgggetgatgggaeattttttaaeatagt gttcggcatgtaattaatatagatcagaacactttaaaaatatttataggccaggcacggtggctcatgcctataatccc agcactttgggaggccaaggcgggtggatcacctgaagtcaggagtttgagaccatcctgaccaacatggtgaaaccctg 30 tctctactaaaaatacaaaaactagccaggcatgttggcgtatgctggtaatcctggctactcgggaggctgaggcagga gaattgcttgaacccaggaggtggaggttgcagtgagctgacattgtgccactgtactccagcctgggcaacaagagcaa gtccaaaatatagcctggcctaacaacattctgttaggatacgcaagcaccgtgaggagatcagctataaagtatcagtg tttcacaccactgctcctttgctaataaccttcaatggcttttaaagaagtaaaaaacaaaggcaaaattccttagtcag cccttaagactctctgttacttagctcaaactacccttttcaacaacactgccctaaccaggatgagttttttgccccc tggagtacattcagcctttccttatcaaaccttcctttaaataagtatcttctccaggaccacttcactttcttccccaa ttagcattttctatatctccaggcctacctctataaagcctgtcctaaccactcaaaccctagctttttctctgaactg ctagaaatatttttctctcattggccatttaggtaaaaaggtttttactgtttattacctactcaataaaaattttcttt ttttgagacaaggtettaetetgtegeetagaatggggggaagtggtgtgateacaaeteaetgaagettetaeeteee geteaaeagteeteeeaeteageetagtgagtagetgtgactacaggeatgtgeeaeeataeeeeaettetteattt tttattttttgtgagatggaateteaetagttaeeeaggetggtetgetgateteaattgateeteeaetgtggeete ecaaaatgetgggattaeaggeatgageeaeaatatetggeeeeagtaagettttaaggeeattaaeatgaggaaeagtg ttotttacactattttatcagotagggotttgcatggagtaggagttagtaatgtattuggottgatgggttaatcaattgtg gaaaatattcagagocaccaaaaacagatattagtotattotcatcaacaatcaaaattgagtaaacagocattttcta caagttagcaaactgcaaaagataggaagcactaatgagtggaaatttgagtagaagcatttcttatgaaggctgtcttg caaggatcctaccaagtgttaccgtcaagtgtctgttggcagctcaaggccccagcgttgttcccttgcactagggaaaa gacatattccaggtacaagtactcccactttgatgctacagaggagttgctgaactttgtgtcattaatctctcttcgtt agatcccaaccctgtttaaatcccactatctgcctactctgggtcttcaccaatttactagatcatagttggagaaaatc tacaaageettgeteetttagatttaaacaggteteegtttaaatttagaattgetaactteaagegggeettatgeg acagtatgcctgtcagtcatactacatttcctcaattccattcatgtgactgctccatacccttccetctcttcatac 55 tactattatctcttcccccctccttattttaactgatgatcttgtttcctatttctctgagaaaatagaagccatcaa ${\tt aagagagtttccacaaactcctactgccttatctagccctgtaccatatactttgcatttcctctcattaccatggatgt}$ actgcctatctgtgcttctatctaaggctaacccttccagttttgaatattatcagctcttaccaactcaaggcc attgctctagcaattctctctctattctctcattttcttccatcaagttttcctttcttcaattaacagagtagctccta ${\tt aagggaaaaaaaagtcttcttttcaatgctcatcatcactggccatcagagaaatgcaaatcaaaaccacaatgagata}$ aggtgggaattgaacaatgagaacacttggacacaggaaggggaacatcaccactggggcctgttgtgggatgaggga gtggggagggatagcattaggagatatacctaatgttaaatgatgagttaatgggtgcagcacaccaacatagcacatgt aaaacaactaaaaataaatcttctttttctqcaggatcagtccatcaccacacacacagqctqtqttttatgttgttccc 70 cagettaagagategtteteeagateeeactgeteetteeagttgteaceteagtteteeacttetttttgetgataaae agtggcatgateteggeteaetecaaceteegeeteaegggtteaagtgateeeeetgeettageeteetgaatagetgg 75 cagagtctcactctgttgcccaggctagactgcagtggcatgatctcagctcactgcaacctccacctcctgggttcaag agtagagaccaggtttcaccatgttggtcaggctggtcttgaactcctgacctcaaatgatctgcgcacctggacctcccaaaggcctgggattacagacttgagctactgcgccatttttggtttttagtaaagacggggtttcaccatgttgt ccaggetggtctcaaactcctgacctcaagtgatccgctcaggccctcaaagtgctgggattacaggagtgagcc ctttttacctcttttatatgctcttccagtctcaggctcctttggggatttgaaggtatgttgcattttgctattcaatg

aataatgacaagtaatgatcacttaagacattaagtggtcagttcctttactaggataaaaataattttcttcccaacat ggggcatattccatttccagtctgactgttctgtgtaatctttgtattccttggcagccccttttatatcagttcatcta ctgtgcaggaaattggacaaacatttgcactggtataaccaaatacagttgaactttttggcttgactcttagctgaactc accaaaaataatttctgtaagagactgagacgtctacgagtaggtttttcagaattagtaaacataaatcaaggatacac aggtagatttgaatttcagataaacaacaacaacttttttagtatgtctactgaaatatttgtatcttatctggcaattc tacctggtacagaactaatccattctcttgaaagatcttgactctgtaataagttctttggtgatggaagggaggtattt ctgtaattagagtcactgtcttcctcccagttttttatcctggcccagatctgcaatgaacacacgacagaatccagggg ggatgaagatgggtgctttgcaggaaaaaaaattaaaaacatctgaaaaagcttttgtactaaaagaatgtgatctaaa anagaaagcaggagaactttctgtctgcactttacatcagaacaaccttggcgtctagaagctgtgccctgtgggaagtg 10 gtggtgcttggtaagagatgccaggaccagtggtacccactgggagcactgccaatacccagcaaggagcatgggtgcac agtaaggcattgcactgtgattcagcataaaataacaataagggaacgtcacggagaaaaggccagacttcctttgttta gaatgtgggaaatgtcttctgaaaaatggtagtaaaaaagcatgcttggatggtccactccaggcaaaactgactaatcg ggggtcagggatacaacccctgcatcatatgtttgtttctgtttgtgccgacatgaggttcactgtgaccactgtggttta 15 actgatcagcttttcacaactcttatcctttcactaactttggagcaagatttgagaattggatggctatttgagggcta tttctgcgctttagttcaatgttttgttctttctttattagagaactatggtttttattatatatttacactttaagttct agggtacatgtgcacaacgtgcagatttgttacacaggtataaatgtgccatgtttggtttgctgcacccatcaactcgtc cttcctgtgtccaagtgttctgtttatgtgatagattacgtttattgatttgtgtatgttgaaccagccttgcatcacagtcacttgcttacaagaaaccaacacttcacagatggatcattatgtgtgataagtgaaatccaaggatttatgctcagag 20 agatggggtttcaccatcttggccagccttgtcttgaactcctgacctcatgaatcatccttctcagcctcccaaagtgc 25 aatgaaatataaaactaaagtgctaaactgtgatagactgttttacaagaatgccagttttcacaagtgtctatagaaca tgtaatttagataggtaagatgaaattttgataatatttgatggcaaatttaaacaggtatacaacaaaaataaaattct aagcccctcaaccaactgaatggactccttctctagccaaaggaataccaaagtaaacctgaaaaactagttttggcca ggattgggggtaggtgggggaagcccaacatgactcattattctctccccctttggaattcaggcacaactgaatgtca 30 gcattgacactaaaacacagatcttaagactgacaagccagactctttgtagcagagagccaggccctggaagaaatcaa gttattttatcccaaaaaatatttctttgatatattttcaaatggccctgcaaagctgtctctttgtggggaaaattgaca tgctgtacagaatttccttctctttccaagtttttactgatccaggagagatttaactaagaggctagcatgttttttt tttttttttttgaggcggagtcttgctctgttgcccaggctggagtgcagtggcgtgatctcagctcactgcaaccttcg cctcccgggttcaagcgattctcctgcctcagcttcccgagtagctgggattacagatccatgccactatgcccagctaa tttttgtatttttttgtagagacagggtttcaccatgttggccaggctagtattgaactcctgacctcgtgatccgcccac ctcggcctcccaaagtgctggcattacaggcgtgagccaccgtgcccagcacaagacatttaccgtctattctctctgaa attccaggtctttagataataacaactctttcaaccaattgccaatcagaaagtctttgaatccacctatgacttaaaag cccactccttcaagttatcccgcctttctggactgaaccaatgtacaccttatatgtgttgatggatatctgcctgtaa cttccattcccctaaaatgtataacatcaagctgtaacccatcaccttgggcacatgttttcaggaactcatgagacct tgttgcagaccttggtcactcatattttggctcacagtaaacttctttaaatattgtatagagtttggctttttcattga 40 tgatttgtagctttgctacttagattgctatccattatctagaagcatcaggatcacgtgggacctattggaaatgcaga ctttcctcctagaacccaggaccttggaatattcttggcacatagtaggtgctcaatacatattgaactcctaggtgcaa 45 ttcattaattcatgaattaatgaattaacacgctctcaaagtttagtgctttttcacagactagtctttctgcctcttaa gcactcagctcaccacgcttccagtctcactcccctattagtctgattaaaatctgcttacatgtgagtctgagatcaag tgttatetettetgagaagtetteeeteaetggeeeaaaggaattteteetetattttageaetgteeeagttgaettgt aaattgctggcctttggggttggcaatggaggggaggctcttcttgaaaagggggaagagtgttctcctaatatttttct 50 ctgtcaggaactgtctcaattcttgaagttcagagtcaaaaaaagaagcaagttttcctagctctttgatcaactttcaaa gttttacttccatttgaaaatttactaagtcaccaggagatggtttatactgagaaatatccactcatactcttcctctt caactttcttccatatacaccctattacagggatatagtcttactctatagctcaaaaggatgaccctatcagaaacctg cacagtatgtaaaacattctcaccagaggttcacttgtgtatttccaccctagaatggaagctctacaaaagcacagaat ttgttttaaaatcatgactcactcaacaaagttataagaataagaatagtgttacagaattggtatacacaagctgacca taatcaacacctattatcattttttgcgacaggttctcgctgtctacaccttggctggagtggagtggcatgaccacggttcacggtgtgtcatgacctcacacgttgcaggttttacgctgaggttgcatgaccacggttcactgcacgttcacacgctcacacatagctgagccacaggttgtgtg ccaccatgtccagctaactttttaattctttgtagagacagggtcaccctatgttgcccaagctggtcttgaactccttg gctagagagatcctccctccaaggtcccccaaaatgctgggatctcaggcaagagccaccatgcctggccataatcaata 60 cacttttaagaatgctagaatgttatatcagatgcatacttcagcactatctcaagcaaactggggtgtgggttattcta catataaagttcagcagtgttgttccacagtcccaaactccaactgaggtcaaatgtagggtgcagcaaggtcactgggg ctgtcatcaagggcctctccttgcactcttgccaaccctgtttcttgattgtctctaccaccatgagtcaccagcaatct cccacagtcacttgtttaaaagttcacaagtattgtgtgaattgcaggcaaccccttgactccctgattgcctggtcttc 65 tteettgggetetaceatttttttteeceageactetttetgetgetetaaattttaatteatgeaatteeatatgtgtt caaatagacccagggtcttttctgttcatcactcagctttttataggagatccaggagaaatgaagtggaaagggaagtg 70 tłacctłctctactactagtagtaagtactcagtgcgttcttgatgggatgagaatgtgttttgagctttagtgtaaggcagaa ttctgtttagtctgccagtattggagaaaaataaaacacaaagggactgacatgtaggaagtggcacctgggagggtctc aattetteetattacaaaaatgeeecagagaaataaaaagettgtgtacatgttgagatgggagagttetetggeeeee togcaggatgtgtgacagtggggtggctototgctgcgccaccatgagctcaaacccctcataggagggggagcacacag gaaagcccaagtgggcatgtgttacagtgcactctttcagcttttgctgtctgcagcttaagcgttaaccagctcagtttc ttcttggtacccaggtccttgtctgcatccaggaagaatcaggttacacatggacttgaaggatgaatgtgggagtttt 20 ttgaaggtggggcctttaccagcgaacctgtatttccctgtctcctgtgcatatcaatgtaatcaaatactgggctgatc

caggatgtttctttagaccaattatgggtaaaataatttacattcaggtttttatatttgcttttgtcatttcttttaa gcaatcatgtaaaatatctatacgacagtaatagatgatagcgaacctaattaaaattaccagaaacttaagaatctcta atgatttcaactgtaactaaggttatttctctttatgttgaacaatgttgggagataagacacaagagtttctgaagtat ttcagaaacacaaagaggaggttatataaataatatttttttcctactttgggaaaatgaaagctagtcacaaagttaa acgagtggttattttaatatttaaaatacaggcttggatgtatttcctgttaaagaaaataaaatgcagaatattcaaaa cgtctgaccaccttctaagaaaatgcatctctgaggtatttttccttagaagttattgtaaaaatcctggagagaagcttg aacacagcaaagcaaacaggatgcagagtttaatctgtggaaagcttagggaagaaaagcaaatcattaaaaataggtct tcctctgaagatttttaaaacgcaaagagggtggaatagcaatgataataaaaaagctggcatagagagtggcacaattt gctgtgccactgagctgactggatgtgttctgaatttctaggcattagtgtacctttccacacgcattctccctttaaaa aaaatgcccacacactgaatacttttttcatgcaatttaaaataagcgcaccatctagtttacagaaattcactagaagt gacaagtttgatatctacacattgtgaagcacattgatttccctcttacctcttgataaaaattttcaggatcttacaggg gacaagtttgttatctacacattgtgaagcacattgatttctcctctttacctcttgaagcagaagatctgagaggtgactgagc tgattgaatgatccgtgaccgctctactgggaccagtagtagaaactttaatggtggagacctgctggaggtttgaagag gactttgaaaattactagagctacacagaatactgtgtggctaactggattatgtttagaggctttcagaactatgctgct gctgctgcagtgtagccaggacgcacagagaacatctaaggctcttgaatggggcgatagggacagatttcagcagccat ctgacttcagtgctcattttgatgctttccctgcagggtgcagtgtgcagtgtgcagtgtgcagtgtgcagtggtgggaggctcaca caggaatacttgcttctgtagccctaatttccggttcaaactctgcattcaccttgacagattctttcctttggccaaaat ttagttaggcttctgggctttctcttatgcccacctgcagactttttggtaaaatccagttttagtaaagagctctgcta 20 ctattaggttctgttagattagaatcctccttacccttgatgcttcctcttagtatttttttcatccactgactccttgac ccaccttgctcctcggctataaattcccacttgcccatactctgcagttaagactattttctccccactactgcaaaatc ccattgccatggtccctatactatctcaatggtaatgaataaagtctgccttaccatgctttaacaagtaacattgaacc attttttttctttaacaatctgctgcacaatgagattactaaaactttattccattttgccatgctggatgtcctcaatgg 25 tgtgatgtatgttacatagtttttttttcatgttgatcactttttgcccattttcctatatcttatcagttggaagactgt agtetag cag cacage caage categogg ttt categogac taagta categoaat to tatte tatage agacta aa tatte categogac taagac tagage categogac tagage ca30 tatacaactgaccettgaacaacatgaatttgaattgcatggtcagttatacgcagattttettecacctetgecacccc tgagacagtaagatcaatcaatcctcttcctcctactcctcagtctactcaaagatacttgaagtctacttgaagatgac aagcacaaagacatttatgatgatccacttccacttagtgaatagtaaatatgttttctctttcctcctaattttttaaca ctttctctctctagcttaatttattgttaagaatacaatctataatacatatgacatacaaaatatgtcttagttgact gtttatgttatctgtaaggcttcaggtcaagagtatgctattagtggttaagttttcgaggagtcaaaaggtgtatgtgg 35 40 cttacaaagcacagagcaacttctctcctgggttgcgctagttatgatggcaattttaaatgtgtacttttacccaaaga aaatccttattatcaacaatcacaatgccatcataaccatggtataaaaaattcaaaatgtcccagctgaagtggaggca aagactcaagttcatggagtcagagtttccttgctattcctctttttcaaatgaccatttagtaagcacctgaagaaaat actatggacggcattgaaaagtgaagataggtttaatcttctcgaaaatctaattctccagatgaaacgctgacacttat acatttccatgagtttctgaaccatggacagaacgtcgtctgtgggacatgaaactggaacttagaggacaggcacatc tgagaaatgggcagtttaaaggcagaacatagcacatatgtgactgggttttagaagcaaatttacaagacgcactcttc ggatgagagagagtggagattaatggtgggcagagcgaggtttagaacttagtggtttcttcaggtttctgaactgaaatt tgtatactgtaaaggcacaaacaccatttttaacaaaagtgagcaggacttcctatctggttcagaaaataggtgaataa atagtacgaattattaaaaataattactccacttatacataggaaacttgataggaaccatgataaatgcttaactctt aatottcaaggaactotgotagggatataatattataaatottgttttgcagatggagaaattgaattttaacccaagtt accaccacgcccacctaattttgtatttttagtagacaaggggtttctccatgttggtcagggtggttccaaactcctga cctcaggtgatctgccttggcctcccaaagtgctgggattacaggtgtgagccaccatgcctggccccaaatttat ctttaatgccccaaattatctagttcccatgactgggcttctgctttgatcctttctgcacttgctggaccctctccctg qqaaatgaqattqtqtcctqaqcccctaqttaqaqgctatgtctctqctqttcctqaatqqqcctcctggatqaqacctc attaaaagtetaattetettggagaattgagagatacetatttgteteaaaateattgaaaceaattaatgtattatgag cctctatccagtgatttgtacctcaattccccaatccagctgtcaaggccaatttgttctaccttaccttagtaggtaagt ctggaattgtagctgtggcattttcagtaatggtactctaggttagcagtccccaacctttttggcaccagggaccagtt ttgtggaagacaatitttccatgaagggctgggcaggggagtggtttcaggatgaaactgttccacctcagatcatcagg 65 cattagatteteacaaggagtgegeaagetagateeeteacacatgeagtteacaatagggtgtgeacteecatgagaat ctaacaccgctgctgatctgacaggagacagagctcaggcagtaatactcatttgcctaccgctcacctcctgccgtgca gctcagttcctaacaggccacggaccagtactggtccacggcgcaggcatcagggacccctgttgctaggtataagcatc tggctgctgcatgtcttctgtgtagctacatctgtatgtgtatctgatgagatataaattattgattataaattacttt cttcatattagagttgtgaatgagtatcacatatattatacataaactaggaatatgctttttaataatgtatataagt 70 aagtttccttaactatgactttcatcttagcgtagtaagagggtgctaagaaatatttgtgatgaaaataggcattggta gagttgagaccactgggtgatgaaagagtgtaaagattttaaagccttcagatgctggttcaaggtgagaaatgtgattg ggagcaaatcaattaacttcttgaagtcttatagggcagttatgaatacttaatgttaacatatgtaaagctcttctgcc ctgtatacagtaaatgctagttagctattatgatcactactaaaatggggatgacataaacctcataaggttttaagtat tatgcaagatactatacaaagtccagtaaatatcacattcaattgaatccatgatgtccgattattttagctacttccaa 75 taaggccccaacctaatatttagtgatatatttaatgtgaacaaggaactaacgaagactgggaagaaattcacagact tgagagaagaaatggcaggatttcctgggaacaatttcatgtaacgtcaaaggtggtaaaaggtcaaatagaatgaagat ggagaataccggattttcttacaaaatgatttcccaggagatctcatcaatgaaggagataccttctcagtttcacct

aqtqaqtaaaaqactggtaacataqctcacttacaatttggataaacaaaactaaacaaacaacatcaaaatttcagaaa aaataatagcaaaacagaaatcaaacctcaaatttttggtccttctgtttatttcattttggatactcagtgaatgtta attaaccaggaaacttaaaagttatttcaattatgaacctcttcaatccttcatcaattattttgagtattctggtctta aaaacatctctttcttctacaaacttctgaaagagatgaacacctccacctacaccaaaataatgtgctttgctggccaa aagtacacgtccatttttacttaacagtctaaggaaagtctggtgcaaattactataataatctgggttgtaaatggttt ctqaqqtqaqaatgaqatcatattttacaaaaaqtttttcactacttaqtacaaqcttacaaaactcaqaccactcacca gaaaaaaateggeatttatatagttgtgttactittggttteetgcatetttteacatetggeteatttacateatttte gaatttctttggaccctcccttgaatgcagttatacctagtaaacctgatccacaaccaagatccaagacttttttccca gcaaatttcactttqqcctttqtqaaataaqccaqqaggtcaaaggtacattcccagatttttaagcctccctcataaac acctgtaatcagatcagagtgagaagaaaagctttttgaaactatgttttctccagggaagttctctttcaacaagatgg ttttcactactgataacttaacatgctggaaacctggtaatgtttctatgactttatttctaacatcttctttaaatct actgagtggactgtctgtgtcttgagagggagctgcattttccattgacttatgttcccacaagtgatcctgaggcaagt agggtcaaagctccatctctaatgggtgttaattcattttccagatggtcttctatagtgaaattaaactgaaaggtcat cctcttattaaatgcacacatctttaaattcagattcttcaacttctggatagaatttgatgatacacacaaatctgcc tcaattattcaattagttttgttgggcccaatttctctttagcagcttatacatggtaacaaatatttagagatatttcc 20 ctttttcttaaaaagttgtggggaagagagagagataagagatttggacactcatacacaccttaagggttccaaagtgg agatatteagacaggacagcctagctacttgctgtctttcagctgtcttgatttgtgtccaaccatattcaccccctaag cttccagaataacttcacttctgtcttttacagaagaggtgcagtattttattttggtaagtcagcgtccctttaaaaac atgcataggtatggcctggtgtgtaaattcatccaagacttcactccaaacatttagtcgagaacagcagccctaagt gtatagaagtgggggtaatttggcaataattagtaaagactaattcggtggcagagcaaacgcaaactagggcactgcag cctcaattttcacagttctggcaagtgggatctttgttccctttatacaagatttacaatttgggggagagggggtcac ccagtcccgcggctaggaacgcgcctctttcctctcccatcacgctgcaaggcttggagtcacttccggctgcaggtccc ggaacaaatccgaccccagaagtggggacttctggccctcaccttccccttttgaatgtaatgttttcacagtgatccagacc tggggatgcttgcttcccgacgtgtcctgggatcgcgcttctgaaaaaagctcacctcacaaacgcctcctccggacctaaa 30 togogoaccagtgagtogagtoctocaggggctagagaagcocgactttctttccggccttgagggacccgggctcacca agaaaccagccgcctcctctctatggttttggagccggcggagagcgcaagggttggcgggactgcgagtttccggt ctgggctttggcgggtctggtttgaagctctcctgtttgacgaaagtatgtctcaggaaggtgcggtcccagctagcgcg gttcccctggaagaattaagtagctggccagaggagctatgccgcgggaactgccgtcctgccccgactcctcat aggggaagcgacaaccgtggtagatttaagtaaggctttggccctggaaagcctcgcggacgtgttctgacccaaggttt ttgctagtggataatgggggaggcaaggactgagacctgcggtatgacgatagctctggctcttaatagtttgaggtaaa gegagataetetgagettttgteteeegtaaaaagggtggtgaatatgaataagggetttettagegttataagaattaa ctttttcttctttcttttttttttgacaagttctcactcctctcacccaggctggagtctttctgaaagagttcttc cgcttgttgttggctttcaactgttggatttgaggcgcttagcgccttcttcgtccgggtgcagcacattcttgattggt ctcatgcctttgtggttgtaaatgtgcctggaatcctagcctttcatggtaaaccatatgtatatgtatcttttcacaa catttgagcccagctttatacaattacactcaaaagaaaaaaagtaaccttcacttgagagaatctcaatactgcacaaa tattgtgcagctaaagccctatgtaatcacatagaagtcattcacctaggcattagcaaaatctcagaaggtgccaaagccccttttttagtttttgtgtaggtacagaactgccgtcttcaaggagtttcaacttgaaaacaaatagccaccctcaaa acattcaaaaacacttaaactgcgtgcataatgtgtgtgagacatggtgttaggctttgggagaacagagacacggaacg 50 tgattcctcttcttccccacaagcttatagagagacttcattaagttgaaagtcaacattcccacctagctttgcacttc aaacgacatattcaaaaaagcccaaacttcctctagttttcttcatctgagtaaatggtttcacaaactgaaaccttgaa tectetetgteteacacacacegateagtaagttetattgtttetgattecaaactatgtettgaateaateegtttatet ccatcctcattgctaccactctgattccaaacccttatcacctctcacttggagtattaatagtttccttgtttctactc ataattcattattccaaaaaagttaagagggaaaaacatagatctcgtcatttccctttttaaaccactttaccttcaa 55 cctacctcaagatctttttgctcagcctgatttgttctctcagccttttgcatatttcatgtttatgtcttggcccaaat gtcacttccttagaggggctttttcagagccttcaatcttaggcagttccccaaacgcagtcttacacttgtatcacat tggcctgttcagttttctaaaaagcacattaccattaaaagaaatgctcttgtttgctttgtatattttccacttctaca cattatgttgcaaagttcataaaggcaggatgttgattttcttcacagcgttaccctcagcacctagaacagtgcctgac acatagtaagcattcattaaagggctaaaaatatttcatgttttaaaaatacttgggagtctaattagacaatacttttt ttcagettaatggtagtattttagetteaetatttaacaaatgaaaaatttgeaataaatetaeaatgeeattaeecee caaaatctttttcatgttttgcatttttacgtattattttccaggccttacctgcatgtctgcataatcataactgactaa ttttggaacagctggtaattatttgggctttactgaaattttttcatgaggccaattctaccctactgaactcaaattt aggactatgatgatetettgattgttgttgtttgtttgagacgagteteaccetgtcacceaggetggagtgcagtggt acgateteageteacageagecaggtteaagtgatteteetteeteageceteecgagtagetgagattacaggcacgtge caccatgcccggctaattttttgtatctttagtagagatggtttcaccatgttggccaggctggtctcgaactcctgacc 70 atggtgtatatgaagaatttattgtcgtgtatttgtaagctgctatgtgcagaagaatttcagtcaaataaagttggtaa ggaaagaaaaatttcttgtaatagaaatcggaagtacaaactgggcatggtggtgtgcatctctaatcccagctccttga qaqqctggtatgggaggatcactttagcccagqaqcttgaggctgcagtgaggtgtgatcatgtcaccgcactccatcct tggctcactgcaacctctgcctcccagtttcaagtgattctcctgcctcagcctcctgagcagctgggattacaggtgtg egecaccatgeccagetaattattttgtattttaagtagagaegggtteteaccataetggecaggetggtetteaacte accetetetetaaaaaaaataaataaataaateataaacetgtggattattgtagcattgtteteatetgtcaaaaaat atttcatgactatgcatagtttgaaaaggcaagtttgtccctgggcaattttcaaaatatttctttaatgtgttttcaca atactgtttacctaataaatcttaagtttttaaaagcaaaattaagccagtaatttgagtccaattccaatctcttatga gtcattgcttaaatttcaaaagggttttatttttttttaggtttgttctgagtaatgaataccctattactatgatact agtatetteettaattateetaeteattgteteaacattetgacagttggattgagcatattegtaagtaaaattgtttt

aactqtatqatqtactttqatqttaaqqtccqaqtcccacatacctcqqtaqatqtgttcttacaqttttqtattccct aaacgttagttgttacgattagacctatataaaacatgatatgcagtctactgaatagctatcagcctctaacatgttta gtgtcatttagaaaatgctttctaaattgccaaaagctgattgtctaggtgataacaaatttaccatttggaggaagttg actttctcattttcatqtcttcatcagtcttacttgatgagattcattcttctagtcagaagagagtttagactgctcag tttactcatattttgagttagcttttctatttagagttcacttggttgtgggaatattcatttataatttgaatctacgtt gtgtaatgggacctaattttttttttcctttgtttttgttggagtctcgttttgttaccccaggttggagtgcagtggcgtg atctttgctcactgcaacctccaccttccaggttcaggtgattctcctgcctcagtctcccaagtagctgggattacagg 10 catgcttcaccacgcctggctaatttttgtatttttagtagagatggggtttcaccatgttggccaggctggtctcaaaa ctcctgagctcaagtgatcctcctgccttggcctccataagtgctgggattacaggcgtgagccgctgagcctggcccca gagtttgttttgttttgttttcaagacaagatctcactctattgcccaggctggagagcagtagtgcgatcatagctcac tgcagcctgaactcctgggttcaagctattctcctgcctccatcttctaaagtgctgtgattacaggtctgagccatgat 15 catagctagctcactgcagcctccatctcccacgctcaagcaatcctctcacctcagccttccaagtagctgagaccgca ggtggtctttaactcctgggctcagacagtcctcccgcctcagccaacccaaagtgttgggattacaggcgtgagccacca tgcgtggcataattttttttaagtaaattatttttttatcttgagtatagaagtgattcatgttcattgtggaaaatatg 20 tttccgtatattcctgccagcctatccatcattcttcgtacatgtttatctacattaaaattggtgttatatttttggaaa ctttttgtttaactacattgtgaacatttttcatgttttaaaaatgtcattttaatgatggcagatcctattcaatagatg ctacttaatagtttctctgtatagaatgtggtattttgaaagtgtatcaagctttagattggtagtattcttgcatttaa taaagggcagiggcctttgttgactgacaigacaataitttiaiaaaattigttaiitgciitacagaaattitgaaaaat 25 cattaggcagttaaaaactgttacaggctgggcacggtggctcatgcctgtaatcccagctctctgagaaggctgaggtg gcagatcatctgaggtcaggagttcgagaccacccatggtcaacatgatgaaacctcgtctctactaaaagtacaaaaaa 30 ttagctggacatggtggcaggtgcctgtaatcccagctacttgggagactgagacaggagaattgcttgagcctgggagg aagaaaagctggaatattggcaaaatcaagtaactaagagaaaacattaaattcacagaatacattattacattttaqat 35 atatatggtatatgttttctctgaaaagcacaagcataccttttttgttttaaatggagggaactaaagatactttggtg ccaaaatgaaacattatttgtaattaatctcttattgaaatgggtttctaactttagctttgaatcgtaatctttcaaat ttcttgtactcatagtcacttgatgattctctatctgaaatattcttagaaatttgttcttgaccaccagaaaaagattc aactgttacatagatgaaaatggatgttgagtgttaacaggcctatgggaaacagtattttetttagctacattgtattg ttgactgtgttgctattcttataatgtttaggtcatttaaattgttagaaagatccaagtattaagatctagggtggcta acttttcacagacaaaaagcttgtttgtaaggtcatttactatacccttaattcaggaaggttagcttgaattgggtcaa ggggcttttggggggattatgttgtaaaaataccttttctctgtattttgtgcttaattaggtacaattgttaagctaga 45 tgatagcctgtggatgttactagtgcaaaatcaaattatcgtattgtgttttctctgtaaagttttgtcttgtcttttct agtgatttctcttattcctgtttattacttgatttgtttttacagactgtgaaattattcgatgacatgatgtatgaatt tgtattagaaagcaggagagagagaggcttaaagaatgtcaaaatttttatactgatactgattagctatgtattctta tqtaatqqcctaatqttggaattaaatttataqaattaaaqacgtqaatataqaaccatqaattctqaataataaactct 50 tataagaagagaagtcatcaagctagctgaccctacctgtattttcaaggatatgtgtggaacacctgccatgtgttttg aagtttgtgttagtattctaaatggctagacagttgttccagtatttgtagttctgatagactaaagttctgtgaaaaga ggaagagactgtgttttgttcattgctgtatttgtagcacccagcatgctgactaataccttttcagtgcacaaaaaata tattetaagtgaaattteetteettatteacagacaatggtgeagetettaggageteteacaggatgtgtteageatat 55 ttgtgcattgtaaggtgagtaaaggtctaattatactttgaatggtatataatcaatgtgcataggggctgagtaaaata attgttgcaaaaaaagtggttttaaggaagtcattaaaagtggcttttttggggttttttagttttatcttatttcccctc tataaagaaagaagtittaagaatttgtgttgagacagacacagggatcctgaaatagttatgtcatgttgcattgacca atattcaattaccattatgattagatgtcagaacttccttttataaaggaaagttaatccttatttagtccatctctaca cgaatgaaaatcactagttaattaatacctctctttgctgataggatgctaaaaatgtcacgcacctggcctaatgttac ccttttttagttctgtatttgcaagatcatggaagtcagaaataatattttatacatgcttgcatctctttgaagcacact 65 ccttaacctagatttgcgtatttagttactgtaatttctccacaatgattaacttatataactttataatctctgaggtt 70 tacatataaatacgtgcatatgtgtatgtaaatatgtctattctcatatacatattataaatgaaataactcattttacat tgcagtggcacaatctcggctcactgcaacctcgcctcccggactcaagcgattctcctgcctcagcctcatgagtagct gggattataggegteegecaccacacetggetaatttttgtatttttagtagagacagggtttcacegtgttggecagge 75 tggtcttgaactcctgacctcaggtaatccacctgcctcagcctcccaaagtgctgggattacaggcatgagccaccgtg cccagccaatactagtttatttttaaagaattgctggtcgtaacacacttcattgattttatcactcattaatggattat gaacaagagtttgaaaaacaatataaaggcaaagtttgcattcaaaactttggtataaagagagtaagttggttttgtgc agtotgcagtitagggtgggatgtcctgagacaactttctctgatccacctggggcactagctcacccatgtgacttcag tgacttcattcacatctggctgttggcagaggcagaagtacttgagaaagccatgtgcatcatccagcaggttcacccta tctcagatacctgatgccagtggtttcagggtttctaagagtagcaaaagtgtgagcaggtcgctgtgtgctagcacttt tcaagtttctgcttgccttaattttattattgtcccccgggccacagcaggtcatagcgtttagcccagagtcattgtag

tggtaggtataaacttcagaagttaatattcaatatttataaaaaccattaacaagtgtgacacttaaatagtttaaata tattggatatetgetetgttatttecagtatggaccatgeattteatgecaataettggaagtttataattaagtaagtt tgtttgttattttttaettttagaaaatgttttecatattececaatettaattatteatgattettagattgeattt aaaacattttgtgtgaatttaatgttcactgacactgctgtctgataatccagatattctacatgtagctctcaagccaa 10 Catgggccagactagaacttaaccacttttcttctgctactgttgtttaaccagctatcaagtatcctatttctaggatt agataaattgataactataattaaactgaatataatcttttcattaggtacttttaagttgttcacacttaattccatt tgtacagtaattttaactttctgaaactgaagcattttaaagggtcaccagggatagtgcctgtagcattcatcagattc 15 gtcagtgtattttcaggtcttaggtacttttcttgtactaccaggacattaagttgccattcagtggttaagagtgttgc . Ctgggagctgtatcacatgtgcttaaatccattcttgaaatcatttactccttatgagcccttgggctatttggttaatt tctctgaacgttagtttgctcatctgaaaatggaaataataatagcaacttcttgacagggttatagtgagaattgagtt Catcactgtgaaatgcttagaaatgtgcatgacacatagttaatactcaaggaattagccacatcactatcatcatcact gattatcttccactcttaccctcttccagttcattttctgcccagcagaatgatcttttaaaaagtaaatcatgt 20 tactotattgottgaagtotatocoatttgattaagaataacaaootaatoototgtggatgotgootoottoaccagoo tgtctcatgctgctctccctactcttagttcctcaaacataccaaactctcctgtcccagagtcttttcgtggtttttcc atctgcctaggatgcttctctctcctattttgtgtaccttgctaactcctgcttactgtctttcagttctcagcttaaga gttalatettlatgataacattetttgatateettaceetaagattaagtlagattgatateettaceetaagaataagt tagattaggtotototattgtagcacottagactotgtoatttgacaaatcacagcoctaattaattattottaaaatta 25 tttaacatteteteteatgetagaccacaagttteatgcaggtaaggcggagattgtgtccatttgtttgacccetttgt ctccagggcctggtagaatgcctcatacatagtaagaattcaattaatattttacacagagaaaaaattagcaacttatt ttttaaatgttetacaaggtagatattgttagaggteetaagttaettgatgttgttaettgtggtgattgtattetttte tttttattcatttaggcagagccttaagcaccagtccataataaaaagccagttgaaacacaaagatataattactagct 30 tgtgtgaagacattetttteteetteeattettgtttacagttagetgageagatgacacagteagatgeaeaggtaaaa tttgggctaatagcattttaaacagcaactcttattttctttggcagttagtaaatctcatttgaatgtctgggtcagtc cacccagageattgtattagattcctaactgctgtcattgcctctggggtctgcctggctccctctttgcttggtaactg gttggtcacagcattcttctcagaatcctttcattcttttctgcatgagaacaaaaattcttttgttcatatttgtataa gatctgatatagctgcaatcaatcttgcattttttcttcaccaacgcattgcgacctttagggatacaagtatgtttgtg 35 catgtatatgtatgtatcagtcttttaaatttgatatagtcatacatttgttttttattttgaaaagttagagtgttgaat tggtatcccatttatgaaacattatattctaaaaatttgtagtacgattattgggaattataactcattttcctgtaaca 40 gtgcagtggtatgaccttggctcactgcagcctctgcctcacgggttcaagggatcgttctgccttagcctcctgagtag ctgggattataggegeetgeeaceaegeetggetaatttttttagtagagaeggggtttegeeatgttggeeaggetggt ctcgaactectgaceteaggtggtccaecegettggcctcccaaagtgetgggattacaggtgtgagecaecgegcca acatotgoaagotgatacagggaattootttgtacotgogotottooctgocagtcagotatgggggtgaaagtgtaggg gttcatccaagtcctaaaactggtagcaactcctagggcagggctgatctggaaggacagaccctaggggagggtggaac tttaaaaagaagttctgaaggtagtaagaaggaaatgaggagtagtgttaggaaggggctaacttttttcttcttgcttc 50 accacagagtttgcagctagtacttggagaggaaaattaaacagagatacttggaccaagagtaagatgaagaagtcta aacaacagtatagtctatagtggcaagagagagagtattgggggctgcttagccagggtggctgtacataaagtatatcttcagtttatataaactgcttatagatggaaatcagaaaatttaaattctcttaactgtccaagaaaattctcatttttcaaa tttgggactgataaatgtgaccagttctgcttactgtccattgcctgaaatggagctttgaggtggactgtataatttct 55 ttgaagttttcctggcagttttcactttgtgttttagtccatttaggctgctataacaaaatcccttaaactgggtaagg gattataaatattagaaatttatctctcacagttctggaagctgggaagcccaatatcaaggcaccagtagatttggtgt ctaacgagggtgtgccgtctgcttcaaaaatggccccttgttgctgcatcctcacttagtgcaaggggcaagacagctcc cttcaacctctttataaggcacttatgtcattcatgagggcagagcctcatgacttaatcacttccccaaaggcccc acctcttaatagtatcacattgggtgttaggtgtctgggaggacaccaatcttcaagccatatcatctcacttggaaaaa 60 agtcaaaataaaaccagtagatttaattaatattacactatttatagaagcatgtgatgtatcattccttgtattaattt cctggggttgccgtaacaagttaccacaaactaggtggcttaaaacaatagaattttattctctccacatttctagaggca ctcggtgtcactggcaatccttagcttactttggctttctgtgtcttcacatcatctttttataagaacaccagtgatag tgattaagggcataccttactttaatatgacctcatcttaactaattatgtcttcaataaccctatttccaaataaggcc tatttatteteaattaagtettgaaattggttteaaaaagagaatattetattagagtttttaatgtatagttttaacat aggccggactgcggactgcagtggcgcaatctcggctcactgcaagctccgcttcccgggttcacgccattcccctgcct cagecteccgagtagetgggactacaggegeetgecaccgegeceggetaatttttttgtattttagtagagaeggggt 70 ttcaccttgttagccaggatggtctcgatctcctgacctcatgatccaccgcctcggcctcccaaagtgctgggattac gaactaatttaatttccactctaattcctacttatgtttatataatgcttttagaaatttgtattattcagaaaataaac atatactattgtatctgttgcctacacttagattttattgcctgctatatttaaattttattagtattttaattgtttta ttaaagaaagaatgtgcctgtaatctcagcacttttgagaggccaaggcagaaggattgcttgagcccaggagtttgaga 75 ccagactgagcaacacagggagacccccatctctacaaaaaaataaaaaaattctccaggcctcatggcacatacctgtag ttctagttacttgggagactggggtgggaggatgcattgagcccaggagattgaggctgcagtgagccatgatcaggcca attatctaaatagataatagacagattatctaaatagataatagacagattatctaaatagataatagacagattatcta aatagataatagacagattatctaaatagataatagacagattatctaattagataatagataatagattatctaaatagata aaagaaagaaagaaagaatggtgctcatattttaaagcattgaaaaatggtcttccttgcttatattacccacaccttct ttgttggcattaagatgcaaactttgttttaaacagttgagtaaatcaaagatgggactgttaagttatttgtgttattt

 ${\tt acctgctttttgaaaatgtaaaaataaaactctaggtttaattagtagtatgctatttagtaatgaagtaaagctagagg}$ tgggagtacaagataggtacccagtgatgaagtcaggaaaggtttettatggtgatatgatgacgtetatgctgattata aggtcagtgtagaataaactttgtgcttttaaatttgcatagcactgtattagagagttcatcttcaaaataatcgaaaa ggctgagtgtggtgacccatggctgtaatcccagcactttgggaggccgaggtgggcagattgcttgagctaggagttcgagctaggcagctgcacctgt aatgccagctacttgggaggctgaggcaggaggatcacttgaacccaggaggtggaggttgaagtaagccgaggtcatgc ctaccctatttctgctgaggaaaatggactattttcaaatatttttaataagggtcaaaatgagggatc (SEQ ID NO:12063) cctctctcggctagacgagcttccccaactggtaacccttccacaccccaatcttcatggaccagagatcttggatgttc cttccacagttcaaaagacccctttcgtcacccacctgggtatgacactggaaatggtattcagcttcctggcacttctggtcagcaacccagtgttgggcaacaaatgatctttgaggaacatggttttaggcgaccacacccgcccacaacggccacccccataaggcataggcaagaccatacccgccgaatgtaggtgaggaaatccaaattggtcacattcccagggaagatg atctcatgggcccattccaggacacttctgagtacatcatttcatgtcatcctgttggcactgatgaagaacccttaca ggtaattaattgttctcttcacttctcatggggcagcacagaaaggaataagttaggtaactgaagtgaccagcctcga ataaaaagtggcttcatggccgggtgtgatggctcacgcctgtaatcccagcactttgggaggccgaggcaggtggatca 20 ggaggacataccagaggtcactagcettttatttccatagagaaaatgaaactatttctcttattctcacacatttgag 25 tgtgcatagcag (SEQ ID NO:12064) atcaaacagaaatgactattgaaggcttgcagcccacagtggagtatgtggttagtgtctatgctcagaatccaagcgga gagagtcagctctggttcagactgcagtaaccagtacgtaaccactgcttggtttccattttcaaagtcaaattttgtt cttgggtgtctgaatgcccacgacatgtcttttgcaattacacatagggaaagtgaacttgttggttagtttatgtcttg atagttagttgctgtgctttgaatttctttttgctcaaatggcctcagcgaaatcttatttgcctatagcaaatctacaa catttgaagggctatggctggaccagagtgtaatataaatgcttaatagagaggggaaaagaagagtgtaagaaccatta tagggctgggctcacgcctgtaatcccagcattttgggaggctgaggcggatcacgaggtcaggagttcgagaccagcct gaccaacatggtgaaaccccatctctactaaaaatacaaaaattagccagtcgcggtggcacgtgcctgtaatcccagct 35 actcacggaggctgaggcagaagaatcacttggacccaggaggcagaagttgcagtgagccaagatcatgcctctgcacc tgcaaatcagctttaccacttccaaggtataagaaaatccaggtctatgagactaacatcacattgtaaaaatcaaatcg tggtagaatacetttaaattaatataaatacateeecattgtggggacattttgcagggtatetgettatetcacataca ccatgitttaataagtgatgcaacattgcatattttctaaaccaagaaaaattaagcaagtgtttaagtgatttttcctt 40 tgatagtgggttaattggacttcatcaaagaaaatggtatctgcaaaactgctttgcatgttataaaaaatgcttatttca caactigetiteacataacetettaecattaattigeetaacagacattgategeeetaaaggaetggeatteactgatg tggatgtcgattccatcaaaattgcttgggaaagccacaggggcaagtttccaggtacagggggacctactcgagccct gaggatggaatccatgagctattccctgcacctgatggtgaagaagacactgcagagctgcaaggcctcagaccgggttc cgtgtaagggtgaaaaagaattattaggaaagatcctctttaaaggaatggtaagaacaataaaacttaggtgatat ttaaggaaacaagtctgattaaaagaaattttggagtatcctggcttatacacaagaccataaagcaagacatttgaaga ggatactaaagttgtggattatttcctaagctctgactccctgtgattaccctcactatgtataaagaaaagaagtttgg cattacagagcttacttataaaaaggaacccaaactcgggcatttcatagcagcatgattctgagcacacgtgggtaaga 50 cctttcttctctggttagatatcatatgctggtgtataattagcttaaatgattgtgatttagacacctaggaaataatc aatagggcaattgctttccataatactttatcttcttgtgctttatttctgaagcagagtagaatgctaaaagatgtatcc tagtgacagcataaaccctagaggtgacagtctgtattattgcttttcgcttctcttttctgccttctgtgggagccagt tttcttcttacgccgcattacagagagaacgtcaaatttagcaagccatatctgccataggtccaaataaagagacaata 55 ggaggccgggtgcagtggctcacacatgtaatcctagtgctttgggaggctaagccgggagcactgattgaggccaggag ttcatgatcagcctgggcaatgaagtgagaccccgtctctacaaaaaaatatgaaaaaattagcgaggtgtggtgacaca tgcctgtagtcccagctactcaagaggctgaggtagaggatcacttgagcctacgagttcaaggctgcagtgagctatga 60 aaagcaaaacttgtaaaacctaaaatctcttagagttttggcatttacccaaatgttttcagtgattctgagaattggtg gatataaaacacatttctcagcaaacactttcttcattttgcatcccttactgtactttcttgtactgaatctttgcttg accagggaacccacctagcccaacaagaacaatccattctacttcttggaactacgtttattttccttttcccccatttc ctataagataacctctaaccaatgacaatctcgacagctattcctgcaccaactgacctgaagttcactcaggtcacacc cacaagcctgagcgcccagtggacaccacccaatgttcagctcactggatatcgagtgcgggtgacccccaaggagaaga ccggaccaatgaaagaagtcaaccttgctcctgacagctcatccgtggttgtatcaggacttatc (SEQ ID NO:12065) ctgcacttttgataacctgagtcccggcctggagtacaatgtcagtgtttacactgtcaaggatgacaaggaaagtgtcc ctatctctgataccatcatcccaggtaatagaaaataagctgctatcctgagagtgacattccaataagagtggggatta gcatcttaatccccagatgcttaagggtgtcaactatatttgggatttaattccgatctcccagctgcactttccaaaac 70 tgttgcagcgagtatgtaatggagtggcagccatggctttaactctgtattgtctgctcacatggaagtatgactaaaac actgtcacgtgtctgtactcagtactgataggctcaaagtaatatggtaaatgcatcccatcagtacatttctgcccgat tttacaatccatatcaatttccaacagctgcctatttcatcttgcagtttcaaatccttcttttttgaaaattggatttta taaggataggcttgtttgtccattgggttataacataatgaaagcattggacagatcgtgtccccctttggactcttcag 75 tgtctttcctcagcctgaatgtgcttttgaatggcacatttcacaccatacattcataatgcattagcgttatqqccatq atgttgtcatgagttttgtatgggagaaaaaaaatcaatttatcacccatttattattttttccqqttgttcatqcaaqc atggtttcgacatcctaaacagccatatgatttttaggaatctgaacagttcaaattgtaccctttaaggatgttttcaa aatgtaaaaaatatatatatatatatatatatteeetaaaagaatatteetgtttattettetagggaageaaaetgtteat gatgottaggaagtettteagagaatttaaaacagattgcatattaccatcattgctttaacattccaccaattttact

ttgtaactcaatagaggtgccccaactcactgacctaagctttgttgatataaccgattcaagcatcggcctgaggtgga $\verb|ccccgctaaactcttccaccattattgggtaccgcatcacagtagttgcggcaggagagaggtatccctatttttgaagat|$ $\verb|tttgtggactcctcagtaggatactacaaagtcacagggctggagccgggcattgactatgatatcagcgttatcactct|\\$ gatggtgttgcatgctgccaccagttactccggttaaatatggatgtttcatgggggaagtcagcaattggccaaagatt cagataggtggaattggggggataaggaatcaaatgcatctgctaaactgattggagaaaaacacatgcaatatcttcag tacactctcatttaaaccacaagtagatataaagcctagagaaatacagatgtctgctctgttaaatataaaatagcaaa tgttcattcaatttgaagacctagaatttttcttcttaaataccaaacacgaataccaaattgcgtaagtaccaattgat aaaaacccatcaaaatttagggtagagtggatggcattgttttgaggtaggagaaaagtaaacttgggaccattctaggttttgttgttgctgtcactaggtaaagaaacacctctttaaccacagtctggggacaagcatgcaaccattttaaaggttctct gctgtgcatgggaaaagaaacatgctgagaaccaatttgcatgaacatgttcacttgtaagtagaattcactgaatggaactgtagctctagatatctcacatgggggaagtttaggaccctcttgtctttttgtctgtgtgcatgtatttctttgtaa agtactgctatgtttctctttgctgtgggaaacttaaggctcttcggcctgggataaaataatctgcagtggtattaat aatgtacataaagtcaacatatttgaaagtaaacatttttaaaatatttaaaatatatcaatgatggaaaaaaggttaaaggg ggcctaacagtactgtgtgtagtgttttatttttaacagtagtacaacttaaacttaaaatagacttagattagactgtt 15 gcatgattatgattctgtttcctttatgcatgaaatattgattttacctttccagctacttcgttagctttaattttaaa atacattaactgagtcttccttcttgttcgaaaccagctgttcctcctcccactgacctgcgattcaccaacattggtccagacaccatgcgtgtcacctggg (SEQ ID NO:12066) 20 ggaagccgaggttttaactgcgaaagtaaacctgaagctgaagagacttgctttgacaagtacactgggaacacttaccg agtgggtgacacttatgagcgtcctaaagactccatgatctgggactgtacctgcatcggggctgggcgagggagaataa gctgtaccatcgcaaaccgctgccatgaagggggtcagtcctacaagattggtgacacctggaggagaccacatgagact 25 ggtggttacatgttagagtgtgtgtgtcttggtaatggaaaaggagaatggacctgcaagcccatagctgagaagtgttt tgatcatgctgctgggacttcctatgtggtcggagaaacgtgggagaagccctaccaaggctggatgatgstggtagattgta cttgcctgggagaaggcagcggacgcatcacttgcacttctagaaatagatgcaacgatcaggacacaaaggacatcctat agaattggagaacctggagcaagaaggataatcgaggaaacctgctccagtgcatctgcacaggcaacggccgaggaga gtggaagtgtgagaggcacacctctgtgcagaccacatcgagcggatctggccccttcaccgatgttcgtgcagctgttt 30 cagtggttgaagacacaaggaaataagcaaatgctttgcacgtgcctgggcaacggagtcagctgccaagagacagctgt aacccagacttacggtggcaacttaaatggagagccatgtgtcttaccattcacctacaatggcaggacgttctactcct gcaccacggaagggcgacaggacggacatcttttggtgcagcacaacttcgaattatgagcaggaccagaatactctttctgcacagaccacactgttttggttcagactcaaggaggaaattccaatggtgccttgtgccacttccccttcctatacaa caaccacaattacactgattgcacttctgagggcagaagaagacaacatgaagtggtgtgggaccacacagaactatgatgccgaccagaagtttgggttctgccccatggctgccacgaggaaatctgcacaaccaatgaaggggtcatgtaccgcatt ggagatcagtgggataagcagcatgacatggctcacatgatgaggtgcacgtgtgttgggaatggtcgtggggaatggacatggcattgcacttgccactcgcaacttcgagatcagtgcattgttgatgacatcacttacaatgtgaacgacacattccacaagc gtcatgaagaggggcacatgctgaactgtacatgcttcggtcagggtcggggcaggtggaagtgtgatcccgtcgaccaa 40 tgccaggattcagagactgggacgttttatcaaattggagattcatgggagaagtatgtgcatggtgtcagataccagtg chactgetatggccgtggcattggggagtggcattgccaacetttacagacetatecaagetcaagtggtcctgtcgaag tacatteteaggtggagacetaaaaattetgtaggeegttggaaggaagetaeeataeeaggeeaettaaaeteetaeae catcaaaggcctgaagcctggtgtgtatacgagggccagctcatcagcatccagcagtacggccaccaagaagtgactc 45 getttgactteaceaceaceageaceageacetgtgaceageacegtgacaggagagagacgactecetttteteet cttgtggccacttctgaatctgtgaccgaaatcacagccagtagctttgtgggtctcctgggtctcagcttccgacaccgt gtcgggattccgggtggaatatgagctgagtgaggaggagatgagccacagtacctggatcttccaagcacagccactt ctgtgaacatccctgacctgcttcctggccgaaaatacattgtaaatgtctatcagatatctgaggatggggagcagagt ttgatcctgtctacttcacaaacaacagcgcctgatgcccctcctgacccgactgtggaccaagttgatgacacctcaat tgttgttcgctggagcagaccccaggctcccatcacagggtacagaatagtctattcgccatcagtagaaggtagcagcacagaactcaacctcctgaaactccgtcaccctcagtgacttgcaacctggtgttcagtataacatcactaccatcactatc 50 tatgctgtggaagaaaatcaagaaagtacacctgttgtcattcaacaagaaaccactggcaccccacgctcagatacagt 55 qcctctgactgctcaacagacaaccaaactggatgctcccactaacctccagtttgtcaatgaaactgattctactgtcc tggtgagatggactccacctcgggcccagataacaggataccgactgaccgtgggccttacccgaagaggccagcccagg cagtacaatgtgggtccctctgtctccaagtaccccctgaggaatctgcagcctgcatctgagtacaccgtatccctcgt ggccataaagggcaaccaagagagccccaaagccactggagtctttaccacactgcagcctgggagctctattccacctt 60 acaacaccgaggtgactgagaccaccatcgtgatcacatggacgcctgctccaagaattggttttaagctgggtgtacga ccaagccaggaggagaggcaccacgagaagtgacttcagactcaggaagcatcgttgtgtgtccggcttgactccaggagt agaatacgtctacaccatccaagtcctgagagatggacaggaaagagatgcgccaattgtaaacaaagtggtgacaccat tgtctccaccaacaacttgcatctggaggcaaaccctgacactggagtgctcacagtctcctgggagaggagcaccacc ccagacattactggttatagaattaccacaacccctacaacggccagcagggaaattctttggaagaagtggtccatgc 65 tgatcagagctcctgcacttttgataacctgagtcccggcctggagtacaatgtcagtgtttacactgtcaaggatgaca aggaaagtgtccctatctctgataccatcatcccagctgttcctcctcccactgacctgcgattcaccaacattggtcca gacaccatgcgtgtcacctgggctccaccccatccattgatttaaccaacttcctggtgcgttactcacctgtgaaaaa 70 75 qatqcaagtgaccgatgttcaggacaacagcattagtgtcaagtggctgccttcaagttcccctgttactggttacagag taaccaccactcccaaaaatggaccaggaccaacaaaaactaaaactgcaggtccagatcaaacagaaatgactattgaa ggcttgcagcccacagtggagtatgtggttagtgtctatgctcagaatccaagcggagagagtcagcctctggttcagac 80 tgcagtaaccaacattgatcgccctaaaggactggcattcactgatgtggatgtcgattccatcaaaattgcttgggaaa gcccacaggggcaagtttccaggtacagggtgacctactcgagccctgaggatggaatccatgagctattccctgcacct

tgatatggagagccagcccctgattggaacccagtccacagctattcctgcaccaactgacctgaagttcactcaggtca

cacccacaagcctgagcgcccagtggacaccacccaatgttcagctcactggatatcgagtgcgggtgacccccaaggag aagaceggaccaatgaaagaaatcaaccttgctcctgacagctcatccgtggttgtatcaggacttatggtggccaccaa atatgaagtgagtgtctatgctcttaaggacactttgacaagcagaccagctcagggtgttgtcaccactctggagaatg tcageccaecaagaaggetcgtgtgacagatgetactgagaccaecatcaecattagetggagaaccaagaetgagaeg atcactggcttccaagttgatgccgttccagccaatggccagactccaatccagagaaccatcaagccagatgtcagaagctacaccatcacaggtttacaaccaggcactgactacaagatctacctgtacaccttgaatgacaatgctcggagctccc ctgtggtcatcgacgcctccactgccattgatgcaccatccaacctgcgtttcctggccaccaccacccaattccttgctggtatcatcgtgcagcagcagcaggattaccggctacatcatcaagtatgagaagcctgggtctcctcccagagaaagt gtatgacactggaatggattcaggttctggatgttcttttataggtcacaaggtgttgggcacaaatgatctttggtatcacactgg aacatggttttaggcggaccacaccgcccacaacggccacccccataaggccataggccaagaccatacccgccgaatgta ggacaagaagctctctctcagacaaccatctcatgggccccattccaggacacttctggtagtacatcatttcatgtcatcc tgttggcactgatgaagaacccttacagttcagggttcctggaacttctaccagtgccactctgacaggcctcaccagag 15 gtgccacctacaacatcatagtggaggcactgaaagaccagcagaggcataaggttcgggaagaggttgttaccgtgggc aactctgtcaacgaaggcttgaaccaacctacggatgactcgtgctttgacccctacacagtttcccattatgccgttgg agatgagtgggaacgaatgtctgaatcaggctttaaactgttgtgccagtgcttaggctttggaagtggtcatttcagat 20 gtgattcatctagatggtgccatgacaatggtgtgaactacaagattggagagaagtgggaccgtcagggagaaaatggc cagatgatgagctgcacatgtcttgggaacggaaaaggagaattcaagtgtgaccctcatgaggcaacgtgttacgatga tgggaagacataccacgtaggagaacagtggcagaaggaatatctcggtgccatttgctcctgcacatgctttggaggcc agcggggetggcgctgtgacaactgccgcagacctgggggtgaacccagtcccgaaggcactactggccagtcctacaac cagtattctcagagataccatcagagaacaaacactaatgttaattgcccaattgagtgcttcatgcctttagatgtaca 25 ggctgacagagaagattcccgagagtaaatcatetttccaatccagaggaacaagcatgtctctctgccaagatccatet cttcagctcaactcacagcttctccaagcatcacctgggagtttcctgagggttttctcataaatgagggctgcacatt gcctgttctgcttcgaagtattcaataccgctcagtattttaaatgaagtgattctaagatttggttttgggatcaatagg aaagcatatgcagccaaccaagatgcaaatgttttgaaatgatatgaccaaaattttaagtaggaaagtcacccaaacac 30 ttctgctttcacttaagtgtctggcccgcaatactgtaggaacaagcatgatcttgttactgtgatattttaaatatcca gtatttttatacggaaaaaattgtattgaaaacattagtatgcagttgataagaggaatttggtataattatggtgggt gattatttttatactgtatgtgccaaagctttactactgtggaaagacaactgttttaataaaagatttacattccaca (SEQ ID NO:12067) 35 ggtcagcaacccagtgttgggcaacaaatgatctttgaggaacatggttttaggcggaccacaccgcccacaacggccac ccccataaggcataggccaagaccatacccgccgaatgtaggtgaggaaatccaaattggtcacattcccagggaagatg atctcatgggcccattccaggacacttctgagtacatcatttcatgtcatcctgttggcactgatgaagaacccttaca ggtaattaattgttetetteaetteteatggggcagcacagaaaggaataagttaggtaactgaagtgaecagceetega aLaaaaagtggcttcatggccgggtgtgatggctcacgcctgtaatcccagcactttgggaggccgaggcaggtggatca 45 ggaggacataccagagagtcactagccttttatttccatagagaaaatgaaactatttctctttattctcacacatttgag 55 cgagaccagcctgaccaacatggtgaaaccccatctctactaaaaatacaaaaattagccagtcgcggtggcacgtgcct głaatcccagctactcacggaggctgaggcagaagaatcacttggacccaggaggcagaagttgcagtgagccaagatca atctgaaccatatgcaaatcagctttaccacttccaaggtataagaaaatccaggtctatgagactaacatcacattgta 60 aaaatcaaatcgtggtagaatacctttaaattaatataatacatccccattgtggggacattttgcagggtatctgctt atctcacatacaccatgttttaataagtgatgcaacattgcatattttctaaaccaagaaaaattaagcaagtgtttaag tgatttttcctttgatägtgggttaaltggalttcatcaaagaaaatggtatctgcaaaactgctttgcatgttataaaa algettattteacaaettgettteacataaeetettaecattaatttgeetaacagaeattgategeeetaaaggaetgg cattcactgatgtggatgtcgattccatcaaaattgcttgggaaagcccacaggggcaagtttccaggtacagggtgacc 65 tactcgagccctgaggatggaatccatgagctattccctgcacctgatggtgaagaagacactgcagagctgcaaggcct gctattgattccgtgtaagggtgaaaaagaattattaggaaagatcctctttaaagaggaatggtaagaacaataaaa cttaggtgatatttaaggaaacaattaaagcaa gacatttgatgatattaaaggagatgttaaaagcaa gacatttgaagaggatactaaagttgtggattatttcctaagctctgactccctgtgattaccctcactatgtataaaga aaagaagtttggcattacaagagcttacttataaaaaggaacccaaactcgggcatttcatagcagcatgattctgagcac 70 75 tgtggtgacacatgcctgtagtcccagctactcaagaggctgaggtagaggatcacttgagcctacgagttcaaggctgc 80

tttttttaagggaaagcaaaacttgtaaaacctaaaatctcttagagtttttggcatttacccaaatgttttcagtgattc

tgagaattggtggatataaaacacatttctcagcaaacactttcttcattttgcattcccttactgtactttcttqtactg aatctttgcttgaccagggaacccacctagcccaacaagaacaatccattctacttcttggaactacgtttattttcctt ttcccccatttcctataagataacctctaaccaatgacaatctcgacagctattcctgcaccaactgacctgaagttcac tcaggtcacacccacaagcctgagcgcccagtggacaccacccaatgttcagctcactggatatcgagtgcgggtgaccc ccaaggagaagaccggaccaatgaaagaagtcaaccttgctcctgacagctcatccgtggttgtatcaggacttatcctg cacttttgataacctgagtcccggcctggagtacaatgtcagtgtttacactgtcaaggatgacaaggaaagtgtcccta tetetgataccateateccaggtaatagaaaataagetgetateetgagagtgacattecaatagagtggagattagaa tettaateeccagatgettaagggtgteaactatatttgggatttaatteegateteecagetgeaettteeaaaaccaa gaagteaagcagtttggacaaatgettgetgttaacaetgetttaetgteetgtgetteaetgggatgetgtgt 10 tgcagcgagtatgtaatggagtggcagccatggctttaactctgtattgtctgctcacatggaagtatgactaaaacact gtcacgtgtctgtactcagtactgataggctcaaagtaatatggtaaatgcatcccatcagtacatttctgcccgatttt acaatccatatcaatttccaacagctgcctatttcatcttgcagtttcaaatccttctttttgaaaattggattttaaaa ggataggcttgtttgtccattgggttataacataatgaaagcattggacagatcgtgtccccctttggactcttcagtag 15 ctttcctcagcctgaatgtgcttttgaatggcacatttcacaccatacattcataatgcattagcgttatggccatgatg ttgtcatgagttttgtatgggagaaaaaaatcaatttatcacccatttattattttttccggttgttcatgcaagctta gtttcgacatcctaaacagccatatgatttttaggaatctgaacagttcaaattgtaccctttaaggatgttttcaaaat 20 gtaaaaaatatatatatatatatatteeetaaaagaatatteetgtttattettetagggaageaaactgtteatgat gcttaggaagtcttttcagagaatttaaaacagattgcatattaccatcattgctttaacattccaccaattttactact taactcaatagaggtgccccaactcactgacctaagctttgttgatataaccgattcaagcatcggcctgaggtggaccc cgctaaactcttccaccattattgggtaccgcatcacagtagttgcggcaggagaaggtatccctatttttgaagatttt 25 gtggactecteagtaggatactacaeagtcaeagggetggageegggeattgactatgatateagegttateacteteat taatggcggcgagagtgcccctactacactgacacaacaacgggtgaattttgaaaacttctgcgtttgagacatagat ggtgttgcatgctgccaccagttactccggttaaatatggatgtttcatgggggaagtcagcaattggccaaagattcag ataggtggaattggggggataaggaatcaaatgcatctgctaaactgattggagaaaaacacatgcaatatcttcagtac acteteatttaaaccacaagtagatataaageetagagaaatacagatgtetgetetgttaaatataaaaatageaaatgt 30 tcattcaatttgaagacctagaatttttcttcttaataataccaaacacgaataccaaattgcgtaagtaccaattgataag aatatatcaccaaaatgtaccatcatgctcttccttctaccctttgataaactctaccatgctccttctttgtagctaaa aacccatcaaaatttagggtagagtggatgggcattgttttgaggtaggagaaaagtaaacttgggaccattctaggttttgttgtgctgtcactaggtaaagaaacacctctttaaccacagtctggggacaagcatgcaacattttaaaggttctctgctgtgcatgggaaaagaaacactgctgtgagaacaattttcactgatggaacaagtaggaactg 35 tagototagatatotoacatggggggaagtttaggaccotottgtotttttgtotgtgtgcatgtatttotttgtaaagt actgctatgtttctctttgctgtgtggcaacttaagcctcttcggcctgggataaaataatctgcagtggtattaataat gtacataaagtcaacatatttgaaagtagattaaaatcttttttaaatatatcaatgatggcaaaaaaggttaaagggggc Ctaacagtactgtgtgtagtgttttatttttaacagtagtacactataacttaaaatagacttagattagactgtttgca tgattatgattctgtttcctttatgcatgaaatattgattttacctttccagctacttcgttagctttaattttaaaata 40 cattaactgagtcttccttcttgttcgaaaccagctgttcctcctcccactgacctgcgattcaccaacattggtccaga tggtttgtacttgttatggaggaagccgaggttttaactgcgaaagtaaacctgaagctgaagagacttgctttgacaag tacactgggaacacttaccgagtgggtgacacttatgagcgtcctaaagactccatgatetgggactgtacctgcatcgg ggctgggcgagggagaataagctgtaccatcgcaaaccgctgccatgaagggggtcagtcctacaagattggtgacacct cccatagetgagaagtgttttgatcatgetgetgggactteetatgtggteggagaaacgtgggagaageectaccaagg ctggatgatggtagattgtacttgcctgggagaaggcagcggacgcatcacttgcacttctagaaatagatgcaacgatc aggacacaaggacatcctatagaattggagacacctggagcaagaaggataatcgaggaaacctgctccagtgcatctgc 50 acaggcaacggccgaggagagtggaagtgtgagaggcacacctctgtgcagaccacatcgagcggatctggccccttcac tggtotactctgtggggatgcagtggttgaagacacaaggaaataagcaaatgctttgcacgtgcctgggcaacggagtc agctgccaagagacagctgtaacccagacttacggtggcaacttaaatggagagccatgtgtcttaccattcacctacaa tggcaggacgttctactcctgcaccacggaagggcgacaggacggcatctttggtgcagcacaacttcgaattatgagc 55 aggaccagaaatactctttctgcacagaccacactgttttggttcagactcaaggaggaaattccaatggtgccttgtgc cacttccccttcctatacaacaaccacaattacactgattgcacttctgagggcagaagagacaacatgaagtggtgtgg gaccacacagaactatgatgccgaccagaagtttgggttctgcccatggctgcccacgaggaaatctgcacaaccaatg aaggggtcatgtaccgcattggagatcagtgggataagcagcatgacatgggtcacatgatgaggtgcacgtgtgttggg aatggtcgtggggaatggacatgcattgcctactcgcaacttcgagatcagtgcattgttgatgacatcacttacaatgt 60 gaacgacacattccacaagcgtcatgaagaggggcacatgctgaactgtacatgcttcggtcagggtcggggcaggtgga agtgigatcccgtcgaccaaigccaggaitcagagactgggacgtttiatcaaattggagattcaigggagaagtatgig catggtgtcagataccagtgctactgctatggccgtggcattggggagtggcattgccaacctttacagacctatccaag ctcaagtggtcctgtcgaagtatttatcactgagactccgagtcagcccaactcccaccccatccagtggaatgcaccac ggccacttaaactcctacaccatcaaaggcctgaagcctggtgtgtatacgagggccagctcatcagcatccagcagta cggccaccaagaagtgactcgctttgacttcaccaccaccagcaccagcacacctgtgaccagcaacaccgtgacaggag agacgactcccttttctcctcttgtggccacttctgaatctgtgaccgaaatcacagccagtagctttgtggtctcctgg tettecaageacageeacttetgtgaacateeetgaeetgetteetggeegaaaatacattgtaaatgtetateagatat 70 caagttgatgacacctcaattgttgttcgctggagcagaccccaggctcccatcacagggtacagaatagtctattcgccatcagtagaaggtagcagcacagaactcaaccttcctgaaactgcaaactccgtcaccctcagtgacttgcaacctggtg ttcagtataacatcactatctatgctgtggaagaaaatcaagaaagtacacctgttgtcattcaacaagaaaccactggc acceccageteagatacagtgaccggetaccgtgtggatgtgatecccgtcaacctgcctggcgagcacgggcaggaggc 75 tgcccatcagcaggaacacctttgcagaagtcaccgggctgtcccctggggtcacctattacttcaaagtctttgcagtg agccatgggagggagagcaagcctctgactgctcaacaqacaaccaaactqqatgctcccactaacctccaqtttgtcaa tgaaactgattctactgtcctggtgagatggactccacctcgggcccagataacaggataccgactgaccgtgggcctta cccgaagaggccagcccaggcagtacaatgtgggtccctctgtctccaagtaccccctgaggaatctgcagcctgcatct gagtacaccgtatccctcgtggccataaagggcaaccaagagagccccaaagccactggagtctttaccacactgcaqcc tgggagctctattccaccttacaacaccgaggtgactgagaccaccatcgtgatcacatggacgcctgctccaagaattg gttttaagctgggtgtacgaccaagccagggaggagggcaccacgagaagtgacttcagactcaggaagcatcgttqtg

tccggcttgactccaggagtagaatacgtctacaccatccaagtcctgagagatggacaggaaagagatgcgccaattgt aaacaaagtggtgacaccattgtctccaccaacaaacttgcatctggaggcaaaccctgacactggagtgctcacagtctcctgggagaggagcaccaccccagacattactggttatagaattaccacaacccctacaaacggccagcagggaaattct ttggaagaagtggtccatgctgatcagagctcctgcacttttgataacctgagtcccggcctggagtacaatgtcagtgt ttacactgtcaaggatgacaaggaaagtgtccctatctctgataccatcatcccagctgttcctcctcccactgacctgc tctcctgcctggtacagaatatgtagtgagtgtctccagtgtctacgaacaacatgagagcacacctcttagaggaagac agaaaacaggtcttgattccccaactggcattgacttttctgatattactgccaactcttttactgtgcactggattgct $\verb|cctcgagccaccatcactggctacaggatccgccatcatcccgagcacttcagtgggagacctcgagaagatcgggtgcc| \\$ ccactctcggaattccatcaccctcaccaacctcactccaggcacagagtatgtggtcagcatcgttgctcttaatggca gagaggaaagtcccttattgattggccaacaatcaacagtttctgatgttccgagggacctggaagttgttgctgcgacc cccaccagcctactgatcagctgggatgctcctgctgtcacagtgagatattacaggatcacttacggagaaacaggagg aaatagcctgtccaggagttcactgtgcctgggagcaagtctacagctgcagcggccttaaacctggagttgatt
ataccatcactgtgtatgctgtcactggcgtggagcaagtccacagcagcagccaatttccattaatcagagta gaaattgacaaaccatcccagatgcaagtgaccgatgttcaggacaacagcattagtgtcaagtggctgccttcaagttc ccctqttactqqttacaqaqtaaccaccactcccaaaaatqqaccaqqaccaacaaaaactaaaactqcaggtccagatc aaacagaaatgactattgaaggcttgcagcccacagtggagtatgtggttagtgtctatgctcagaatccaagcggagag agtcagcctctggttcagactgcagtaaccaacattgatcgccctaaaggactggcattcactgatgtggatgtcgattc 20 catcaaaattgcttgggaaagcccacaggggcaagtttccaggtacagggtgacctactcgagccctgaggatggaatcc atgagctattccctgcacctgatggtgaagaagacactgcagagctgcaaggcctcagaccgggttctgagtacacagtc agtgtggttgccttgcacgatgatatggagagccagccctgattggaacccagtccacagctattcctgcaccaactga cctgaagttcactcaggtcacacccacaagcctgagcgcccagtggacaccacccaatgttcagctcactggatatcgag 25 ggacttatggtggccaccaaatatgaagtgagtgtctatgctcttaaggacactttgacaagcagaccagctcagggtgt tgtcaccactctggagaatgtcagcccaccaagaagggctcgtgtgacagatgctactgagaccaccatcaccattagct ggagaaccaagactgagacgatcactggcttccaagttgatgccgttccagccaatggccagactccaatccagagaacc atcaagccagatgtcagaagctacaccatcacaggtttacaaccaggcactgactacaagatctacctgtacaccttgaa tgacaatgctcggagctcccctgtggtcatcgacgcctccactgccattgatgcaccatccaacctgcgtttcctggcca gggtctccccagagaagtggtccctcggccccgccctggtgtcacagaggctactattactggcctggaaccgggaac cctttcgtcacccaccctgggtatgacactggaaatggtattcagcttcctggcacttctggtcagcaacccagtgttgg gcaacaaatgatctttgaggaacatggttttaggcggaccacacgccacaacggccaccccataaggcataggccaa
gaccataccggcgaatgtaggacaagaagctctctctcagacaaccatctcatgggccaattccaggacacttctgag tetgacaggeetcaccagaggtgccacctacaacatcatagtggaggcactgaaagacccagcagaggcataaaggttcggg gtttcccattatgccgttggagatgagtgggaacgaatgtctgaatcaggctttaaactgttgtgccagtgcttaggctt tggaagtggtcatttcagatgtgattcatctagatggtgccatgacaatggtgtgaactacaagattggagagaagtggg accgtcagggagaaaatggccagatgatgagctgcacatgtcttgggaacggaaaaggagaattcaagtgtgaccctcat gaggcaacgtgttacgatgatgggaagacataccacgtaggagaacagtggcagaaggaatatctcggtgccattttgctc ctgcacatgctttggaggccagcggggctggcgctgtgacaactgccgcagacctgggggtgaacccagtcccgaaggca ttcatgcctttagatgtacaggctgacagagaagattcccgagagtaaatcatctttccaatccagaggaacaagcatgt $\verb|ctctggaggaagttctccagcttcaactcacagcttctccaagcatcaccctgggagtttcctgagggttttctc| \\$ ataaatgagggctgcacattgcctgttctgcttcgaagtattcaataccgctcagtattttaaatgaagtgattctaaga taggaaagteaeccaaacaettetgettteaettaagtgtetggeecgcaataetgtaggaacaagcatgatettgttac tgtgatattttaaatatccacagtactcactttttccaaatgatcctagtaattgcctagaaatatctttctcttacctg ttatttatcaatttttcccagtatttttatacggaaaaaattgtattgaaaacacttagtatgcagttgataagaggaat ttggtataattatggtgggtgattatttttatactgtatgtgccaaagctttactactgtggaaagacaactgttttaa taaaagatttacattccaca (SEQ ID NO:12068) tcaagagtageggatgaggegettgtggggegeggeceggaagecetegggegegggetgggagaaggagtgggeggag cgccgcaggaggctcccggggcctggtcggccggctgggccccgggcgcagtggaagaaagggacgggcggtgcccgggt tttgcattctgggaccgccccttccattcccgggccagcggcgagcggcagcggctggagccgcagctacagcatg agagccggtgccgctcctccacgcctgcggacgcgtggcgagcggaggcagcgctgcctgttcgcgccatgggggcaccg tggggctcgccgacggcggcggcggggcggcggggtggcgcgaggccgaggccgggggctgccatggaccgtctgtgtgcc ggcggccgccggcttgacgtgtacggcgctgatcacctacgcttgctgggggcagctgccgccgctgccctgggcgtcgc caaccccgtcgcgaccggtgggcgtgctgctgtggtgggagcccttcggggggcgcgatagcgccccgaggccgcccct tttccaccacegegacetegtgaaggggccccccgactggeccccggcctggggcatecaggcgcacactgccgaggagg tggatetgegegtgttggaetaegaggaggeageggeggeggeagaageetggegaeeteeageeeeeaggeeeeeggge cagegetgggtttggatgaacttegagtegeeetegeacteeceegggetgegaageetggeaagtaacetetteaactg gacgctctcctaccgggcggactcggacgtctttgtgccttatggctacctctaccccagaagccacccggcgacccgc cctcaggcctggccccgccactgtccaggaaacaggggctggtggcatgggtgatggcactgggacgagcgccaggcc cgaaattgggctcctgcacacagtggcccgctacaagttctacctggctttcgagaactcgcagcacctggattatatca cgaaattgggttttggtatatagtggtttggtgggtggtgtggggtgtggggtgtggggcagacagtgcagattttatta ccgaagatetggcgcaacgcgttgctcgctggggcggtgccaggtgctgggcccagaccgtgccaactacgagcg tttgtgccccgcgggcgccttcatcaccgtggacgacttccaacgtgcccaagtgcctcctcctcggcctgtacctgcttttcctcga ccgcaaccccgcggtctatcgccgctacttccactggcgcggagctacgctgtccacatcacctccttctgggacgagc cttggtgccgggtgtgccaggctgtacagagggctggggaccggcccaagagcatacggaacttggccagctggttcgag cggtgaagccgcgctcccctggaagcgacccaggggaggccaagttgtcagctttttgatcctctactgtgcatctcctt gactgccgcatcatgggagtaagttcttcaaacacccatttttgctctatgggaaaaaaacgatttaccaattaatatta ctcagcacagagatgggggcccggtttccatattttttgcacagctagcaattgggctccctttgctgctgatgggcatc attgtttaggggtgaaggaggggttcttcctcaccttgtaaccagtgcagaaatgaaatagcttagcggcaagaagccg ttgaggcggtttcctgaatttccccatctgccacaggccatatttgtggcccgtgcagcttccaaatctcatacacaact

 $\tt gttcccgattcacgtttttctggaccaaggtgaagcaaatttgtggttgtagaaggagccttgttggtggagagtggaagtgaagtgaagtg$ gactgtggctgcaggtgggactttgttgtttggattcctcacagccttggctcctgagaaaggtgaggaggcagtccaa gaggggcgctgacttctttcacaagtactatctgttccctgtcctgtaatggaatggaagcaaagtgctggattgtccttgg
aggaaacttaagatgaatacatgcgtgtacctcactttacataagaaatgtattcctgaaaagcaaagtgcatttaaatcaagt cccaaattcattgacttaggggagttcagtatttaatgaaaccctatggagaatttatccctttacaatgtgaatagtca tctcctaatttgtttcttctgtctttatgttttctataacctggattttttaataatcatattaaaattacagatgtgaa tgtggtqqqaqcccttcggggggcqcqataqcqcccgaggccgcccctgactgcccgctgcqcttcaacatcaqcqgc tgccgcctgctcaccgaccgcgcgcgtcctacggagaggctcagggccgtgcttttccaccaccgcgacctcgtgaaggggcc ccccgactggcccccgccctggggcatccaggcqcacactgccgaggaggtggatctgcgcgtgtttggactacgaggagg cageggeggeggeagaagecetggegaeetecagececaggeeeeegggeeagegetttggatgaaettegagteg ccctcgcactccccggggctgcgaagcctggcaagtaacctcttcaactggacgctctcctaccgggcggactcggacgt ctttgtgccttatggctacctctaccccagaagccacccggcgacccgcctcaggcctggcccgccactgtccagga aacaggggctggtggcatggtggtgagccactgggacgagcgccaggcccgggtccgctactaccaccaactgagccaa 20 catgtgaccgtggacgtgttcggccggggcgggccggggcagccggtgccgaaattgggctcctgcacacagtggcccg ctacaagttctacctggctttcgagaactcgcagcacctggattatatcaccgagaagctctggcgcaacgcgttgctcg ctggggcggtgccggtggtgctgggcccagaccgtgccaactacgagcgctttgtgccccgcggcgccttcatccacgtg gacgactteccaagtgcctcctccctggcctcgtacctgcttttcctcgaccgcaaccccgcggtctatcgccgctactt ccactggcgccggagctacgctgtccacatcacctccttctgggacgagccttggtgccgggtgtgccaggctgtacaga gggctgggaccggccaagagcatacggaacttggccagctggttcgagcggtag (SEQ ID NO:12070) cagatactetgaeccatggatecceetgggeeeggeeaageeacagtggtegtggegetgetgtetgaecaegetgetgtt teagetgetgatggetgtgtttttttctcctatetgcgtgtgteteaagacgateceactgtgtaccetaatgggtccc gcttcccagacagcacagggacccccgcccactccatcccctgatcctgctgtggacgtggccttttaacaaacccata atgtectacegeagegactecgacatetteaegecetaeggetggetggagegttgtecgagectggecagectgcceaeceaegectgccaaecteteggecaggetggetggetggetggetgetecaaetgggggcaaaaetecgecagggtggetaetaetaaggagectgcaggetggetggeteceaeaeggggacaaaetecgecagggaaecatgatggag acgctgtcccggtacaagttctatctggccttcgagaactccttgcaccccgactacatcaccgagaagctgtggaggaa cgccttggaggcctgggccgtgcccgtggtgctgggcccagcagaagcaactacgaggttcctgccggcagcct tcatccacgtggacgacttccagagccccaaggacctggccggtacctgcaggagctggacaaggaccacgccgctac ctgagctactttcgctggcgggagacgctgcggcctcgctccttcagctgggcactcgctttctgcaaggcctgctggaa actgcaggaggaatccaggtaccagacacgcggcatagcggcttggttcacctgagaggcccggcatggggcctgggctg ccaggg (SEQ ID NO:12071) aaggagcacagttccaggcggggctgagctagggcgtagctgtgatttcaggggcacctctggcggctgccgtgatttga gaatctcgggtctctttggctgactgatcctgggagactgtggatgaataatgctgggcacggccccacccggaggctgcg aggettgggggtcetggeeggggtggetetgetegetecetetggeteetgtggetgetggggteageeeteggggta ccccggcaccccagcccacgatcaccatccttgtctggcactggcccttcactgaccagcccccagagctgcccagcgac acctgcacccgctacggcatcgcccgctgccacctgagtgccaaccgaagcctgctggccagcgccgacgccgtggtctt $\verb|ccaccaccggcgagctgcagacccggcggtcccacctgcccctggcccagcggcgcgcgagggcagccctgggtgtgggcct| \\$ ccatggagtctcctagccacacccacggcctcagccacctccgaggcatcttcaactgggtgctgagctaccggcgcgac cgcctgggtggtcagcaacttccaggageggcagctgctgcaggctgccaggctgccagctggcggccagtaccggtgg atgtctttggccgtgccaatggacgccactgtgcgccagtaccgg gtgcgactgttcaccgactggcgggaacgtttctgtgccatctgtgaccgctacccacacctaccccgcagccaagtcta aatcaaaccaccaggcatccggcccttaccggcaagcagcgggctaacgggaggctgggcacagaggtcaggaagcaqqq gggaggggaaaggetgccgaggaccetecccaccetgaacaatettgggtgggtgaaggeetggetggaagagggtgaa aggcagggcccttggggctggggggcaccccagcctgaagtttgtgggggccaaacctgggaccccgagcttcctcggta gcagaggccctgtggtccccgagacacaggcacgggtccctgccacgtccatagttctgaggtccctgtgtgtaggctgg agcagtgaaaaaaaaaaaaaa (SEQ ID NO:12072) ctgctcctgcgcggcagctgctttagaaggtctcgagcctcctgtaccttcccagggatgaaccgggccttccctctgga tcaagagtagcggatgaggcgcttgtggggcgcggcccggaagccctcgggcgcgggctgggagaaggagtgggcggag cgccgcaggaggctcccggggcctggtcgggccggctgggccccgggcgcagtggaagaaagggacgggtgcccggt tttgcattctgggaccgccccttccattcccgggccagcggcgagcggcagcgacggctggagccgcagctacagcatg tggatctgcgcgtgttggactacgaggaggcagcggcggcagaagcccttggcgacctccaggccccaggcccccgggc
cagcgctgggtttggatgaacttcgagtcgcctcgcactccccgggctgcgaagcctggcaagtaacctcttcaactg gacgototoctaccgggcggactcggacgtotttgtgccttatggctacctotaccccagaagccaccccggcgacccgc cctcaggcctggccccgccactgtccaggaaacaggggctggtggcatgggtggtgagccactgggacgagggccaggcc cgaaattgggctcctgcacacagtggcccgctacaagttctacctggctttcgagaactcgcagcacctggattatatca tttgtgccccgcgcgccttcatccacgtggacgacttcccaagtgcctcctccctggcctcgtacctgcttttcctcga

cttggtgccgggtgtgccaggctgtacagagggctggggaccggcccaagagcatacggaacttggccagctggttcgagcggtgaagccgccccctggaagcgacccaggggaggccaagttgtcagctttttgatccttactgtcatctcctt gactgccgcatcatgggagtaagttcttcaaacaccattttgctctatgggaaaaaacgatttaccaattaatatta
ctcagcacagagatgggggcccggtttccatatttttgctctatgggaaaaaaacgatttaccaattaatatta
ctcagcacagagatgggggggggttcttccatattttttgcacagctagcaattgggctccctttgctgctgctgctgcaggaca
attgtttaggggtgaaggagggggttcttcctcaccttgtaaccagtgcagaaatgaaatagcttagcggcaagaagacg
ttgaggcggtttcctgaatttccccatctgcacaggccatatttgtggcccgtgcagcttccaaatctcatacacaact gttcccgattcacgttttctggaccaaggtgaagcaaatttgtggttgtagaaggagccttgttggtggagagtggaag gactgtggctgcaggtgggactttgttgtttgattcctcacagccttggctcctgagaaaggtgaggaggcagtccaa gaggggccgctgacttctttcacaagtactatctgttcccctgtcctgtgaatggaagcaaagtgctggattgtccttgg aggaaacttaagatgaatacatgcgtgtacctcactttacataagaaatgtattcctgaaaagctgcatttaaatcaagt gggcagctgccgccgctgccctgggcgtcgccaaccccgtcgcgaccggtgggcgtgctgctgtggtgggagcccttcgg 20 ggggggggatagcgcccgaggccgcccctgactgccgctgcgcttcaacatcagcggctgccgcctgctcaccgacc gcgcgtcctacggagaggctcaggccgtgcttttccaccaccgcgacctcgtgaaggggccccccgactggcccccgcc Eggggcatccaggcgcacactgccgaggaggtggatctgcgcgtgttggactacgaggaggcagcggcggcagaagc cctggcgacctccagccccaggcccccgggccagcgctgggtttggatgaacttcgagtcgccctcgcactccccggggc tgcgaagcctggcaagtaacctcttcaactggacgctctcctaccgggcggactcggacgtctttgtgccttatggctac 25 ctctaccccagaagccaccccggcgacccgcctcaggcctggcccgccactgtccaggaaacaggggctggtggcatg ggtggtgagccactgggacgagcccaggcccgggtccgctactaccaccaactgagccaacatgtgaccgtggacgtgt toggccggggcgggccggggcagccggtgcccgaaattgggctcctgcacacagtggcccgctacaagttctacctggct ttcgagaactcgcagcacctggattatatcaccgagaagctctggcgcaacgcgttgctcgctggggcggtgccggtggt gctgggcccagaccgtgccaactacgagcgctttgtgccccgcggcgccttcatccacgtggacgacttcccaagtgcct cctccctggcctcgtacctgcttttcctcgaccgcaacccgcggtctatcgccgctacttccactggcgccggagctac gctgtccacatcacctccttctgggacgagccttggtgccgggtgtgccaggctgtacagagggctggggaccggccaa gagcatacggaacttggccagctggttcgagcggtagcagatactctgacccatggatcccctgggcccggccaagccac agtgcccagctccacgctccccqaggcgcaggggcagcgatggatctggatctggattcagcatggattccccaagcccatagctgccactgctg gcagctgaaagccatggacggatacttcaatctcaccatgtcctaccgcagcgactccgacatcttcacgccctacggct ggctggagccgtggtccggccagcctgcccacccaccgctcaacctctcggccaagaccgagctggtggcctgggcagtg tccaactgggggccaaactccgccagggtgcgctactaccagagcctgcaggcccatctcaaggtggacgtgtacggacg ctcccacaagcccctgccccagggaaccatgatggagacgctgtcccggtacaagttctatctggccttcgagaactcct tgcaccccgactacatcaccgagaagetgtggaggaacgccctggaggcctgggccgtgcccgtggtgctgctgggccccagc agaagcaactacgagaggttcctgccgcccgacgccttcatccacgtggacgacttccagagccccaaggacctggcccg tcagctgggcactcgctttctgcaaggcctgctggaaactgcaggaggaatccaggtaccagacacgcggcatagcggct tggttcacctgagaggcccggcatggggcctgggctgccagggaaggagcacagttccaggcggggctgagctagggcgt tgtggatgaataatgctgggcacggccccacccggaggctgcgaggcttgggggtcctggccggggtggctctgctcgct gccctctggctcctgtggctgctggggtcagccctcggggtaccccggcaccccagcccacgatcaccatccttgtctg gcactggcccttcactgaccagccccagagctgcccagegacacctgcacccgctacggcatcgcccgctgccacctga ctggccgggggaggtgggtgtgggtggaagggctgggtgtcgaaatcaaaccaccaggcatccggcccttaccggcaagc agcgggctaacgggaggctgggcacagaggtcaggaagcaggggtgggggtgcaggtggggcactggagcatgcagagga ggtgagagtgggagggtaacgggtgcctgctgcggcagacgggaggggaaaggctgccgaggaccctccccaccctg aacaaatcttgggtgggtgaaggcctggctggaagagggtgaaaggcagggcccttggggctgggggcaccccagcctg aagtttgtgggggccaaacctgggaccccgagcttcctcggtagcagaggccctgtggtccccgagacacaggcacgggt ccctgccacgtccatagttctgaggtccctgtgtgtaggctggggcccaggagaccacgggagcaaaccagctt ccccctccaagataatttttaaaaaaccttctcctttgctcacctttgcttcccagccttcccatcccccaccgaaag 70 caccccgccgtgctcaacgggcagcacccggacaccacccgggctcagccactcctacatggacgcggcgcagta acactacetgtgcaacgcetgcgggctctatcacaaaatgaacggacagaaccggccctcattaagcccaagcgaaggc tgtctgcagccaggagagcagggacgtcctgtgcgaactgtcagaccaccaccaccacactctggaggaatgccaat

catccagaccagaaaccgaaaaatgtctagcaaatccaaaaagtgcaaaaagtgcatgactcactggaggacttcccca agaacagctogtttaaccoggcogcototocagacacatgtoctcoctgagcoacatotogcoottcagcoactcoagc aaaggagctcactgtggtgtctgtgttccaaccactgaatctggaccccatctgtgaataagccattctgactcatatcc cctatttaacagggtctctagtgctgtgaaaaaaaaatgctgaacattgcatataacttatattgtaagaaatactgta caatgactttattgcatctgggtagctgtaaggcatgaaggatgccaagaagtttaaggaatatgggagaaatggtgtgg aaattaagaagaaactaggtetgatatteaaatggacaaactgccagttttgtttcctttcactggccacagttgtttga tgcattaaaagaaaataaaaaaaag (SEQ ID NO:12074)
acacagagagaaaagctaaagttctctggaggatgtggctgcagagcctgctgctctttgggcactgtggcctgcagcatc tetgcaecegeeegetegeeeageeeeageacgcageeetgggageatgtgaatgeeateeaggaggeeeggegteteet gaacctgagtagagacactgctgctgagatgaatgaaacagtagaagtcatctcagaaatgtttgacctccaggagccga cctgcctacagacccgcctggagctgtacaagcagggcctgcggggcagcctcaccaagctcaagggccccttgaccatg atggccagccactacaagcagcactgccctccaaccccggaaacttcctgtgcaacccagattatcacctttgaaagttt caaaqaqaacctqaaqqactttctqcttqtcatccctttqactqctqqqaqccaqtccaqqaqtqaqaccqqccaqatq aggetggccaagecggggagetgeteteteatgaaacaagagetagaaactcaggatggteatettggagggaccaaggg gtgggccacagccatggtgggagtggcctggacctgccctgggcacactgaccctgatacaggcatggcagaagaatggg 20 ttetetetgaecagcaecatgetteteetggtgaeaageettetgetetgtgagttaecaeaeceageatteeteetgat cccagagaaatcggatctgcgaacagtggcaccagcctctagtctcaatgtgaggtttgactccaggacgatgaatttaa gctgggactgccaagaaaacacaaccttcagcaagtgtttcttaactgacaagaagaacagagtcgtggaacccaggctc 25 agtaacaacgaatgitcgtgcacatttcgtgaaatttgtctgcatgaaggagtcacatttgaggttcacgtgaatactag tctacaatgoggatttaatgaactgtacctgggcgaggggtccgacgcccccgtgacgtccagtattttttgtacata taacctgtcaggattaacgtctcgcaattactttctggttaacggaaccagccgagaaattggcatccaattctttgatt 30 tacccagoctggcacggaaaacctactgattaatgtttctggtgatttggaaaatagatacaactttccaagctctgagc ccagagcaaaacacagtgtgaagatcagagctgcagacgtccgcatcttgaattggagctcctggagtgaagccattgaa tttggttccttaggatacagcggctgttcccgccagttccacagatcaaagacaaactgaatgataaccatgaggtggaa gacgagatcatctgggaggaattcaccccagaggaagggaaaggctaccgcgaagaggtcttgaccgtgaaggaaattac ctgagacccagagggtgtaggaatggcatggacatctccgcctccgcgacacgggggaactgtttcttgatgatgatgctgt gaacctttatatcattttctatgtttttatttaaaaacatgacatttggggccaggcggtggctcacgcctgtaatcc cag (SEQ ID NO:12076) ttetcagagtggctgcagtetegetgctggatgtgcaetggtggteattecetetgeteacaggggcaggggteeceee ttactggactgaggttgceeeetgtecaggteetggggageecatgtgaactgteagtggggcaggtetgtgagag agcctgcccaaaggcccctgggattacaggcaggatggggagccctatctaagtgtctcccacgcccaccccagccatt agagccctcaggaaggcgggtgggtgggctgtcggttcttggaaaggttcattaatgaaaacccccaagcctgaccacct agggaaaaggctcaccgttcccatgtgtggctgataagggccaggagattccacagttcaggtagttccccgcctccct ggcattttgtggtcaccattaatcatttcctctgtgtatttaagagctcttttgccagtgagcccagctacacagagaga aaggetaaagttetetggaggatgtggetgeagageetgetgetetttgggeaetgtggeetgeageatetetgeaeeege ccgctcgcccagccccagcacgcactgggagcatgtgaatgccatccaggaggcccggcgtctcctgaacctgagta gagacactgctgctgagatggtaagtgagagatgtgggcctgtgctaggcaccagtggccctgactggccacgcctgtc agcttgataacatgacattttccttttctacagaatgaaacagtagaagtcatctcagaaatgtttgacctccaggtaagatgcttctctctgacatagctttccagaagcccctgccctggggtggaggtgggggactccattttagatggcaccacaca $\verb|gggttgtccactttctcccagtcagctggctgcaggaggagggggtagcaactgggtgctcaagaggctgctggccgtg|$ cccctatggcagtcacatgagctcctttatcagctgagcgccatgggcagacctagcattcaatggccaggagtcacca ggggacaggtggtaaagtgggggtcacttcatgagacaggagctgtgggtttggggcgctcactgtgccccgagaccaag 55 aggccccaccccctctccctgaatgatgggtgagagtcacctccttccctaaggctgggctctctccaggtgccgg
gagggtggcctgggcggggcagtgagaagggcaggttcgtgcctctcgcaggccagggtctatgaccagc ctgtgcccctcccaagccctactcctgggggctgggggcagcagcaaaaaggagtggtggagagttcttgtaccactgtg ggcacttggccactgctcaccgacgaacgacattttccacaggagccgacctgcctacagacccgcctggagctgtacaa 60 caaccccggtgagtgcctacggcagggcctccagcaggaatgtcttaatctagggggtggggtcgacatggggagagatc tatggctgtggctgttcaggaccccagggggtttctgtgccaacagttatgtaatgattagccctccagagaggaggcag acagcccatttcatcccaaggagtcagagccacagagcgctgaagcccacagtgctcccagcaggagctgctcctatcc tggtcattattgtcattacggttaatgaggtcagaggtgagggcaaaccccaaggaaacttggggcctgcccaaggcccag aggaagtgcccaggcccaagtgccaccttctggcaggactttcctctggccccacatggggtgcttgaattgcagaggat gactgcccagaaggccaacctcaggctggcacttaagtcaggcccttgactctggctgccactggcagagctatgcactc cttggggaacacgtgggtggcagcagcgtcacctgacccaggtcagtgggtgtgtcctggagtgggcctcctggcctctg agtictaagaggcagtagagaaacatgctggtgcttccttcccccacgttacccacttgcctggactcaagtgtttttta tttttttttttaaaggaaacttcctgtgcaacccagattatcacctttgaaagtttcaaagagaacctgaaggacttt ctgcttgtcatcccctttgactgctggagccagtccaggagtgagaccggccagatgaggcggagctggcaagccggggagct gctctctcatgaaacaagagctagaaactcaggatggtcatcttggagggaccaaggggtgggccacagccatggtggg 75 cat (SEQ ID NO:12077) acacagagagaaaggctaaagttetetggaggatgtggctgcagageetgetgetettgggcactgtgggcetgeageate tetgcaccegecegetegeceagececageageeetgggaggatgtggaatgtgaatgccatecaggaggcecggcgteteet gaacctgagtagagacactgctgctgagatgaatgaaacagtagaagtcatctcagaaatgtttgacctccaggagccga cctgcctacagacccgcctggagctgtacaagcagggcctgcggggcagcctcaccaagctcaagggccccttgaccatg atggccagccactacaagcagcactgccctccaaccccggaaacttcctgtgcaacccaqattatcacctttgaaagttt

 ${\tt caaagagaacctgaaggactttctgcttgtcatcccctttgactgctgggagccagtccaggagtgagaccggccagatgagaccggccagatgagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagaccagatgagatgagaccagatgagatgagaccagatgagatgagaccagatgag$ aggctggccaagccggggagctgctctctcatgaaacaagagctagaaactcaggatggtcatcttggagggaccaaggg gtgggccacagccatggtgggagtggcctggacctgccctgggcacactgaccctgatacaggcatggcagaagaatggg cagcaccatgcttctcctggtgacaagccttctgctctgtgagttaccacacccagcattcctcctgatcccagagaaat cggatctgcgaacagtggcaccagcctctagtctcaatgtgaggtttgactccaggacgatgaatttaagctgggactgc caagaaaacacaaccttcagcaagtgtttcttaactgacaagaagaacagagtcgtggaacccaggctcagtaacaacga atgitogtgcacatttcgtgaaatttgtotgcatgaaggagtcacatttgaggttcacgtgaatactagtcaaagaggat gatttaatgaactgtacctgggcgaggggtccgacggcccccgtgacgtccagtattttttgtacatacgaaactcaaa gagaaggaggagatccggtgtccttattacatacaagactcaggaacccatgtgggatgtcacctggataacctgtcag gattaacgtctcgcaattactttctggttaacggaaccagccgagaaattggcatccaattctttgattcacttttggacacaaagaaaatagaacgattcaaccctcccagcaatgtcaccgtacgttgcaacacgacgcactgcctcgtacggtggaa 15 aggatacagcggctgttcccgccagttccacagatcaaagacaaactgaatgataaccatgaggtggaagacgagatcat ctgggaggaattcaccccagaggaagggaaggctaccgcgaagaggtcttgaccgtgaaggaaattacctgagacccag 20 agggtgtaggaatggcatggacatctccgcctccgcgacacgggggaactgttttcttgatgatgctgtgaacctttata tcattttctatgtttttatttaaaaacatgacatttggggccaggcgggtggctcacgcctgtaatcccagttctcaga gtggctgcagtctcgctgctggatgtgcacatggtggtcattccctctgctcacaggggcaggggtccccccttactgga ctgaggttgccccctgctccaggtcctgggtgggagcccatgtgaactgtcagtggggcaggtctgtgagagctcccctc 25 caaaggccctgggattacaggcaggatgggggggcctatctaagtgtctcccacgcccaccccagccattccaggcca Caggaaggcgggtgggtgggctgtcggttcttggaaaggttcattaatgaaaacccccaagcctgaccacctagggaaaa ggctcaccgttcccatgtgtggctgataagggccaggagattccacagttcaggtagttcccccgcctccctggcatttt gtggtcaccattaatcatttcctctgtgtatttaagagctcttttgccagtgagcccagctacacagagagaaaggctaa 30 ccagccccagcacgcagccctgggagcatgtgaatgccatccaggaggcccggcgtctcctgaacctgagtagagacact gctgctgagatggtaagtgagagaatgtgggcctgtgctaggcaccagtggccctgactggccacgcctgtcagcttgat aacatgacattttccttttctacagaatgaaacagtagaagtcatctcagaaatgtttgacctccaggtaagatgcttct ctctgacatagctttccagaagcccctgccctggggtggaggtggggactccattttagatggcaccacacagggttgtc 35 cactitctctccagtcagctggctgcaggaggaggggtagcaactgggtgctcaagaggctgctggccgtgcccctatg gcagtcacatgagctcctttatcagctgagcggccatgggcagacctagcattcaatggccaggagtcaccaggggacag gtagttaaaatgagttettattaatgagaagaggttttaaggaagatgtaggtttgaggeteactgtgcccagagaccaagtcctgttg
agacagtgctgactacagagaggcacagaggggtttcaggaacaaccttgccaccagcaggtccaggtgaggccca
ccccctctccctgaatgatggggtgagagtcacctccttccctaaggctgggctcatctccaggtgcgctgagggtgg 40 cctgggcggggcagtgagaagggcaggttcgtgcctgccatggacagggcagggtctatgactggacccagcctgtgccc ctcccaagccctactcctgggggctggggcagcaataaggagtggtggagagtttttttataccactgtgggcacttggccactgctcaccgacgacgacattttccacaggagccgacctgcctacagacccgcctggagctgtacaagcagggcc 45 tggctgttcaggaccccagggggtttctgtgccaacagttatgtaatgattagccctccagagaggaggcagacagccca tttcatcccaaggagtcagagccacagagcgctgaagcccacagtgctccccagcaggagctgctcctatcctggtcatt attgtcattacggttaatgaggtcagaggtgagggcaaacccaaggaaacttggggcctgcccaaaggcccagaggaagtg cccaggcccaagtgccaccttctggcaggactttcctctggccccacatggggtgcttgaattgcagaggatcaaggaag 50 agaaggccaacctcaggctggcacttaagtcaggcccttgactctggctgccactggcagagctatgcactccttggga acacgigggtggcagcagcgicacctgacccaggicagtgggtgtgicciggagtgggcctcctggcctctgagttctaa gaggcagtagagaaacatgctggtgcttccttcccccacgttacccacttgcctggactcaagtgtttttatttttctt tttttaaaggaaacttcctgtgcaacccagattatcacctttgaaagtttcaaagagaacctgaaggactttctgcttgt catcccctttgactgctgggagccaggccaggagtgagaccggccagatgaggctggccaaggcggggagctgctctctcatgaaaacaagagctagaaactcaggatggtcatcttgagaggaccaaggggtgggccacagccatggtgggagtggcct 55 gacctgccctgggcacactgaccctgatacaggcatggcagaagaatgggaatattttatactgacagaaatcagtaata gtaataattattattaaaaatatgottotaottgtocagtgttotagtttgttttaacccatgagcaaatgocat (SEQ ID NO:12078) 60 atcotggotgatatggtgaaaccccatctctactaaaaatacaaaaattagctgggcgtggtggtgggcgcatgtaatcc cagctactcaggaggctgaggcaggagaattacttgaacctgggaggcagagggttgcagtgaaccgagatcgcgccattg tttetttaaactcaccactttttgatgaatatgaaaatctaaaaacttggccgggcgcagtggctcacacctgtaatctc 65 agcactttgggaggccaaggtgggcggatcatctgaggtcaggagttcaagatcagcctgaccaacatggtgaaacccct tctctactaaaaatacaaaaattagctgggcgtggtggtggtgctgtaattgtagctacttgggaggctgaggcatga gaatcacttgaacccagaaagcagaggttgcagtgagctgagatggtgccactgcactccagcctgggtgacagagtgag actetgteetaaaaaaaaaaaaaaaaaaatggetgggegtggtgeeteatgeetgtaateeeageaetttgggagteea gcgtgggtggatcacctgaggtcaggagttcaagtccagcctgaccaacatggtgaaaccccgtctctactaaaaaagta caaaaaaaatagccgggtgtggtggcacactcctgtaatcccagctactcaggaggctgaggcaggagaatcacttgaat ttgggagctggagattgtagtcagccaagatggtgccattgcactccagtctgggtgacagagtgagactccatctcaaa ataacagaggatacagtccgttttcagtagagccttagtagcaaagggttttcatttttattttcagatacaggatctt gccctgtcacccaagctggagtgcagtgatgtgatcatagctgactgcagcctcctgagtagctaggactataggtgtattataggacaattttaaaaaatttcattgtaaagacaggattccactgtgttgcccaggctgcaagtcttggcctcaagt ttcaaatagaaaagtaaaataacgaatatgcttttccaataacataatccccttctcacttgagaattttcctctaaaaa 80

caaggccctaggctggcatttcttggccttcccqatggtcccaagatgactctcatggcctcaaacatcacttcctcac

atcctgtcagggagaaagaggcaagtgagcaacaacaatttgtggtgttttggatcatttgtcagagaggaagaacgttcc taaaaactccgcctctgctgtttgacatcctcatcctattccttggccatggtggtatctcatggtcactcctctatctg ccaatgagccactatcctcctgcctcttagaagacaagatgtgtgagggcaacaagaccactatggccgtacgccctagatgatgccctgatggtgtcctgagcactatctgcttggtcacagtagggcctaaacaggaccactatggtgtgatgccgtac ggagtgagcggaagctccacactgtggggaacctgtacatcgtcagctctcggtggcggacttgatcgtgggggtgtcttcagtggggacttgatcgtggcgtcgtcgtcatcgctcatgtgcgtcgtcgtcatgcctcttttggctttccat tgtcacctggttcaaggtcatgactgccatcatcaacttctacctgcccaccttgctcatgctctggttctatgccaaga aggccagagaaccccaagggggatgccaagaaaccagggaaggattccctgggaggttctgaaaaaggaagccaaaagg tgctggtggtggatctgtcttgaagtcaccatcccaaacccccaaggagatgaaatccccagttgtcttcagccaagagg 20 atgatagagaagtagacaaactctactgctttccacttgatattgtgcacatgcaggctgcggcagagggggagtagcagg gactatgtagecgtcaaccggagccatggccagctcaagacagatgagcagggcctgaacacacatggggccagcgagat atcagaggatcagatgttaggtgatagccaatccttctctcgaacggactcagataccaccacagagacagcaccaggca aaggcaaattgaggagtgggtctaacacaggcctggattacatcaagtttacttggaagaggctccgctcgcattcaaga 25 ctgctggatcccttatttcatcttcttcatggtcattgccttctgcaagaactgttgcaatgaacatttgcacatgttca ccatctggctgggctacatcaactccacactgaaccccctcatctaccccttgtgcaatgagaacttcaagaagacattc aagagaattetgatattegeteetaagggaggetetgaggggatgeaacaaaatgateettatgatgteeaacaaggaa atagaggacgaaggcctgtgttgttgccaggcaggcacctgggctttctggaatccaaaccacagtcttaggggcttggta gtttggaaagttcttaggcaccatagaagaacagcagatggcggtgatcagcag (SEQ ID NO:12080) 30 ccaqaqaaccccaaqqqqqatqccaaqaaaccaqqqaaqqaqtctccctqqqaqqttctqaaaaqqaaqccaaaaqatqc tggtggtggatctgtcttgaagtcaccatcccaaacccccaaggagatgaaatccccagttgtcttcagccaagaggatg atagagaagtagacaaactctactgctttccacttgatattgtgcacatgcaggctgcggcagaggggagtagcaggggac tatgtagccgtcaaccggagccatggccagctcaagacagatgagcagggcctgaacacacatggggccagcgagatatc agaggatcagatgttaggtgatagccaatccttctctcgaacggactcagataccaccacagagacagcaccaggcaaag gcaaattgaggagtgggtctaacacaggcctggattacatcaagtttacttggaagaggctccgctcgcattcaagacag tatgtatetgggttgcacatgaaccgcgaaaggaaggccgccaaacagttgggttttatcatggcagccttcatcctctg ctggatcccttatttcatcttcttcatggtcattgccttctgcaagaactgttgcaatgaacatttgcacatgttcacca tetggetgggetacateaactecacactgaaccectcatetaccecttgtgcaatgagaacttcaagaagacattcaag agaattctgcatattcgctcctaagggaggctctgaggggatgcaacaaaatgatccttatgatgtccaacaaggaaata gaggacgaaggcetgtgtgttgccaggcaggcacetgggetttetggaatecaaaccacagtettaggggettggtagtt 50 caqctactcaqqaqqctqaqqcaggaqaattacttgaacctgggaggcaqaggttgcagtgaaccgagatcgcgccattg ctggctttgtcttaatgtaaaaataatttctttttgctaaattattgagagaaatttactattattagtgtttatcagt tttctttaaactcaccactttttgatgaatatgaaaatctaaaaacttggccgggcgcagtggctcacacctgtaatctc agcactttgggaggccaaggtgggcggatcatctgaggtcaggagttcaagatcagcctgaccaacatggtgaaacccct tctctactaaaaatacaaaaattagctgggcgtggtggtggtggctgtaattgtagctacttgggaggctgaggcatga gaatcacttgaacccagaaagcagaggttgcagtgagctgagatggtgccactgcactccagcctgggtgacagagtgag actotgtoctaaaaaaaaaaaaaaaaaatggotgggogtggtgctcatgcotgtaatcocagcactttgggagtcca gcgtgggtggatcacctgaggtcaggagttcaagtccagcctgaccaacatggtgaaaccccgtctctactaaaaaagta caaaaaaaatagccgggtgtggtggcacactcctgtaatcccagctactcaggaggctgaggcaggagaatcacttgaat ttgggagctggagattgtagtcagccaagatggtgccattgcactccagtctgggtgacagagtgagactccatctcaaa aaaaaaaaaaaatettaaaaacteetteeagaagatttaataettaettteacceaaccegaettgagtateacca ${\tt ataacagaggatacagtccgttttcagtagagccttagtagcaaagggttttcatttttatttttcagatacaggatctt}$ gccctgtcacccaagctggagtgcagtgatgtgatcatagctgactgcagcctcctgagtagctaggactataggtgtat tataggacaatttttaaaaaatttcattgtaaagacaggattccactgtgttgcccaggctgcaagtcttggcctcaagt ttcaaatagaaaagtaaaataacgaatatgcttttccaataacataatccccttctcacttgagaattttcctctaaaaa gatatgctagatttattcatgctttatgctctcggtgtgtccccttataacctcctccatatcatttagggatggtc 70 taaaaactccgcctctgctgtttgacatcctcatcctattccttggccatggtggtatctcatggtcactcctctatctg ccactgtaaagaggaactggattgctatattctgcttagacacatgaggatgcagcccaccttcccagaacatgtgcgga attagatttctacaaacacatttgtcttgcttctgcccaactctcactagaatgcacattccataggggcaaacattt tgaatgcatgaataaggaaaagggtacatggctattgagtaggtaaccagcagtgttgatcacccccaacagcatacaac agggagtgagccataactggcggctgctcttgcgccaatgccaatgagcctccccaattcctcctgcctcttagaagaca

agatgtgtgagggcaacaagaccactatggccagccccagctgatgcccctggtggtggtcctgagcactatctgcttg gtcacagtagggctcaacctgctggtgctgtatgccgtacggagtgagcggaagctccacactgtggggaacctgtacat gccacagtagggcccaacctgctggtgctgtatgccgtacggagtgagcggaagctccacactgtggggaacctgtacat cgtcagctctctggtggcgacttgatcgtggtggcgtcgtcatgcctatgacacatcttacctgtcatgctcatgtccaagt ggtcactgggcgtcctctctgcctcttttgctttccatggactatgtggccagcacagcgtccattttcagtgtcttc atctgtgcattgatcgctaccgctctgttccagcagccctcaggtacctttaagtatcgtaccaagacccgagcctcggc caccattctgggggcctggtttctctcttttctgtgggttattcccattctaggctggaatcacttcatgcagcagcacc cggtgcgccgagaggacaagtgtgagacagacttctatgatgtcacctggttcaaggtcatgactgccatcatcaacttc tacctgccaccttgctcatgctctggttctatgccaagatctaaagacctacagaacctaccaagaccgaacacactgccagcacaggagact catcaataggtccctcccttccttctcagaaattaagctgaggccagagaaccccaagggggatgccaagaaaccagggaaggtctccctgggaggttctgaaaaggaagccaaaagatgctggtggtggatctgtcttgaagtcaccatcccaaacc cccaaggagatgaaatccccagttgtcttcagccaagaggatgatagagaagtagacaaactctactgctttccacttga tattgtgcacatgcaggctgcggcagaggggagtagcagggactatgtagccgtcaaccggagccatggccagctcaaga ccgccaaacagttgggttttatcatggcagccttcatcctctgctggatcccttatttcatcttcttcatggtcattgcc catctaccccttgtgcaatgagaacttcaagaagacattcaagagaattctgcatattcgctcctaagggaggctctgag 20 ggctttctggaatccaaaccacagtcttaggggcttggtagtttggaaagttcttaggcaccatagaagaacagcagatg gcggtgatcagcagatgagcctccccaattcctcctgcctcttagaagacaagatgtgtgagggcaacaagaccactatg gccagccccagetgatgcccctggtggtcgtcctgagcactatctgcttggtcacagtagggctcaacctgctggtgct gtatgccgtacggagtgagcggaagctccacactgtggggaacctgtacatcgtcagcctctcggtggcggacttgatcg tgggtgccgtcgtcatgcctatgaacatcctctacctgctcatgtccaagtggtcactgggccgtcctctctgcctcttt tggctttccatggactatgtggccagcacagcgtccattttcagtgtcttcatcctgtgcattgatcgctaccgctctgt ccagcagcccctcaggtaccttaagtatcgtaccaagacccgagccteggccaccattctgggggcctggtttctctctt ttctgtgggttattcccattctaggctggaatcacttcatgcagcagacctcggtgcgccgagaggacaagtgtgagaca gacttctatgatgtcacctggttcaaggtcatgactgccatcatcaacttctacctgcccaccttgctcatgctctggtt aagccaaaagatgctggtggtggatctgtcttgaagtcaccatcccaaacccccaaggagatgaaatccccagttgtctt cagccaagaggatgatgatagagaagtagacaaactetactgetttecaettgatattgtgcacatgcaggetgeggcagagg gagtaagaggatgatagagaagtagataactttattgttttottgatatgaggagggctgaacacacatggg gccagcgagatatcagaggatcagatgttaggtgatagccaatcttatctctctgaacggactcagatacaccacacagagac agcaccaggcaaaggcaaattgaggagtgggtctaacacaggcctggattacatcaagtttacttggaagagctccgct gccttcatcctctgctggatcccttatttcatcttcttcatggtcattgccttctgcaagaactgttgcaatgaacattt gcacatgttcaccatctggctgggctacatcaactccacactgaaccccttcatctaccccttgtgcaatgagaacttca agaagacattcaagagaattctgcatattcgctcctaagggaggctctgaggggatgcaacaaaatgatccttatgatgt ggggcttggtagtttggaaagttcttaggcaccatagaagaacagcagatggcggtgatcagcagagagattgaactttg cacgcgtccgcgagaaggaggactcgcaagcctcggcgcccggaaccggcctcggactgtcgacggaacctgaggccgc ttgccctcccgccccatggagcggccccggggctgcggccgggcgcgggccctgggagatacggaggctggg caccggcgcttcgggaacgtctgtctgtaccagcatcgggaacttgatctcaaaatagcaattaagtcttgtcgcctag agctaagtaccaaaaacagagaacgatggtgccatgaaatccagattatgaagaagttgaaccatgccaatgttgtaaag gcctgtgatgttcctgaagaattgaatattttgattcatgatgtgcctcttctagcaatggaatactgttctggaggaga ggtggaaagataatacataaaataattgatctgggatatgccaaagatgttgatcaaggaagtctgtgtacatcttttgt 55 gacctgttgaccttactttgaagcagccaagatgttttgtattaatggatcacattttgaatttgaagatagtacacatc gcgtgaaactggaataaatactggttetcaagaacttetttcagagacaggaatttetctggatectcggaaaccagcct ctcaatgtgttctaqatqqagttaqaqqctgtgataqctatatggtttatttgtttgataaaaqtaaaactgtatatgaa gggccatttgcttccagaagtttatctgattgtgtaaattatattgtacaggacagcaaaatacagcttccaattataca 60 gctgcgtaaagtgtgggctgaagcagtgcactatgtgtctggactaaaagaagactatagcaggctctttcagggacaaa gggcagcaatgttaagtcttcttagatataatgctaacttaacaaaaatgaagaacactttgatctcagcatcacaacaa ctgaaagctaaattggagttttttcacaaaagcattcagcttgacttggagagatacagcgagcagatgacgtatgggat atcttcagaaaaaatgctaaaagcatggaaagaaatggaagaaaaggccatccactatgctgaggttggtgtcattggat acctggaggatcagattatgtctttgcatgctgaaatcatggagctacagaagagcccctatggaagacgtcaggggagac 65 ttgatggaatctctggaacagcgtgccattgatctatataagcagttaaaacacagaccttcagatcactcctacagtga cagcacagagatggtgaaaatcattgtgcacactgtgcagagtcaggaccgtgtgctcaaggagctgttttggtcatttga gcaagttgttgggctgtaagcagaagattattgatctactccctaaggtggaagttggcctcagtaatatcaaagaagct ggtgtaatcattttaaattccactgaaaatttaacagtatccccttctcatcgaagggattgtgtatctgtgcttctaat attagttggctttcataaatcatgttgttgtgtgtatatgtatttaagatgtacatttaataatatcaaagagaagatgc ctgttaatttataatgtattgaaaattacatgtttttcatttgtaaaaatgagtcatttgttaaacaatctttcatg

tcttgtcatacaaatttataaaggtctgcactcctttatctgtaattgtaattccaaaatccaaaaagctctgaaaacaa

ggtttccataagcttggtgacaaaattcatttgcttgcaatctaatctgacctgaccttgaatctttttatcccatttag agtatggtatatgcacaaaactacttttctaaaatctaaaatttcataattctgaaacaacttgccccaagggtttcaga gaaaggactgtgggacctctatcatctgctaagtaatttagaagatattatttgtcttaaaaaatgtgaaatgctttata cccgccccggggagcccgccccttccccgcgtccctgccgacagagttagcacgacatcagtatgagctggtcaccttc cctgacaacgcagacatgtggggcctgggaaatgaaagagcgccttgggacagggggatttggaaatgtcatccgatggc acaatcaggaaacaggtgagcagattgccatcaagcagtgccggcaggagctcagcccccggaaccgagagcggtggtgc ctggagatccagatcatgagaaggctgacccaccccaatgtggtggctgcccgagatgtccctgaggggatgcagaactt ggcgcccaatgacctgcccctgctggccatggagtactgccaaggaggagatctccggaagtacctgaaccagtttgaga actgctgtggtctgcgggaaggtgccatcctcaccttgctgagtgacattgcctctgcgcttagataccttcatgaaaac agaatcatccatcgggatctaaagccagaaaacatcgtcctgcagcaaggagaacagaggttaatacacaaaattattga cctaggatatgccaaggagctggatcagggcagtctttgcacatcatcgtggggaccctgcagtacctggccccagagacc 15 tactggagcagcagcagaagtacacagtgaccgtcgactactggagcttcggcaccctggcctttgagtgcatcacgggcttc Cggcccttcctcccaactggcagccgtgcagtggcattcaaaagtgcggcagaagaggaggtggacattgttgttg Cgaagacttgaatggaacggtgaagttttcaagctctttaccctacccaataatcttaacagtgtcctggctgagcga tggagaagtggctgcaactgatgctgatgtggcacccccgacagaggggcacggatcccacgtatgggcccaatggctgc ttcaaggccctggatgacatcttaaacttaaagctggttcatatcttgaacatggtcacgggcaccatccacacctaccc 20 tgtgacagaggatgagagtctgcagagcttgaaggccagaatccaacaggacacgggcatcccagaggaggaccaggagc tgctgcaggaagcgggcctggcgttgatccccgataagcctgccactcagtgtatttcagacggcaagttaaatgagggc cacacattggacatggatcttgtttttctctttgacaacagtaaaatcacctatgagactcagatctccccacggcccca acctgaaagtgtcagctgtatccttcaagagcccaagaggaatctcgccttcttccagctgaggaaggtgtggggccagg tctggcacagcatccagaccctgaaggaagattgcaaccggctgcagcagggacagcgagccatgatgaatctcctc 25 cgaaacaacagctgcctctccaaaatgaagaattccatggcttccatgtctcagcagctcaaggccaagttggatttctt caaaaccagcatccagattgacctggagaagtacagcgagcaaaccgagtttgggatcacatcagataaactgctgctgg cctggagggaaatggagcaggctgtggagctctgtgggggggagaacgaagtgaaactcctggtagaacggatgatggct ctgcagaccgacattgtggacttacagaggagccccatgggccggaagcaggggggaacgctggacgacctagaggagca agcaagggagctgtacaggagactaagggaaaaacctcgagaccagcgaactgagggtgacagtcaggaaatggtacggc 30 tgctgcttcaggcaattcagagcttcgagaaagaaagtgcgagtgatctatacgcagctcagtaaaactgtggtttgcaag gcaggagaagcggcagaaggagctctggaatctcctgaagattgcttgtagcaaggtccgtggtcctgtcagtggaagcc cggatagcatgaatgcctctcgacttagccagcctgggcagctgatgtctcagccctccacggcctccaacagcttacct gagccagccaagaagagtgaagaactggtggctgaagcacataacctctgcaccctgctagaaaatgccatacaggacac tgtgagggaacaagaccagaggtttcacggccctagactggagctggttacagacggaagaagaagagcacagctgcctgg agcaggcetcatgatgtggggggactcgacccctgacatggggcagcccatagcagggctttgtgcagtgggggactcg accccctgacatggggctgcctggagcaggccgcgtgacgtgggggctgcctggccgcgggctctcacatggtgggttcctgc tgcactgatggcccaggggtctctggtatccagatggagctctcgcttcctcagcagctgtgactttcacccaggaccca ggacgcagccctccgtgggcactgccggcgccttgtctgcacactggaggtcctccattacagaggcccagcgcacatcg cacacacgtgactggacagtgtccaattcaaatctttcagggcagagtccgagcagcgcttggtgacagcctgtcctctc ctgctctccaaaggccctgctccctgtcctctctcactttacagcttgtgtttcttctggattcagcttctcctaaacag acagtttaattatagttgeggectggecceatecteacttectetttttattteactgetgetaaaattgtgtttttace 45 ggcacgagcatggcccttgtgatccaggtggggaaactaaggcccagagaagtgaggaccccgcagactatcaatcccag tetetteeceteacteeetgtgaageteteeageateategaggteeeateageeettgeeetgttggatgaataggeae ctctggaagaccaactgtgtgagatggtgcagccagtggtggcccggcagcagatcaggacgtactgggcgaagagtc tcctctggggaagccagccatgctgcacctgccttcagaacagggcgctcctgagaccctccagcgctgcctggaggaga atcaagagctccgagatgccatccggcagagcaaccagattctgcgggagcgctgcgaggagcttctgcatttccaagcc agccagagggaggaggaggagttcctcatgtgcaagttccaggaggccaggaaactggtggagagactcggcctggagaa gctcgatctgaagaggcagaaggagcaggctctgcgggaggtggagcacctgaagagatgccagcagcagcagctgagg acaaggcctctgtgaaaggccaggtgacgtccttgctcggggagctgcaggagagccagagtcgcttggaggctgccact aaggaatgccaggctctggagggtcgggcccgggccagcgagcaggcggcagctggagagtgagcgcagctgaggcgcc 55 atcaagagcagcgtggtgggcagtgagcggaagcgaggaatgcagctggaagatetcaaacagcagctccagcaggccgaggaggccctggtggccaaacaggaggtgatcgataagctgaagaggcgagccgagcagcacaagattgtgatggagaccg aagaaggageteetgeaggageagetggageagetgeagagggagtacagcaaactgaaggecagetgteaggagtegge 60 caggatogaggacatgaggaagcggcatgtogaggtotocoaggcoccettgcoccogcocctgcctacctotototot ccctggccctgcccagccagaggaggagccccccgaggagccacctgacttctgctgtcccaagtgccagtatcaggcc ggacgtgcccgggaccgtgcagtctgcgctttcctctcccgcctagcccaggatgaagggctgggtggccacaact gggatgccacctggagccccacccaggagctggccgcgcaccttacgcttcagctgttgatccgctggtcccctctttt 65 taatcootcootottootcocaccoggcactggggaagtcaagaatggggcctggggctctcagggagaactgcttcocct cacgcgtccgcgagaaggaggactcgcaagcctcggcggcccggaaccggcctcggactgtcgacggaacctgaggccgc ttgccctcccgccccatggagcggcccccgggggctgcggccggggcggggccctgggagatgcgggctgggctggg caccggcggcttcgggaacgtctgtctgtaccagcatcgggaacttgatctcaaaatagcaattaagtcttgtcgcctag agctaagtaccaataacagaagaacgatggtgccatgaaatccagattatgaagaagttgaaccatgccaatgttgtaaag gcctgtgatgttcctgaagaattgaatattttgattcatgatgtgcctcttctagcaatggaatactgttctggaggaga tetecgaaagetgeteaacaaaccagaaaattgttgtggaettaaagaaagecagataetttetttaetaagtgatatag 75 ggtctgggattcgatatttgcatgaaaacaaaattatacatcgagatctaaaacctgaaaacatagttcttcaggatgtt ggtggaaagataatacataaaataattgatctgggatatgccaaagatgttgatcaaggaagtctgtgtacatcttttgt gggaacactgcagtatctggccccagagctctttgagaataagccttacacagccactgttgattattggagctttggg ccatggtatttgaatgtattgctggatataggcctttttgcatcatctgcagccatttacctggcatgagaagattaag aagaaggatccaaagtgtatatttgcatgtgaagagatgtcaggagaagttcggtttagtagccatttacctcaaccaaa ጸበ tagcctttgtagtttaatagtagaacccatggaaaactggctacagttgatgttgaattgggaccctcagcagagaggag qacctgttgaccttactttgaagcagccaagatgttttgtattaatggatcacattttgaatttgaagatagtacacatc

gcgtgaaactggaataaatactggttctcaagaacttctttcagagacaggaatttctctggatcctcggaaaccagcct gggccatttgcttccagaagtttatctgattgtgtaaattatattgtacaggacagcaaaatacagcttccaattataca gctgcgtaaagtgtgggctgaagcagtgcactatgtgtctggactaaaagaagactatagcaggctctttcagggacaaa gggcagcaatgttaagtcttettagatataatgctaacttaacaaaaatgaagaacactttgatetcagcatcacaacaa ctgaaagctaaattggagttttttcacaaaagcattcagcttgacttggagagatacagcgagcagatgacgtatgggat atcttcagaaaaaatgctaaaagcatggaaagaaatggaagaaaaggccatccactatgctgaggttggtgtcattggat acctggaggatcagattatgtctttgcatgctgaaatcatggagctacagaagacccctatggaagacgtcagggagac ttgatggaatctctggaacagcgtgccattgatctatataagcagttaaaacacagaccttcagatcactcctacagtga cagcacagagatggtgaaaatcattgtgcacactgtgcagagtcaggaccgtgtgctcaaggagctgtttggtcatttga gcaagttgttgggctgtaagcagaagattattgatctactccctaaggtggaagtggccctcagtaatatcaaagaagct gttaacagaatqaqttgtcacttqttcactqtccccaaacctatqqaaqttqttqctatacatqttqqaaatqtqtttt CCCCCatgaaaccattcttcagacatcagtcaatggaagaaatggctatgaacagaaactacatttctactatgatcaga 20 ttgtttgaatatttgttttaataccacagctatttagaagcatcatcacgacacatttgccttcagtcttggtaaaacat tacttatttaactgattaaaaataccttctatgtattagtgtcaacttttaacttttgggcgtaagacaaagtgtagttt caagttctatttcttgaagaataaattctacctccttgtgttgcactgaacaggttctcttcctggcatcataaggagtt ggtgtaatcattttaaattccactgaaaatttaacagtatccccttctcatcgaagggattgtgtatctgtgcttctaat attagttggctttcataaatcatgttgttgttgtgtatatgtatttaagatgtacatttaataatatcaaagagaagatgc ctgttaatttataatgtatttgaaaattacatgttttttcatttgtaaaaattggtcatttgtttaaacaatctttcatg tcttgtcatacaaatttataaaggtctgcactcctttatctgtaattgtaattccaaaaatccaaaaagctctgaaaacaa agtatggtatatgcacaaaactacttttctaaaatctaaaatttcataatttcgaaacaacttgccccaagggtttcaga gaaaggactgtggacctctatcatctgctaagtaatttagaagatattatttgtcttaaaaaatgtgaaatgcttttata 35 ggcctgggaaatgaaagagcgccttgggacaggggatttggaaatgtcatccgatggcacaatcaggaaacaggtgagc agattgccatcaagcagtgccggcaggagctcagccccggaaccgagagcggtggtgcctggagatccagatcatgaga aggctgacccaccccaatgtggtggctgcccgagatgtccctgaggggatgcagaacttggcgcccaatgacctgcccct gctggccatggagtactgccaaggaggagatctccggaagtacctgaaccagtttgagaactgctgtggtctgcggggaag 40 aagccagaaaacatcgtcctgcagcaaggagaacagaggttaatacacaaaattattgacctaggatatgccaaggagct ggatcagggcagtctttgcacatcattcgtggggaccctgcagtacctggccccagagctactggagcagcagaagtaca cagtgaccgtcgactactggagcttcggcaccctggcctttgagtgcatcacgggcttccggcccttcctccccaactgg cagcccgtgcagtggcattcaaaagtgcggcagaagagtgaggtggacattgttgttagcgaagacttgaatggaacggt gaagttttcaagctetttaccctaccccaataatettaacagtgtcctggctgagcgactggagaagtggctgcaactga tgctgatgtggcacccccgacagaggggcacggatcccacgtatgggcccaatggctgcttcaaggccctggatgacatc ttaaacttaaagctggttcatatcttgaacatggtcacgggcaccatccacacctaccctgtgacagaggatgagagtct gcagagcttgaaggccagaatccaacaggacacgggcatcccagaggaggaccaggagctgctgcaggaagcgggcctgg cgttgatccccgataagcctgccactcagtgtatttcagacggcaagttaaatgagggccacacattggacatggatctt gtttttctctttgacaacagtaaaatcacctatgagactcagatctcccacggccccaacctgaaagtgtcagctgtat ccttcaagagcccaagaggaatetcgccttcttccagctgaggaaggtgtggggccaggtctggcacagcatccagaccc tgaaggaagattgcaaccggctgcagcagggacagcgagccgccatgatgaatctcctccgaaacaacagctgcctctcc aaaatgaagaattccatggcttccatgtctcagcagctcaaggccaagttggatttcttcaaaaccagcatccagattga cctggagaagtacagcgagcaaaccgagtttgggatcacatcagataaactgctgctggcctggagggaaatggagcagg ctgtggagctctgtgggcgggagaacgaagtgaaactcctggtagaacggatgatggctctgcagaccgacattgtggac 55 actaagggaaaaacctcgagaccagcgaactgaggtgacagtcaggaaatggtacggctgctgcttcaggcaattcag gcttcgagaagaaagtgcgagtgatctatacgcagctcagtaaaactgtggtttgcaagcagaaggcgctggaactgttg cccaaggtggaagaggtggtgagcttaatgaatgaggatgagaagactgttgtccggctgcaggaggaagcggcagaagga gctctggaatctcctgaagattgcttgtagcaaggtccgtggtcctgtcagtggaagcccggatagcatgaatgcctctc 60 gaactggtggctgaagcacataacctctgcaccctgctagaaaatgccatacaggacactgtgagggaacaagaccagag tttcacggccctagactggagctggttacagacggaagaagaagagcacagctgcctggagcaggcctcatgatgtgggg ggactcgacccctgacatggggcagcccatagcaggccttgtgcagtgggggactcgaccccttgacatggggctgcc tggagcaggccgcgtgacgtggggctgcctggccgcgggctctcacatggtggttcctgctgcactgatggcccaggggtc tetggtatccagatggagctctcgcttcctcagcagctgtgactttcacccaggacccaggacgcagccctccgtgggca etgeeggegeettgtetgeacactggaggteetecattacagaggeecagegeacategetggeecacaaacgttcagg tecaatteaaatettteagggeagagteegägeagegettggtgaeägeetgteeteteetgeteteeaaaggeeetget ${\tt acgagcatggcccttgtgatccaggtggggaaactaaggcccagaagaagtgaggaccccgcagactatcaatcccagtct}$ 75 aggcctctgtgaaagcccaggtgacgtccttgctcggggagctgcaggagagccagagtcgcttggaggctgccactaag gcagcagcacagcgtgcaggtggaccagctqcqcatgcagggccagagcgtggaggccqcqctccqcatgqaqcgccagg ccgcctcggaggagaagaggaagctggcccagttgcaggtggcctatcaccagctcttccaagaatacgacaaccacatc aagagcagcgtggtgggcagtgagcggaagcgaggaatgcagctggaagatctcaaacagcagctccagcaggccgagga

aaggageteetgeaggageagetggageagetgeaggggagtacageaaaetgaaggeeagetgteaggagteggeeag atgecacetggagccccacccaggagetggccgcggcacettacgcttcagctgttgatccgctggtcccctcttttcgg tccctcctttcctccacccggcactggggaagtcaagaatggggcctggggcttcagggagaactgcttcccctggc agagetgggtggcagetetteeteecaceggacacegacegeeggetgtgeeetgggagtgetgeeetettaceat gcacacgggtgctctccttttgggctgcatgctattccattttgcagccagaccgatgtgtatttaaccagtcactattg gaatteetetggteeteateeaggtgeggggaageaggtgeeceaggagagaggggataatgaagatteeatgetgatga teecaaagattgaacetgeagaeeaagegeaaagtagaaactgaaagtaeactgetggeggateetaeggaagttatgga aggaaccagctgcagagatcaccctgcccaacacagactcggcaactccgcggaagaccagggtcctgggagtgactatg ttaggtatatetttggaetteeteeeetgateettgttetgtteegttgeeageateatetgattgtgatattgaaggtaaa 20 gcaagttgaggcaatttcttaaaatgaatagcactggtgattttgatctccacttattaaaagtttcagaaggcacaaca agaaaataaatctttaaaggaacagaaaaaactgaatgacttgtgtttcctaaagagactattacaagagataaaaactt 25 gttggaataaaattttgatgggcactaaagaacactgaaaaatatggagtggcaatatagaacacgaactttagctgca tcctccaagaatctatctgcttatgcagtttttcagagtggaatgcttcctagaagttactgaatgcaccatggtcaaaa aaactatttettatatatatgtgaacatttateaateagtataattetgtaetgatttttgtaagaeaateeatgtaaggta tcagttgcaataatacttctcaaacctgtttaaatatttcaagacattaaatctatgaagtatataatggtttcaaagat 30 tcaaaattgacattgctttactgtcaaaataattttatggctcactatgaatctattatactgtattaagagtgaaaatt gtcttcttctgtgctggagatgttttagagttaacaatgatatatggataatgccggtgagaataagagagtcataaacc (SEQ ID NO:12087) 35 Cagtetteatacaattatatggatgaateteataaaatgetgagttaaagaaateagaecaaagaacatataetgaaaga ttctctctatatacaaagttcaaaaataggtggaccaattcatggtggtgttagaaatcagaagagaggctacctttgtg gggaggggacagtttaatgcccagaagcggtaaataaggaatcctctggggagtggtaatgatctggatgctggctacag gatgtgttggttgtaaaaatgcatttttttatatctagctttttccatgtgtatattatacttcaaagaagttcagttaa taattteteatgteaetgtagagtageteagttageeceageaageetetggettaatettgttttaeettaageeatea gtcatttacaagtaggaaaattcacagggaaagttagagtataaaatccagaatgaaggtttactgggtaagagtctctc cattttccaaagcccgtttatttcttgattccagttcttaagaagtctcagcattgtgtctttttcatgtatcttacaag aagacagcatgtgcttctaacacctgatacattgtatctaccagcacttggtaaacagaaaagaaccacatttttcttgt aggagaaatttggtgcctatttcctaccaggcaccaataagtgggaccaataggtgggattaaagatacagtagaaagta 45 ccctgagaagtgcagaccaaagccagggaaggctctgcaaagatgtacaaatggaagtcaccttaataacctctgactgc tgogoataatacatttcactcaaaagaggggttaaacaatggaacagaatacagaggccagaaataatgctgaacactga 50 acttaaatctaaaaccaaaccatataaaaaccctggaagatagcctgggaaataccattctggacataggacctggcaaa gactteatgacaagacaccaaaagcaatagcaacaaaaaccaaattgactaatgaaactaatgaaactctttagttgtac aacagatagtttatctgtacaacaaaataaactatcaacagagtaaacaacctacagaatggaaaaatttttttgcaaact atgcatctgacaaaggtctaatatccagaatctataaggaatttaaacaaatttacaagcaaaaaaatgacctcattaaa 55 aagtgggcaaaggacatgaacagatgcttttcaaaataagacattcacacatccaacaaccatatgaaaagatgtttaac atcactaatcattagaggaatacaaatcaaaagcataataagataccatctaataccagtaggaatgactactattaaaa agtcagacaataacagatgctggtgaaggttgtggagaaaagggaatgtttatgcactgctagtgggaatgtaaactagt tcagccattgtggaagagagtgtggtgattcctcaaagaatgtaaaaccgaactgcctttcaatccagcaatcccattat 60 cagaatagtatgcagccataaaaatgaacaagatcatcatgteetttgcagcaacatggatgtagttggaggccattate ctaagcaaattaatgcaggaacagaaagccaaataccacatgttctcatttataagtgacagctaaatattgagtacaca tggacacaaagaagggaacaatagacatgggacctacttgagaatagagggtgggaggaggaggatcaaaaaagtacc cataggacactgtgcttattacctgggtgatgaaataatttgcacaccaaacccctgtgacacacaatttacctatatag aaaacctgtgcatgtacccctgaacctaaaagttaatggtggggggtgggggttaagctactttgtggtataaatctgag cattcatattaaaataaaatatttacctcattagagtaattaacatttattaagcaaagagccaagtaccttacacacat gattaaatgcatggggcatgccatttgactagaaactggaagcatcaggatttaaactcagttctgaatggttttgtagg ctttgttttttccacattatagcatggcctgccatgaagaacaggtcctttctggtgtttgtcttgtttggtttaagtga 75 ctttaacatcttgcctttactttataacatttatcacaqcaqtcatqaqataatgatttacatqqtcattqttaqtaaqc taatagetaagtgcatgaactetggagetageeteeetggattttaateeeagatetgteactgaceagetgageaatae taggtaaattgctcttgttccttagtttcttcatctgtaaaatagagataaaaataataccacctcataggattggtgt 80 gagcattaaatgagcatacgtatgtaggccacttaacaacaatgccttcacatactgaacacaaatatacgagctgttgt aacctggtatacagtgtgCattcaatagttgttgactattattactagtggcatttaacaaatatctgttaaatgagtga

tttatcaataaatagtagtatttttgtataagtattacatataatatccaggccactgctttgcataacccaaaagggg caccattcatgcagaatacaacataaatggtgtccctggagcagtgcagtataggaaccctgaggggacctacagtatac tttatagttcatagattacaaattatccctttatcagagtctctcaaggttggatgtatttgaggtccataagagcaatt taggattaacagtagctgcagaaaccatctgcagtgatattctcattttaaatccgcgggaaagaagacagctataaact gggaagtaaatgcctctgaataagcaagttaatgtcagtagttgtactgtatgcatattgatgaacaatagaggaaccaa 10 ctgctattgttgatgcctggtgcatgaatcaggactccagcccacaagttttcccagaactttcttatggccatcatctt aatcttgggttaactataactagaatattgactcttcctctgtggaagaatcagccaatcacatttgtttacatcagttc ccctgaagaagaaaaatacactgatgttgcagcaagacaaatttaagctagatgtaaataacttcctttagcctgtaatg ctaqqctaattacatattggaactattttttcagggaagaattgtgtagggtttcagggaagaattctgaagaaaatata 20 gagctgaaatgatcttgcagctcactgaaactgcagggtttagatccacactgatactcgttctattatcactgtaatga aggctgatggaataagtaaaaatgttttgtattagtatgtttttacacttatttgcaaggcataaataggttaggttttg atcttaatttaattctaacatgtattgtgcacaagctgtgagcagttttcaggagttaggtatctggccatgactgattt 25 agccaggcgtggtggtgggcgcctgtagtcccagctacttgggaggctgaggcaggagaatggcgtgaacccgggaggtg 30 gacacagctgcaaacgattccccattaaatatgatgtttcttgcaatgttttggaaggtactcctttttagtaagggaaat cccctcttctggcttgctgaaagttttttctttccattttaaaaatcgtgaattcctttttgcaatattgaggtggttat atggtttctcttctctaatctgttaatatggtgatttaatggttagaaattttctaatgtaaattccactcatattgcag aattttccttgttattcttttgctgcaccccaaattgttgatatttctattgtctaatttctattcaattagaatacttt ggctttgaaatatatgtacattgtggaatggctaaatttagcttattaatgtatgcattatctcacatacttatcatttt ttgtggtgagagctatgtgacttttgaacttatgagttatttaaatatttttaaattattataagcatattgggattttaag taatttaccttttattattaacttataacaagtagaacagttaacctgtatgattctacatcattgaaatttattgaca tttgcttcatagtctattatatggtctacttttgttcatgttacatctgtagtagaattggctaatagttgagtaaagta cacatatgtctatgaaatcaagtgtaatccagagaaaaagagaaatttactgaatatattgttctaggtgctattatatg aaaaaaaagctagctctactatttgtaaagaatgaagcaaagatacaaatgaaggcccacatatcctataactagatatt agetggggttcgaatttagaaatctttgatgcttcagagtccacactgaaatgtggaggcacatagtgagttggtcccca gccttcagtccacccaccttctctttactaaatcacctttcacatacatgtatgaacaccccagcctccaagtccaaacc ctaaacaaatgggacacccttgtgcatacacagagacacagcccatcctcaggaaaaacctggaaaaagtccatacaagtt ctggaagcaagcttgggacggtttcagtagtgtggtctataagggaggcctcagaagacaggttttcttaattctgtgaa cttctcccacagtagaaagggtgctggaggagggtcagagtgaggacttctaaagcacaggtcctgagtaggggccactc ttgcccaagtctaagaagggtactagaatagcacactactactagatactagaacccagatacaagcacaggtcttctga 55 ttctaaattctttacatgtattatacaactgccatataactgccatatgagggatgtaccctcattgtcaccattttacc qatqagaaaactggcataaaacgtttaagtaacttgtccaagttacagagcttagtgaagccacaatgttgctcaatttg ctctcaaacttcaaagggatgggaaggacacctaagtcatagagtctttaagaatcagagctagaaggaatcttagatgt 60 tatctagtcagcctcctcccattacagtccaagagaagatggccctgagttacttgtagctatttttgcatgtgaattgc aagtgaatatacattotactgaagataaaagatatttaaagatatcgctggatataggaacagtggttttaaatctctag gctttaacttttctcagaacaagaaatcctttttggttttaatctalatgcacatctgtattttctcaattatcgggta gtaaaatataacttttcttctgtaatattttttaactttaatgagtgttcctcataatagaaaagtttggaaaccattgc tatgggtatatacettetaaagggatagtaatteetetagaatatteatetaatgeteeagaagtaattageacaategt 65 gcaagtctgtgcatcatcaactatacattctgcctgtttactccaaatccacatgaaactgattatacagtcaaaggcga gcccagtggagaggcatttttggagacttcctggtacattgagacagggtcggccagtctgcgttagggtcttggtcaaa actgcattictgaaactaaactcagattgctttcttttaaggggtcagaactgattcaaatctacatttttaaaagcctt agatgtggggcttttcctattcccagtctccgctattggtctttgtgaatccacaggcaatttggccacatccttgactc tctcttatattaagaattaaacagctaagttcatgcagaggaaatataacaaaggagggactttcctacaagatctttga aaaatggaacatttgcataagrcatatttagccagaactgttgttttatattttcctttctgaatactttgttacacctc 70 ctcccagccaaccccccccctccctgaccccaactagtcagagaccaaagccttcacaatggtttacacttgaaccttcc accetetygacacettaatetteceagaataceattgtgateetgttecactettgeteaagtttteceagaaactagagt acaaactttataagetttagagttgaaagccactetatetettttteateeceaggtetetgecaaggcagtataaeetg tccaacatctctaacttcaataccttgtcttagatactagactctcctcctggtttctaattaaacctgatctaggatctaattttgcctctgaattctgtcgccatttgccaagtgatctcttcctcctctgagccgcagcatctctgagcttgcaca cttagcatagccatagcacacacaccttagcttgcagttcagggtgtttaccttccccttcccttccagatgctggatcc ccagggataggaactctgcccttatgtgtccatagccctggtagtatgtcttgcagtcgtacattttcagcaatgttt aattggttaattgaagacaactgtcccatgccttaagcctctctttttgctaaacatgcctgtgtcctttgtcattgaac aactattttgatctattttcttcctgacataggggtcagttccgaggatgctgaaatcaagagacatagcttattctctc aaaattgctttcaagagtgattttgttgttgaattgagaactggctgcctacttttggactaccacttcagcaagagtgt tiqaaaccaaatctattctaaqtaattttttattcccttttctctatggcattagacacacagctcttttaaactacctt

tegttatetattaaacagacatteagtaactetatagacactgtetagctatatgaacttagacaaactaatatetetga gcttcagtttcttaaaatttaaaatgaggacaataccatctatggccggggattaaatgctatgaggaatgtaaaccaga tgtcaggtaccatctctctaaaatccagataaaatgaattaaaaatactggccgcaaaccctctctaagagttctcaaaa ttctcagagagcttaattttcatgctcaccatagcaccgattttcttctaaatattttgtttctaccaaaatattttgtc ccaattttgccttttatggctatttcttcatatccactttcccaaactaaagaagcagcccttcaccttaaactcctcc ttcaaagcaacctaaatacaggtctgggtttgtattcctagtgggatgttacagaggttagtgtgatgcagaggaggagt catgetgtttaaatccatactaqtccccagaggccaggetgcttctgccacccctacccctcccgccacagagctcttca gcagaqaaaattaactcctctaagttttcttaacacagagtgccttaattacatattactattgtttgagttcctgccaa cactacgtctgtagggtcacacctgctatattagaggcttatcaaaaaaagatagctttctcctaaaaaagggatttggat ggtacttattctgtcacccagactgcagtgcagggatgcaataatagctcactgcagcctcaaagtcctgagttcatgca atcottotgottoagotocotgagtagotaggactacaggoatatgotactotgocoagotactittaaaaaaataatta gggatggggtettgttgtattgcccaggetegtetcaaacttetggtttcaagcaatcetectgeettttacetecetaa 15 tcatcattatggttactaccagtgttaaaacaattggtattgaaaacaccactaccagatcaagcttcaaaccaagatgt caagtaaatattattgtcagacctctgagcccaagcctgcaggtatacacccagatggcctgaagcaagtgaagaatcac aaaagaactgaaaatggccggttcctgccttaactgatgacattccaccattgtgatttgttcctgccccaccttgactg agggattaaccttgtgaaattccttcccctggctcagaagctccccgactgagtaccttgtgacccccacccctgcccac 20 aagtgaaaaaccccctttgactgtaattttccactacccacaccaaatcctataaaacagcctcacccctatctcccttcg ctgactctcttttcagactcaacctgcctgcacctaggtgattcaaaagctttattgctcacacaaagcctgtttggtgg tctcttcacacagaccatgtgacatttggtgccgtaactcagatcggggaacctcccttgggagatcagtcccctgtcat tttaaattgggtaagtggcctctttttactctcttctccagcctctctcactatccctcaacatctttctcctttcaatc 25 agtaccactttgcctgggtggcaagcaccacctctcctggggggcaagcaccacctctcctggggggcaagtaccccca accccttctctccatgtctccaccctctcttctctgggcttgcctccttcactatgggccaccttccaccctccattcct cccttttctcccttagcctgtgttctcaagaacttaaaacctcttcaactcacgtctgacctaaaacctaaatgccttac tttcttctgcaataccgcttgaccccaatacaaactcaacaatggttccaaatagcctgaaaacggcactttcaatttct ccatoccacaagatctaaataattcttgtcgtaaaatggacaaatggtctgaggtgcctgacatctgggcattcttttac acqtcqqtccctccctaqtctctqttcccaatqcaactcatcccaatcctccttctttccctcctgcctgtcccctcag tcccaaccccaagtgtcgctgagtctttccaatcttccttttctactgacccatctgacctctcccctcttccccagact gctcctcctcaggtcgctccccgccaggctgaatcaggctccaattcttcctcagcgtccgctcctccaccctataatcc ttctatcacctcccctcctcacacctggtccagcttacagtttcattctgtgactagccctcccccacctgcccaacaat ttcctcttaaagaggtggctggagctaaaggcatagtcaaggttaatgccctttttctttatccaacctctcccatctc agttagtatttaggctttttttcatcaaatatgaatacctagcccactccatggctcatttggcagcaactcctagacat tttacagccttggacccagaggggccagaaggtcatcttattctcaatatgcattttattacccaatccactcccaacat taatagagtagaggcagccaagtagcaacatatttctgagttgcaattccttgcctccactgtgagagaaaccccagcca catctccagtacacaagaacttcaaaatgcctaagccacagtggtcaagcattcctacaggacctcctccatcaggatct tgcttcaagtgccagaaatctggccactgggccaaggaatgccctcagcctgggattcctcctaagccatgttccatctg tgtgggaccccactggaaatcggactgtccaacttgcccagcacccactcccagagcccctggaactctggcccaaggct 45 tcccttattaggctgagacattttaaccaaattatttgcttccctgactattcctggactacagccacatctcattgctg cccttcttcccaacccaaaagtggcaactcctttgccacttcctctcatatccccctaccttaacccacaggtatgggac acctctactccctccctggcaacaatcacacctcattactatcccattaaaacctaatcacccttacctgggtcaacg ccaqtatcccatcccacacaqqctttaaagggattaaagcctgttatcacttgcctgttacaacatgtccttttaaagc ctgtaaactctccttacaattcccccattttacctgtccaaaaactggacatgccttacaggttagttcaggatctgtgc 55 tct,cttcactttcacttggactgaccctgacacccatcagcctcagcaacttacctgggctgfactgccgcaaggcttca tggacagccccattacctcagtcaacccaaatttcttcttcatccattacctatccaggcatagttcttcatgaaaaca cacgtgctctccctgctgatcatgtccagctaatctccccaaccccaggactggcaaattgactttactcacatgcccca aatcaggacactaaagtacctcttggtctgggtagacactttcactggataggtagatgcctttcccacagggcctaaga 60 aggocacogtggtcatttcttcccttctgtcagacataattccttggtttggccttcccacctctatacagtctgataat ggacaagcetttactagtcaaagcacgcaagcagtttctcaggctcttggtattcagtgaaaccttcataccccttaccg tcctcaatccttaggaaaggtagaactgattaatggtcttttaaaaacacacctcaccaagctcagcctccaacttaaaa aggactggacagtacttttaccacttgccattctcagaattcgggcctgtcctcgaaatgctacaaggtacagcccattt aagattctgtatggacgctcctttttattaggccccagtctcattccagacccagcccaacttgaactgtgccccaaaa 65 ${\tt actigical coctace acticities to the constraint of the constra$ tacagtgctgatttatacttttcctccaaaccatcataactgatatctcctggttttacctcaaaccgccacccttaagt ctctcttaaagtggatagaagatcttcagtgacaaggtacactccaatactttcaccctaataaagccctattctttacttttattcttcacctcttattcttgttcccattcttatgccactctctacctctccccagctatctccaccaccaccattatcaatc caccgagtcctcaatttactcactgctaaaaaaggggactctgcatatttttaaatgaagagtgttgtttttacctaaat ctgaacccccttgggcactctaattagatgtcctgggttctcccgattcttaatcctttaatacctgtttttctccttct cttatgcagaccttgtgtcttccatttagtttctcaattcatacaaaaccgtatccaggccatcaccaatcattctatac aaaaggcagaaatgaaatccacaggcagacagcctgatgccacaccctgggcctggtggttaagatcaacccctgaccta atcagttatgttatctatagattacagacattgtatggaaaagcactgtgaaaatccctgtcttgttctgttcctctaat gacccccttagagttgtaagcccttaagaggaaaaggaattgttcactcggagagctcggtttttgagacatgagtcttg ccaatgctcccagctgaataaagcccttccttctttaactcagtgtctgaggggttttgtctgtgtcttgtcctgctaca gtttcatctaacaaccccataatatcaccccttaccacaaaatcttccttcagcttaatctccccactctaggttctca cgccacccctaatcctgctcgaagcagccctgagaaacatcgcccgttatctctccacaccacccccaaaaattttcact gccccaacactttaccactatttcgttttattttcttattaatataagaagatagaaatgtcaggcctctgagcccaag

cctgcacgtatacatccacatggcctgaagcaagtgaagaatcacaaaagaagtgaaaatggctggttcctgccttaact agaagctccccactgagcaccttgtgacccccacccctacccacaagtgaaaaaccccctttgactgtaattttccact acccacccaaatcctataaaacagccccaccccatctccctttgctgactctatttttggactcagcccacctgcaccca ggtgattcaaaagcttcattgctcacacaaagcctgtttggtggtctcttcacaccgacacgcgtgataattattatatt acttttaactaaaaccctttcagagtctcgcagggaaggctgtatatatctcataaaatgttggggcccactggatcaga caaggccacaaaggccaaagggaagtaaagatctcattatttctcctaataatttccctgtcctttgtcataaatggtgg gtaggctgttatggtgatggcagattttctttccataaaatgtccataataggacatttgaacagaagggaaaaatcaaa 10 gtttaaggggaaaaatatagatgtctaaagaatacatttattcattttccacagtgcaatttggacaagaagcctctttc gtatgtgctactatgcccagctaattttttaaaaattagattttaatttggtgaactatttctgtaggaaactacaataa atgaacttggtactctgagtaaagcataggaggagttatttcataaaatgtggagcacaatcatgtgacaaagataatgg gatececattteataaataaatetgaagtteagagagagtaacaaetggeeagggteacateaeggagacagaggeaggg ttoccactgatgcctctgactocctgtoccaggcccttcctcctccgcaagcagaagtgcagggggcagagctgaccct gtgcagtgaaaatctgagggctgagttcctattggaacacaagtgaaagacttcctggcttctaatctcaggataaggac tcagagetccatetgttccageettaggataagaaccagaatettacaccatgaaagcatgaaaggtaagatttgagtga ggaaaaaaaaaaaaaagcctgtgtttcagattcagttcacaaagcagtttcatacttaaggtaccatcacaataaccct 20 ggagaattttatattatgaatcttgatttatgggattactattatgtaattcctaagatcatataggaatcctagagctt gaatatagaactttatttttaaatctatatacatcataattacaaggagtagtgtccatttgggttccttggccctgatg tgttagtggaataaacatttttgtcagggttgccatgtgtgtctgtgcacgtgtgcactgtacacctccaggggatgtac cctaaaccacatgaatgtgatttgcacatccaagatttacagtgtactatagggagaatcttttgcaacagcttttgcta 25 taatacagaatctgagatgtctttgagaaagaaaagtgtaatcattaccaaaaattattctcataatgtgtgcaaattt 30 gatgaaatttaaagaatatgtagaatctaggtaagtggataaaaggtctgggggaaggggaaaggaggatttcattgt gaatcaaggaattteteeacetgttttaactetteeatatgacatcaaagagatgteacttgeagetagcattteagtga tgttttcttactaataatatcgtgataaaagaaacattgactataagaaataggaatgggtctcataaaaggaaacagca 35 aagtcagccaactgaaaaagagaggtggctgaagaaggtggggaggctgaagccagttaaataggatggtccaattcaca gagcgtagacttttttgaactttctalaagagtgtacctccacaglatacagaagacgacgtgaaatttgatctgcaagaa ${\tt actgaaacaagagtcaagaacaagtcagccatctttatattccacatgaatcctttccctttatggtcttattt}$ gtttctcctcagaaaagacaaaaagctgagctgtataaacacctgtgggctgggggttgagggataaatgaggggcgaaa agggcgatttaatatgggtcattcatactgaaagaaaaacaaaagataataagagtttaaaaaattgcaaaacttggagtg ttagtagtaaaggtaaatattcattagagatgagaagaggagcaaggaaatgctttcagctggaaatctcagacaagagg ccaggctttaggaacctctgaagatgaacaaatgtaagcacactagtagcagcacttctcagattttcatgtgcttac
cactcagagatggtgttaaaatgcagactctgattcagtaggtctgagtggagcctgagattctgcaccctaacaagct
ctttagtgatgcttatgccactggcgcacagaccccacttggagaaatttttgtggtgcatacggtctttgtctccagat 50 tatttatttttgagatggagtctcactctgttgcccagtccggagtgcagtggcaggaggcagctcatgcaaccacggc ctcctgggttcaagcgattcttccgcctcaacttcctgagtagctgggaatacaggcacgtgccagcacacccagctaat ttttgtätttttagtagagatggggtttcaccacattggccaagctaatctcaaactcctgacctcatgatccacctgcc ggaattagaaggcatgcttaaatggaaagtgaaattggagaaaatttaaactcatgaaatagtggtggttataaactcgt 55 gataaattatatcctgggatataatttaatgagatggtaacacatttagtttaaagaaataagtgacactttttttgtgt gacacaactgtcttattcttggaaaggacaaggagagaatgaaatatggtatgtcttcacagcacctttcaaagggagaa ccagattctgaggagctggtctcatgatgaactgtcagggtaaaccacagttcagcagctgcaaatgtgcttgccaaaat agagacaaaaaaatgtttctgaaaacaaaatttcacatatgccctcctctgaggttggcatcatatcttcctgtgtatct tgggtgtagcttctatcctgccagaatttagacagtagaaaccaaatgaggtgataaacagagtcattttgcagaagagt aaaaaaaaaccacgttactggaaaaggagggtgcctgggacttgccactctaagctggtagtcaagggtcttgagttcta aaagcatacgcgttaaagagcatgattcctggatccaaatgagtatggatctcagcattgccatttattgtgacctcaggc tattttattctttatcagtaatgaagatgttcatagacccttctcccacagacttaaaggcatat ttcatgatttaagacatgtaaaccattcataacagtatacaacatggaattaatatttgataaaggtttatgattattg ccaccaagatcatattcagacctagaattctgtgattcttatgaattaatacagccttggtcaataaatgagagctgggc aatcctatctattcttcataagcaaccttctttataacattttctataaccaccaagccaaatgaccttttccttaa atatagcacccattggccattaccatgctctgccttgtattttttctgattttttctatattcctgtcttaactcc ccagctaggtaataattttcctgaaatcagggaccaggctgactcctcttgctgtctcaagaaagcttagcagtttccaa 75 cacaaaaatgttcaataaacaactattaattgactgattataaaaaatcagtgaaccattaaacttaatatagcaatttg aaaatctagttgatctgcttccatctagtggcaattaaaacaggtggttccggtagccagaaaacagctctgggtagatt ggagaccagccagagaaagaagcctttcctcactagactccatttgcactagtaaagagaagacagagtaattaaaaag aataaaaagaacctccactgatcgtacatcctcatccagttacccctgccccacttctcccttcacagccaaacattttaa aagagatgactgcttgttctgtctctactttctcatcctcagtaatgctcaatgcttggccgtctgacctctgtcttgat

aaccgttcccctttctttgtttccttggcattcattaccccacactctttctccttcttcttctccttgcctggcaacat gtttattttacttaaactctccttcctaaaattccagagcaagtcactaaaccctagatactgagaaatatttttccatc ttcatttctgccaggtgggccatcaactttcacatgtctgcatctcctcccactgtgctatttctccagtagaagaaatt gcttgttcaattgaatatttcttaaataatatttaagaacaagaagaacacaccacaatgtttttaaccctcagaaaa attcagetecactageaccaaaaagcacagetetgaaaggaagetagtagatttateacettatetggtcatttggatga 20 cagcagatgtggaaactcctcgccactaataaaacttaccttctcttggatttcttgcctgaaaatagaaaatagagaaa aagtatattaggtatttgttaggtggaccctatctgtgtcaaaggagatttgaggaactggcttaataaacagtggtaga cactaatacagaacagacatgttgatgcagatgcctcctgaggttccattccattctccgtgctactcaagaagacagaa 25 geagattetteeettgagggaeagetgetaataetgtaaaaetatgtgeeattaeageteaeageateatetetatgaga atccacaagagaatttcacittggtcttgttggtaggaattgtgcagcctcatctgagtaactaatgtgtttttatctta $\tt caaacacaaggaatatcacatggttctcctttgactggctgtaaggaaactcagagctagatctgagaccctctcctaccataggaatatcacataggaatctgagaccctctcctaccataggaatatcacataggaatctgagaccctctcctaccataggaatatcacatagaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacataggaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatatcacatagaatagaatatagaatagaatagaatagaatatagaatagaatatagaatagaatatagaat$ aagtatataaaactttgtgacatacatttttgtgccataacttcaaccttggttccaaatgatttttgtaccctaagttt ctgttaaagaggcataataattgtatcatcctcattgggttgataaaataaaatatttccaagtatttagttcaggtcct agcacgtagacagtgttgcattactgttttaatcctttaaagtattaaagactactatttgaaatcttttcttctaaaat aatattttttttagggatgatgaacctaacagcaatagatgagtaagaatctgttcctactgagagagtttcattttgaa 40 caaccgaggaaaaaaccagttcacaaatctgaagaccagtgattttagaagatgtatctggactggagtctaatctctga ctctgggtcctgctgatatggtatttttgggatttggcctaaaacatcattgccctggtttccttatttaccaaacaggg ccaatggtagtgactaatcagaaaatgataatgcctggtgcacaaaatgtgtctagatgagcccatgcacaaggacacat gtttctggaactgttccttattcctttcctaaaagaaaggaggaaagtctccatactaagactactagggcagggaca aagtgctagagtcagaagattcatctgaggacagaagaataggggtgaaggctctagtcacttcattggctaccatgctc ctgggactacatgtgcatgctaccatgcctgactaattttttgtatttttgtagtagagatgtggtttcgccatgttgcccag gctggtcttgaactcgtgggctcaagtaatcctcctgcctcagcctccaaaagtgctgggattagaggtgacagccaagg tgcctggcccacagatgaagactatttaatgttatcttaaagataccctaagcttcctaccaagccagtgatcttttggg gcttctgttttctttgttggcataactgtaactagcctaactgccogttatctgtttcctgtttgccccacactgattcc 55 cacagcagttttcaagttatcggtttgagatcttgtacagaaatgactccaaggtaaaaaatttaaaaaccaccctcta gattotacaaacacttattaaaagattttagaattoggaaataaatagottoottattaaggtgacttacagooocaaag tecttaaaattatttagacaatagecaeettateeeagggggeagtgtgtaataaeeeaeeetgttetetateegteagt tctgccatcatcgcccaaggtaggaagaaagacaggacaaccggggtcaagatttgaagtctcaatggaaagaataatca 60 gtggttggagaaaactgtcattcttcttttgccttaatgcagtacttgatacttatacttagtactgtatagtacttagt actgtataatactataagatagtgagattcaatcagcacagaatttctaatagcaagggcagagacattttaactgctca gtgctctcaggttatacatagctaatgaagttcttgcatatcaacaatccccaccccctcacacactttgtctttctgg attggttagaaacttacctagcgcccactattctcaaatttaaatgaaagataagatcagagtggcacgcaattaggga tgggagaatacatgggaatttctcccagggttaatgcaatgcccatgtgttgggaaccaggtgactcttgaagaggtcag gtatttgggagcagtgccttgaaaccttagtggacattagacccacttcctagtggaattgtagcattgaaatccaaggc ctgtaatccaagccctttgggaggccaaggcaggcagatcacgaggtcaggagatcgagaccactctggctaacacagtg aaaccccgtgtctactaaaaatacaaaaattagctgggcatggtggcacgctcctgtagtcccagctacttgggaggct gaggtgggagaatagettgaacccagaaggcggaggttgcagtgagetgaaattgcaccactgcactctagcctggtgac agagtgaggctctgtctcaaaaaaaaaaagtattaaagaattacataagagcaaagaaccattagaatatctcacttag ttgttatcagcctagcaagctgccttgaaggtaatagaCatttttaaaaagtttatcagatgaaaaagcgaaaatcagccaa cctgttttaatgaaggtgtgtcctgggctgatttacatgtctccagggactgatggctctagaatgtaaagcttggcatc

accatgactgcactggaatgaagaggggttataatcacctccttaatcattgagaaacttttgtccaattctgaaagagaaactatctgaaagagaacatcagtaaggcacatagcatgagaccaccagcattatttccttagtctatctcatgatatttgactttttcctcc ttacatctcccagtagtagcccatttgatgccatttgacagatgaggaaactggcatgggaaggcccctgatgagtctacagcataggcaaagactggaccagccttgctagtctaatgcctacagaatctcaatgcccagatttgtggttcatagagtt cctgaaaatgcacctaaaaatgttggcaagaatggtcatcgttgtatttagctccatggacttgttcaatgactggaact ctgaaacacagagaagagctaaaagcctaatacaacttcaggaaaaataaaagccaatgatctgaactggataattcacc agtcaaaggaaatcattaatgcttttactttaaagcagttgtgcaaaaattagcacttgatttttacatgccaaggacct gcactaatttctttccaatgcagtagttaccacttccctctacttcctcacgaataagtaaaagggcatgtttagaggat 15 atacacagteetetgetaaaggeeteeetgeetetetetgeteatecaetetaeteectggeeetgggeacgeageacae agagatcagcatttctgacagcttctgtagatcctaccatttaaagacttttgtcatccatgcagatagtctcaggagca qacacaqqtaqctattctttcacatqctaqcttaacatqcatttqctttaqcacctattgccaggcactgtgtcaggtgg gagtatccattatttggggaagtaggtggtcattagtgaccttttacaggcatttcaatgggctaacagagatgttagat tgtaqtggaatagaagaatgggtaaaaagtaaatcagtgagttcagattttaggagttaagatggcaagaggtgagaaca 20 aaaaaaggaaatgattgtcattaaaggaggaggaaagaccagccaaagattttacagtgagttaagcatacaaatttatt atogitaagatttcagttttccaggacaaacttactcactttgacatattggactaggatttgaccagattccagatgat tcacaaatggttttcttccttcccaattaactcagttccttctgagcagatgaaggtacatgcagaggtaaagctgaagct 25 ggccaggggatggctacagttcatgatccccaaatctggtgctgatagaggctcacactgaatcacttcaatgaaaaaga agcattgaaagctgtgggggagaggagtagctactccaggctgccctagctaaggtgaccctccccttctggtggaag taccatgccatatggcctctgcatcaagggctcttatgggatattctcagagaatctctgccgtttcatctgttctgata 30 tctacccaagcattttgaaaaacatcccaattcactgaagcaagtccaacttccgtaaattccagtaggtgggttgacag ttttataatttcaataagggattttgatagcacttctaagaattaaactacttaaactaatgcatcaggagcatacttgt tgaggttcaacaagacattatttatgcaatggcaatgagaaaaataaaaaacacagtataaccatgctgtattgctataa caaacttctactgaatgttctgactgtaagcccaggattgcatgacaaaacctctagtctgaagttactcaccttgacag 40 gttggttcttggagatgaccagtttccaaatggtccacaggtggtttcttcaatcccagttaagtttgttccttcagagca gctgaaggcacactgtgagctgaagctgaagtttcccaaagggtgagtacagtccatggtacccagctctggggcctcca aaggeteacaetgaateaetteaatagggaaagaaacagtatggggaagagttaagaggaaetgaegeetggatttgaat cctagccctgccacttgataaccatgtgcctttaaacaaggttacttgaaccctccaacttcagtttcttcatctatata agaggaataatgaaattgtgttatctttatcaaattgatatggaaactaaatgtaattcaattagcataagtcaaggacc 45 ttagaacaaagcctgactcatcagaaattctaagtaaacattagctagtcttcatattattatcttcagcattatctgta gtgagaatccttaaagccaaataggtgtaactgggaatgaccagcttagtcgggaaataactatcacatcagagcccctg agtetactagagtattgggageaagatgtteagagaaagagtgggtetecataataageettetttgeaaggagagaata acaaccetetecagaaaetgtatetattteeetgttetgattggtggtacaataggtaaatttaagaettggaaateaaa gttttcacattttagaccctgccatgccatttagtaaacagtacaactttcatgtcttattcctcatctgtcaaatttaa gccattattgctaccttgctctagagacttcaaggaagaatggactcaaggaatcagaagaattttttgtatttggaaactatagagatgagattaggagaacaagggaactaagagaaaatgttatctttttcattgatttaaagagtatctatta gattgtcatgtatgtgtgatgtgttttaattgcttttaattgatcagtctccctgtagtatgaataatgtatttgagggg aqttqacaaqtggaagacaaattagaaaaacactaagttgtaaaaattggtagaatgttaccctgcataaatgttggggg agttaagagagteteataceagggtgeecatgtaaatggtgatteeacataetgagataagaaatacgaagagaaaaget qactgggaacaattggttttatagtcttttaaacatcccaaaggacatccttagcatatttgagttcagagctggagata ggcttatcagtccaaagatcacatagatttgtgagtccgcaaaagtcagtaagtttgaccaaaggatacatgtagattag 60 agtcagaagagcaatatacaaaagacaaaagctgagaaattatagtagtttatggtcctggataagtgctcatgaaggat ctcaggagaaatgatcacaggtagaaagaatgagaaaagagtgatatgagagaaaccaagacaaagaaaagtaaaatgtt aaaaatgagtgaaataggcataccaataattaaaaatgagtaaaataggcataccaataacataagggttaaaaaataga gttcaaaaatggggtgagggtaaagtattaggaaggagtcatggcccagggatcaagtgaaatgagttagatctatagat ctatttcagttggttgacatttaaatgtattttggttttaattetttattgtttacaaacattgcttttttaaaaaatta 65 aattgtccaattcaattcaggctcacaagcaagtgcctcatatatacaggcattttgtggatcccaaagatgcaatgata aataggacacttactgatctcaagaagttttcagtaccagaggagacggacaagtgaacagatgacttcaacataagtgg qaqaaatgaggaagaaatatgtggagctatcagaactaagaaagcttcctagaagaaactgtctttgaacaatgtcttaa ägätgacatgittitttggccatgitgcaaaatgagagagagaggccaccagcaaagtcagtgitgctacagagcacatgtgtt aagtgtggagaactgcaagaaggaaaggaactactagaaggaaaaagcaagatactttctgggtaactcagcctcctaat 70 gggaatctaccatgctaattccttatggtaaccctgacagcttttatcccaacactgtgcttcttgtggtactcaaaaag acttgttgagaagtgagtcgaaacttcatgctgacttatgaaatctttacggaaaggtaacaatattgtgaaagcagagctttctgatcaaaacttccattttctcagagtggctagtatcattttgttccaaccagcttcatgataagctataatgatt ctqagatgatttaaataatcaggaaaggtttatttgtaaattcatagcataaaaatcatatgctaaaatttttacgtata aaatacactaagcatatagtcataggcatttatttgcttttggaatgaaattaccaatactaatattctgtaacacttat tggaattgtagaagattttacagaaatattcatacaccaaagatagtgcaatttttatataaaaattatataaggttagac

gatetateattttgatgtaacttgatttaggggtatagettttgtgcacagggacaaatettacacaccaaaaattetta ggagtgacacgatgcaagattatatagagggctagatgtattttagaatgaaccagaagctgttctcatcccccaacctt tccatggggtaaatctgagtattctcttaaccgtggcccttcctgagtctgaggcagcatagccgtcttgtcactcccta cctgtgtaacagagggctgcctttagtttgtggcaggcgtcatcgttccatttgcctgcatctttgtttctcttgatata gatetccacgcagtcctccttgttcttcttgttgttgggctcaccatctccccagttctctgcttcttcagtaagagatt tgttggtteccacccacgtccatattcctcctatcttccggattcctatccagtagtaagaacgactgaaaggcagagtc atgaggaaacagagcctaagagtgtatgtgaccatctcaggatcacagaatagttgtttgcagatttgaagtagaacctagaccttctggcttgaatataagatgcttttatctaaggttctatttgaaacaaatttagtggttttctaggtttattttc ttattaattttttctcaaaattatttcaggtgaaatttaaccaacatattttagacattcatatttctttttcttttta gctgttaatgatttacaactaattaccgtgtaatatcatataactatacatttacgtatactttttaatcctggaatca atatctaactgtataatttttaaaaagaacaatttacaaagccaaatggtataggattatgaaattcattagatcatgtt ctatacacaaagagactcaactgatgatgtttaataaacatatggacccatcaaatatgagggctttgaagatatctaat 20 taaacacataattacacaatgacttcataataatatatggcattctaagcatggtatgatctacatgaatcactatttaa tacagtaaagaaacagatataattgatggtaaagagcatcataaaataaacattttgaacagagttttgaatgagcattc cactagaatgcaagttctaagagggaaaaaactgttgtgtccactgctgtatccttagtgcctagcataaatttcacaca ttgtagggactcagaaaatacctgttgtatgaaaagagcactaagtttctatgtgacacagtgcagacatggcataagga 25 ttaggaaatgaaaaaccaagttcaaagctattgctggagagtcttcaagaatcagatataaaatttgtcacaacaatggg agaaggaccaaaaaatgataaacccccgtcccttaataagctcgtattgtaattgtagaaatgacattaatgtacactga cattattcctttataattgagggattttgtggggttattggggatttgaactctacagcatgggctattataggttaaaaa tctgacatttccatggaaatatctgcaaaigaaatacaaaattatatttagatgtatactcttaaaccacacatttatag cagacaccaggaaagaaaagtatttctttttttaataaaaagaaataccttttttgagcaactgaaatgacaaagtcacaa atttcctgcacaccttaaaatatacttaatgtaaatgacgagttaatgggtgcagcacaccaacatggcacatgtataca tatcacttctcaggtagacacagtgtttattgcaaaagatctgatttcaatagtatttcttcaagagtctcccccagagac aaagtcaagaagaggaaatcagcatatctgagaagaagatttcaggatcactttttttgagggtctgagaaaatgttta gtttctatattatttaaaaccagaattgaaatggggtgattcctatccttgccacctgcctctacaaccccaagagtttc tatetgageatetaaaegtettttaggetgaaaggeteaeeatggetttgettggteettetetetagttettetgeageee attgagcctcttgacttagcacaagggtctcaggtccttgcccaaagggagtgtgctgtgctgcaggtagactgcactga atgtcaacagaaagcettgetttettteatttetetaacecagtetcacateeteeteeteeteettteeeteecet gaagagagcccatgctctctagcttttcaccgtgtaggtttgggagcctacaagtacctttaatattcttggactataaa 55 atgagatggttttataagactgcatgtgaaattaggacccatatgatgaaggacaataaaaaggaagacccactgatgtg agtcaatgagtcaaatgcaaatcagatttgcatttttaggaaaataataataacaacaacaacaacactctgaagctcagcg ccccatatttattattattgtttaatetttataacagetetetgetatagatatgattattateecccattetaaagagtet caaagaggttaagaaacaaattcaaaaactagcgaaagacaagaaataactaagatcagagcagaaccataggaggtaga gacacgaaaaagcettcaaaaaatcaataaatccaggagetgcattttgaaaagattaacaaaatagatggaccactage 60 tagactaataagaaagaagaatcaatagacacaataaaaaatggtaaaggggatattaccactgatcccgtagaaataca aactaccatcagagattactataaacatctttacacaaataaactagaaaatctagaagaaatggataaattcctggaca catacacceteccaagactaaaccaggaagaagteaaateectgaatagactaataacagttetgaaattaaggeagea attaatagcctaccaactaaaaaaagcccaggaccagatggattcacagccaaattctaccagaggtacaaagaggtgct tcctgatactaaaacctggcagagacacaacaaaaaagaaaatttcaggccaatatccctgatgaacatcattgcgaaa atactcaataaaatacggcaaactgaatccagcagcacatcaaaaagcttatcaaccacaatcaagttggcttcatccct ggaatgcaaggctggttcaacatacacaaatcaataaacagaatccattacgtaaacagaaccaatcacaaaaaccacgt gattateteaatagatgeagaaaaggeettggataaaatteaacaceetteatgetaaaaacteteaataaactaggta 70 aggttacaaaatcaatgtgaaaaaatcacaagaattcctatacagcaataatagacaaaacagagagccaaatcatgagtg aactcccattcacgattgctacaaagagaataaaatacctaggaatccaacttacaaggaatgtgaaggacctattcaag 75 ttttcacagaattagaaaaaaactactttaaatttcatatggaaccaaaaaagagcttgtatagccaagacaatcctaag caaaaagaacaaagctggaggcatcatgctacctgacttcaaactatactacaaggctatagtaaccaaaacagcatggt gctggtacaaaaacagatatatggaccaacggaacagaacagaggcatcagaaataacaccacacatctacaaccatctg atctttgacaaagctgacaaaaagaagcaattgggaaaggattccccatttaataaatgatgttgggaaaactggctagc catatgcagaaaactgaaactggatcccttccttacaccttatataaaaattaactcaagatggattaaagacttaaatg gaagacctaaaaccataaaaattctaggagaaaacctaggcaataccattcaggacgtaggtatgggcaaagacttcatg

actaaaacaccaaaagcaacagcaacaaagccaaaattgacaaatgggatctaattaaactaaagagcttctgcacagt ccaaaqqattataaatcattctacqataaaqacacatgcacacttatgtttattgaggcactattcacaacagcaaagag ttggaaccaacccaaatgccaccaatgataaactggataaagatgatgtggcacatatacatcatggaatactatacag ccataaaaaaggatgagttcatgtcctttgcagggacatggatgaagctggaaaccgtcattctcagcaaactaacactg catcacacactggggcatgtcaggggatgtggggctaggggaggaacagcattaggagaaatacctaatgtagatgacag gttgatgaatgcagcaaaccaccatggcacatgtatacctatgtaacaaacctgcacgttctgctcatgtatcccagaaa ttaaagtataatttaaaaaaagtttaaaaaaagagttgccttagtcacataactagtaagagacatggttgggaattt gaacagaggccaatcagttccaaatccatgctcttgatcattaagctgaacttatggcaggaacttggaagacatggtaa aatggggaaaaacgtggagccagggagacttgtgaaagtgccagtgctcccactataccctgaaagaagtatctagactt tcaggctagagtgcagtggtgcgatcatagctcattgcactcaaggaatcctagggtctagtgccccttctccctcagcc tcactatgttgctcaggctgtaattctgtcttgaagcttgtccaatcaggctttcagccacaccaattccctgagactgc teteaceaaggteetacaetteactaacacaaacageetattetecateeteatettactteaceagggageteetggtt ttcctcctacttcactggctatttcttctgtatcatgtgttgattctccctcatctccccaacctccaaacccttggagt actocagagateaccgctttgctcttctgtgtctaacctcactaacttggtggtccaattcacactcttgactttgaata ccatttaaatgcgaacgaattctaaattctgtacaaccagaaccattctcctgtagccaaatgcctactcaacatctcca 25 tccccaaacaaatttagttgttcaataagcctctcatattttacatatcccaaactgaacttctgaatttctcctccaat ctgtagggctcttcccacagcctttccatctcagtggattataactccatccttccagttactcagaccaaaacttttgg tttctctttctcagggggagttgggtttgttacatacaactgagtttccgcttacacattatttaatttctttaattc ctgttccaaaagaagccagatacaaaaggttacatgttgtctgattccatttatatgaaacatatagaagaggtaaatcc ataqaqacaqaaaqtaqattaqaqqttcccaqqqctqaqqaaqaaatqqqqactaactqcttataqqqtacaqaqtttt cttctgataaaaatattttggaactagatagacattttgttaggccattcttgcattgttataaagaattacctgagact tggtaatttataaagaaaagatgtttaattggcttacacttctgcaagctttacaggaagcatggtgccgatatctgctc agcttctggtaaggcctcaggaagcttacaatcatggcagaaggtgaaaggggagcaggcatatcacatagcaaaagcag gagcaagagagatgtggggaggtgacagtcacttttaaacagccagatcttgtgagaactcattcactatcatgaaga cagtaccaagaggatggtactaaatcattcatgagaaaccccacctcatgatcaaatcacctcccaccaggccccacct tttaatgtacattcagccaaaagaagatttggaataggaaaggtcatggagatatattaacagccatttgatgggtggta aggaaaagagtggttattagactgttttgtggccctcaaaaggtagaactagatcgagttggtgagcattataaaaccat attgahagcagcatccctgggtcchagggatggtcahagggaccactaccahacccttccctagccthacccatcactctacagattattatttgctchttgctacagggtgcahccgcaggttgcatcactgcagttgcthaccagtttatcatgggtha tecttacatttggcatgtaageccetettactgtetgteatetateteetacaaaatgtteacetaaactgtteteteetga cccaaccttgattttcatcccaaatgcttccttgccatctctgggattcctgtcttcaccatcaccaaactcccctcaat cttccaqtttcctqttcaaacttttctcctacctccttgctttgtcattagcccgactgcctccctaggacatcacttcc cctqcagatctctcaaqatqacaatatttattctccacacagcacatacttcagggttggaaggcaggggcaatcttctc abaaaataactotgottotttgaagottgtgacactgagataaaccatotcactgtcotcattgtagtgacototcaact 55 cctcatgcaagattggctttggcacctagttcctgatcttcctttccctgtaagcacttctcatagtcttacgggacttc accatccatggcacaaccaataccacagcccagatcctcagctctccaatgacattttcctccactagacttgagctacc tecttecetaggeacageeteaacetegacaacaeetaagaetgtacegtetetaaagteacatgtteaaacaetteaet ctttaaccactgtctcctattcttgcaagtgtattgctcaagtatctcattgcaatgctttttacttctacctcattgaa 60 tttttttttttttgagacagggtctcactctgttgcccaggctggagtgcagtggtatgatctcggctcactgcagcctc catctccctggttcaagtgattctcatgtctcagcctcccgagtagctgggactacaggtgcatgccactacgcctggct aagattttgtatttttattagagaaggggttttgccatgttggccaagctggtctcgaactcctaacctcaggtgatcca tctatgctgcactattaaaactgccttgacaaaaattataatagtgagaaaattatgacagtgaaagagatctgaaataa tcaacccccatcttgcctttaccttccagactgcccttaataattcctgagcttgggccaagctatctttggaagaaatt tagtttatagtttaaatgataatagcccttctccaaaactaaactgcctttgtaaaactaataaaagaccaccaatgaaa agttaggaggatgagaggagcetgaattetgetaaggtgtagatgtaaacaattaccaactgttattecggaggtcacaa
gatttgcaacatcgccaattactcctgcagataacagcactatcatagaatctgattggccttttgagatgtcttttcag
attettacatttcaactggtggctctacctggacccatcaacaagtcctgtggctccacccagaagcagacttaacatgc Etggacagttacactgttggcagatatatcttgcttccaaaattggatttttgtttaatgaatttattctgttttcttga tatttacaactgtgaatgttgtgtctgaattctctttatttcttgttgaaaagaactatattgctacagccagtacatac ttcccaaactacatagtgttatatggtatatgacccaatcaacggtggcaaagctccagaaataccacatagacatcagg gacactttaaactaatcagcctatagtcctttttcagtaatttccaaacctggttgtgcatccaaatcacttggtaacat tcaggagtttttcagggtccaaggtttatataatttgaggtctctctttgagaaaaggaacgtaaaagggtcttgctttt atagatettacaaagatgtattaccatgtaaacacatteetaggacecaggceettgtaatttaaaggtttatetaagta

tcgccaggctggagtgcagtggcgtgatctctgctcactgcaaactccgcctcccaggctcaagcgattcttctgcctca gcctcttgagtagctgggactataggcacgcaccactatgcccagctaattttttgtatttttagtagagttggggtttcg ccatgttggccaggatggtcttgatctcttgacctcgtgatccaccgcctccacctcccaaagtgctgggattacaggc tagcatctgtactgtttactctatgcatctcaatattttttcttttagtatcttcctttttcctttttccctctctattacttcctc ttgtgctatttttacacctccttttttaaaaaattttttcccttttatttctattgacctttagccctcacaatgattcc agtagtgggggcagttgatacataactaggttttaaagtctageettetgagaccactcattccatttgtgaaaagtgat 10 tccactctgtatcaggaatgtgctaggttctgggaatacagcaatgaacaaggtaatttttccctacccctaaggaactt ggaagagacatatggattatgagggcattaaagaggagacctagtgtaagtagccagttctcgtgaagggacatgtatta ggtgtggtattttttatagaaattgtctcacacaattatggaagctgagaagtcccatggcctgctgtctacgagctgag 15 aaccaggaaagccagtggaatacttcaaagtccaaaggccctggaaccaagagtgccagtgttggaaggcaggagaagat gggtgtcccagcttaaaaagacagtgaattcactctttttgctctacatagggcctcaatgggttggatcatggcaccc
acattggtgaaggcaatcctctttagtctacattaatctctttggaaatactctcacagacactgagaaa ttttaagttataatttaaaatteteaataaaacteaaacacaaaceacactggtattteacacagetaatttetaatgca tgttctctcttatttcccagagtttttctgcccctttaaaagaacctctgctgttctgatccttatcacatctctgtttt attectetetecagageaccetaacatacagaagaaaacaaatagggaataactattagacatetteattegttaaaaa tctaccagatgactcttttacatggtgagtttctattgtgaatttaaaatcttccataatatacaagaattatgtttaca aaattatacctttgtgtgttttgcatttatgcttttattagttcaaaacgtttggcctcatggaagtttttcatcgtggaa accacatatttctgaaaaaatatctgacaatatacaaaccttccattcagtttttactctccaattctaccatgttttca aaaaacaactgtagtaaaaacactcagaactttattctggttaacatcatgccttgctaggggacaatagtttccctttt tgaaataaatttaaaacagatgtaacataatttgttaataaacaatgagggggtaatctagaataagtaacttttaccat 35 tattcaatgcaagtaaaaatatcacaatccttaagaactctttaagaagcactgaatcccatagggatgaaagtgattaa attgtgcatagtaaccetcgcacagagcattcagtaggatttgcaccattaacaaccetccatgcatttgcctgtgggca tgccaagattttacagcgagcaagggagattagaaaaggaattctgagatttcagagtcttggtctcttcacctttgcttggaagaaaatatcctttcccttcattagccaacactttcttgatcctgagagtaggaaagggaacactgagtctttca gttgaaggccgtccttgcctgctggactttgatctattgaagtggtgatgggtgttgcggtttcagccataaaggcatct ggcatagtaggcaagaagggccagaacccgaggaggattatctgtctctgttaacttcagtgtatccctctagttcccc agatgcacctgtttctgtaaatataaacatgcatgtcatcagaacacttaatattctgcatactgatcatgacaacaaaa tgtaccttctaacacagacactctcactaggatagaccatgtaggaacatcgaattctattcagttaggacagtgatgat gtctacatattatacctctgtcaaaacctacagaatatacaacacagcacagagtgaattctaatgtagcctgtggacat taatgaataataatgtatcaatattggcccatcagttgtaacactaatataagatgttaataacagggggaattgaaggg ttattttaatttttaaaaagtattcagagggacttgacctttccaaattctctcaaagcaggtcggagtagttaagaac acaaattttagaaccagactgccagagtttgaatcctggctacaccacttactagctttgagatttcagacaatttactt 50 aacttctctgtctcattttcttcatctgtgtgataagaaataaagtaacaggccaggccagtggctcacgcctgtaatc ccagcactttgagaggccaaggcgggtggatcaggagttcaagatcagcctggccaacatgacgaaaaaatacaaaatct ctactaaaaatacaaaaattagctgggtgtggcaggcacctgtaatcccagctactcaggaggctgaggcaggagaa ttgcttgaacgcaggaggtggaggttgcagtgagccaagatcatgccactgcactccagtctaggcaacagaatgagact 55 acacaataaagetagateegttteettteeteteetetaeaaaaaataaageaaettteeagaacaataeeeaggtgatg atttctcccctgctccctcacctaagatattggcaagtttggagggttcaaggagaaacagagcatgtagagaagatacct ctctcataaccatttgtgatttacaagtcttacctgattcttttgaacttaaaggatgtaagaaggcttttggtagcttc gctcccaatttttcatgagaagtccaaagtcttaatttaaatgtgagatttcctattttgtaaacgtcagaacttaactc qaqactctcaaatttaaqcctgtactccaaataaatctccttaggaagaattttatccattttccttagagtgctcatca tggcagttccattgcacaattccgggaggcatcatataattcaacatgaatagcaccccctggagttgtacaatattagg cacqactaacatttttatttcctgaaacacttcccacactgagttgtactactactcttttcttaatacttctgcttaa attttcaaaaacatttttgaagtacattcataaacttcctcacctttccgtaagcatttccgaagccagaggagaaatgg tqctaatgtcaggagggagagtccagcagcagaaagtccagctaccaagggaatgttggactcagtgggagctaaggaag taagagacgaagaaaggtcatgaggaagaattgatgttaaagtctctccgtcctgtccctttggccttttttctgtacat tcattactaggagcagaagagctatctagtttaatacaagaagcagagatgtggcattacaggcctttgagatctgctcc aagccacetttgaagctatttccaccattggcaggcagaactetaacttgccaagctcgttcacaataccaccaccacc ttggttaataaacactgcacttgcttgctctcttgctctcactccctttgttttccatttccatttctcctctct ctctgtctcctttttccagttgtcagaattctaccctttccatcaacatgcaacttctgttttttctctatccccataca acttaatattcacaacttgtcaacctgggcgaactttctggtttggatataatgaatagttgattactgtaacaagatag agtgtcctgtggctccacatgtccgagctgcagagccattgagcgtccatccttcaggacaggcgaacttgcacacagtg gtaagcgctacttagttttcagcatgtaggaaattaggaccaaacccctttggggcaatctaggttcagaaactttatga

agatgtgcactcaagttgagttgatccatgtaattcaaatccctcctcacagctgaaggcacaagaggacttgtaggtga attotocaataggggaatgagcacacctcaccaaacccttcgggggctggtggacagcatcgcatctcacagctggaaca cacgagagagcactttagaagtttgtttgcatctccagcaatacgtttcccaaggtaaccaagttcccaagctcttcaat agttettttatettaaaataaaataaaataaaacaaagactgtacettcacatgtgggettetegttgteecacteecetgtg gggccacattggagccttttggatcccttcaacacaaaaccctgctcacaggagaactcacagctggacccataacggaa caaaatqatqqtcagaaaatattqcaqtqqaactaqagagtacttqqcqtttqttqagtgaacccagttcattcaagcaa cacttggagaactgaagattctttataattccctggacaaatgggaagatggctgtgttttctttgaatttcagcccct cactgatcatggcactaattaaaagactaattaatcagaacattagttcctgagcactgttcttctaacacacaaaataa attatggtccaaggaaagatttcacgcagtctgaggacaacatatgggtcatggatgtttatagatggtgccaaaaagaa agaaaagaaagcaccctataaaatttgtctgttttgcagtttggttttgtgttatgttttgctactggaaatcattct gtgctggctttggctaggacaaggccagtgcctgatagtaaaaactgcttgttttcaatatccttgctctcactttaaag tgaattaaaatttactgcttatatatgcatcaatactatctctgtagctgacaccatgcttgaaacagtctcatcactgc taattatgagccatttcagaagacaggtgtgatgagagttttacattcaaatcatgttctcattattctgctttccgaat tttctaatatgattcctttagattaagaattctgtctattccatgctaatgtctacaaagttttatcagcacatcacagt taaaaaaaaacagcaaagaattcattcttaacacatatgatcctttccctggccaaacattagttcttttaaatgaatct gaagatggttgttctttaagaaagtataaatcgaaggatctcaagcttaccttcacaaactgggatttgctgtgtccact 20 gcccttgagtggtgcattcaacctgggctggtccctgcaacatgaagccttcctcacaggtgaagttgcaggatgatttg aaggtgaactctccagcaggggaatggctgcacctcacagagccattctgaggctggcggacggccctgcatgtcacagc tcacagtaagtctccatgtggaacaactctacctttacacgttggcttctcgttgtcccaattcccagatgaggtacact gaaggetetgggeteceattagtteaaateettetteaeagteaaatgtaeaggttgtgttecatgggaagetteeaggg ttttggaaacattccacgaacccattggctggatttgtcacagcatcactcaaccactgaggattttaaagagcacca tgaattttacagaagaatgatetttteaetteetattgagetgggtgeetaaeagagtgaggaagetgeetteaaagggt agateeeaaagteetatgteaattettagggaeatgeaeageeagaataaaagettttattetttteatggatatteta tcttttctgatttccactttgcctatgctgagtggtctctaatctatgttatcatttacgtgaggtaaaaatttaaaaaa 30 tttattgttttatggtctcccttacaaatcaccagagcctcagaaacacccatttcaagcatagaataaaaaaacctctc ctttccctqaaqttttgaaaatgtaagttqaatcaaaaaacagaagcaatgaggatgagttacagaacgttctgtgcat teteagagggatttaceattgeaggetggaataggageactceatteteeagaggacatacactgeatggteteeatget gcttggcaggtaacccctatcacagctgatagagcaggaagaattgtagctgaagtttcccagtgggtgactgcaaacca ggcttccatgctcaggggattccagggctgtacagttcacaactgaaaaagaaacccaaatcagttctgctcatctctca gttcaaattatatgaacaaacacagcaaacttaggtaccacaacaaatttcttgttacttttctcacaactgctaaaaat actacagtaagcttccaaccaggatgagaaccattcacaaagctatatttcaaatttaagtactagaatacattacaaat tttaaaaccctaatgctgcactgtctactatagtagccactatctgtgtggctactcaaatttaaacttgaattcgttga aatcaaataacatttaaaattcagttcctcagtgtcaccagccacatttcaagtactcaataaccacatgtggctcatag gcaacgtcttgttaccacctagatgaggtgagtacatgttctctcgcagggacacagaattacagtttattgaatgtgtcc tgtgtgccaggcaccatgtaaccatgagcttatgaagttcacactattattattctctctattttacaatgagaaaactgaca 50 catagtctcagctcacgatcaccatatgacaccatctgcaccagggaaqqqaaqqcatgcagacctgactctaatgccag tgaagccagggtcacacttgcaagtgtaattattgatggtctctacacattcaccgtggccactgcaggatgtattggta caggcagctacggaaaatacaaagcatgatgaggaggactattactgtgcttatactgagtgcctttgattttagaatca 55 acagtgtgcaacagagacatcagcagtcctacagagtgccatagactttaactgaagtgttttacaaagttccaaatctg gtgtgtgtgtatatatatatacatatccacatattcttgcccacattcacacaaaacagcaaaagagaaactttagcagt taaacagaatcttttggaacataaaatgaccacaatagagagcagtttttgcatgctgtaaatttgccaagatgcccaca cactgaaactacctcccactgctgccgcaaactccctacctgtgtagcatagggcaagcttcttcttgctgcacctctca teattecacatgeecacatetttttetetettgatgtagatetecacgeagtecteatettttttgcetattgttgggtte ttccaatccagtaataacttggtgaatagctcaatatggagtttaggtactcaatctcttctttgttttgaattgcaacc aggtgtgtgtacctttgctgacaataagcactggcctcatcataagtcatagcttccgtggaggtgttgtaagaccaggc 70 cacaacattatagtatacccattttgtagtagaataataatcagaataactaagctttattgagcacttagtatgcacca aqaagcactgtatgaggtactttccatgaaccatgctattgaatcctcacaatgcatctgggaaataggtcattatgatc cacactttacacttaaggaaagggagacaccaagaggtaaagtaaatgaccccaagcccagggaagaacacattgcaggt agaggtcaaggatgctgccagatatcctgtqcaggacagccccagacaagcaaggatatttcagtctgaaatatctatag tgcgagaatgagaaatcttggtctaatggcactgacttacccaaagtgagagctgagagaaactgtgaagcaatcatgac 75 ttcaagagttctttcacccaaaggtttaggcttgaaatactttcctggggagataaaacacaaaatgaattaaagaagg aaatcgtgggtagctagttacattattctaccatgatgtttaaggcagcatcctaagattttgggcaaaggacactagtg caataatctttatttcagagtttaatcaaataaataaacaaattttaagactttcattatttaggtcaaagagaaaagac aggttttagctacaatacaataagagcttgtacagatgtggtttttattagaaggccttttgcatatctgtgtttcatgg cccgaggctgcccttataaagcgttctgcacttaccgttttgggaagcagttgttcaaacacaggatctctcaggtgggt atcactgctgcctctgtctcaggtcagtataggagttttgatgtgaagtcagccaagaacagctgaacactacttcggct gaggccttttataggagggattgcttcctgtgaataataggaggatattgtccacatccagtaaagaggaaatccccaa tggcatccaaaaactttcccgggaatatccacgatgcttaaaattacaatgatgtcagaaactctgtctcttgaagctac

ttcacctttgtccatgcctttatatcgtatatgcaattttattaatatgacaaaaatgcatgatttttaattataataac ataaagtctatgtctttaaaaagttgtaaaactttgcttgttagtagtgtctctcatgtagttgtgggtagtaattagaat accaatcactactcatttttcttctttttcacctgccaattcaacatatttaacatgcactgtctcacagaggaatga $\tt ctcacaaggtagatattaatcttcagattttgcacggcagttatgcctaaattaaaatattatctaaaaataatatctaa$ cactcaaatggttaaaataatgccttattttaaaaaaagaaaaatgggaaatagatatttacatctgggaaagtttcatg gtttgttcagtgaaaaaaataaaaggaggccaggcacagtggctcacgcctgtaatcccaccactttgggaggccgagg caggcggatcacctgaggccgggagttcaagaccagcctgaccaacatggagaaacgccatctctactaaaaatacaaaa ttagctgggcatggtggcgcatgcctgtaatcccagctactcgggaggctgaggcaggagaatcgcttgaacccgggaag tttgaaatgttaatgtgcaaagaataaaaattcttccacaatgttaacagtgactaactctggatggcaggatttgggataatttttatatccttcattattattttcaggattttaaagtttttttcaatttccctttttttcacctttatatgtaacaa gaatacagtttaaagaaacttgtctctaggccaggcatgatggctcatgcctgtaatcccagcactttgggaggctgagg tgggtggatcacctgaggtcaggagttccagaccagcgtggcaatatggtgaaaccctgtctctactaaaaatacaaaa attagccggggtgtagtggcgcatgcctgtaatcccagctactgggagcctgatgcaagagaatcgcttgaacccagga tcttcattttgacatttcttctgggtgattgtatacattccccatctctgcatcttaccctatctaaatgatggtaacag aaagacaactgattagaaaaaaataacttaattaacgaatttaattcaacccctatcaaaaagcatagaatttattccct ccaccttaccactctcttacatgatccagatactgacattattccaattctttatcccactttacttagctcaatgtggt atacattatctqtatqtattttatttttaataaaqtatgaatacataatctgctatttttaaaaagcatggtcaaatgta tagagtagccaaatcttaaaaaaacaatttatcttcgatatcaataaagtacctaataattatattgctaatagaaattag togttaacatccctagataactaactttattattgcgaatttttcataactaagtttatagtttatctcttcccctttt cccaattataatctctaacatttattgagtgcttactatgtgccaggccatattctgagcattttgtatgttcacctatt gattattcaatccgtacaacagcctatgaaataggtactcctattatccccattttacagatgaggaaattgagaatctg gggattttatctcattcaaaagcacagagctaagggttgaaaccaggcagttgatatccagagcccactcccttacctgc tactocaaaccatgatttcttttgttgttatgccccgagattccttgttctacccaagtttcctgtactcttcttgccct cttottcctgagacatccttgaccatcacagetctccactgagataactgtgtcctggggttctgagacatgggggctgga agggaccccagggacagtgagcagtagggagaggatgcagtgagaacagaccctggatccccggtgcataggcagggaga aagtggacaaaggaaaaaacaagcaaggcaggtggagccatgcctaggtaaagttgatccctaagccacagttcccagaa gttcctgattcaaaagcaaattttctctaaggtcaaagggcaaactgattattctaaattctaaactgattattctaaa ttgagaaagcttcagggagagatcccaatattcgaaggataagagaaatgaggagtggaagagataggtgagtaacagta cctctagtcccttcttttacatgtaaagtgtagactcactgagtgttacagagccttgccacaatgtaaacacttgtct tctttqqaaaaaqcqcaqqtcacaqatcctacaqtgatttqtqttttttacctqqqacaaaataaacctctaatctqt qttttaaccagaggtatgttattcaaaatccattcatccttacaattacctgcattctcccacagtattttctgtgtccc tgcccccgaggttgtcactgcaaatcaggtacatggatactgggagctgatggggctcccctctggctacctgggctgctg aaqqqqccataqacaqacccaqctttcctctcqtqqaqaqqccctqqqccaqcqctqcqtqqqaqtqqqattacaaccaq actatagettetteacetgettttteetateaggattteataagaggeaattgettgtttttgagggtgggggeaate aqqqqqqqttgaaqagqaaattgggtaagatttgaatagttgggcatgttgaatattatgaatatcatctccctcttcaa ataatccaaaatatacccccaagaaacaggctgattagaggtgcttcaaggctccactgaatctcccaagctctgaagat gtagctagctgttaccggattgccggttttcaagcctcgcctcacatggaccctcttggcagtttctcgcatgggggaag catccgctacatagatgggaatgaaaagaggaaagaagacggtgcaaactcaggcacaccccggtgtctgccaccagtgc tatttaatetetgaggtgteaecetteetggetttattgtetetteetggaagtetettgteeteteeteeaeaecetttaatcaggcatcaaagactttaaccagttttgctgtgtgcccaggcccactcattctcacttttatggcaaagggagtggg agacagagagatagccagaaagaagagattggggaccccaagacaaatgttagaattttaaccaaggccaccctgtggac 60 cctaaatatatttgatgaaaatgtgtctggttctaagtttatttcccagaaagccatgtttactcacttggaatttatag acatettataatatetgagtegagtaggageteegggetetaceteactettteteecacacecagggggaagtgtagg gttctcagactttagaataaagaggaatcacctggacaactcacctaaaatgcacatcttcaggtctcatactcagaggc tctgactcaacaggtctgggtggcgccaagaatttgggctttaaatgagtatctcagatgattctaatacagaatgtgt aagatgaccagatcctatcacacttagatgtattggcctagggccacctaacttggagaaaatgttagtaagacccgtggtggtgctcagctataggtaccagaattttgatcaaaatttactatcattgtgacacttctcttcggaactggaaggcc agaaccccacttgtaaagtgctgggaaaatacaaggaaaatttagggtgagtagcattttgaattcttaccacatggaaag taaatgtataagaattcttaccaataaaaaaaagcaagagagaatagctgctaaagaattaacacaaatatgtatatat tagttattetetttteteetetgatteeagaggaetttgtaatteeactaattettettgagetteeaggatgatetgag acttgaatttttcatgtgctttttgcttcctatttggcagcatcttatcttgaagtttccgctttctgcttggggaccta aaaactaactaatgggaatttcttcaaaatgagcaaactctggtgaattcccaaagcggaagaaacaagtgaggatcggg ctggttaattaagagaacttttcctgaatgtagccagactgtttgccgactgttgttaacatgagggaagaaatacccct ggattttagaagagccccttgtttgttttccttggccatttgtgctgcttgttttgtaagtcagaaatttcctgaaggac tattattagetttgtteteaegteagaaaaettetgetetggeaettttaaaeatataaettggattttaetgtattag taaaataggtgattttggagaagtaggagaaaaacctggattttctagatctctttagagctcaacaactgatatagtta attatgtaagtetttgatatttggaaatgattggattaaccggataacaatgaatatttaaatacagtgatttggccagg gcctggccaacatgcctgtaatcccagcatttgggtaactgatgaggcgggtggatcacctaaggccgggagttccagacca gcctggccaacatgctgtaatcccagcatttgggaggctgaggcgggtggatcacctaaggccgggagttccagacca

gcaactcgggaggctgaggcaggagaattgcttgaacccgggaggcagaggttgcagtgagccaagatcacgccattgca agtgccttagatcgggttcctttagaagcagacctcgaaataaggatgtgggtgccagtcatttattgaaaagatgatcc agteattettagettetagagaetaeetgtaetetetgaetegtgteteeaetteaeettteaaaceageageagetagt cgagtecetetetteaaatgteteeaactgtgeetteaecteattteteetetgtgtaccatgtetgeetetaetgettg taagggeteatgggattacattggatttattcaatccaggataatetecatattttaaggetagetgaetagtgatetta attecatetacaaagtecettecaatagtactgtattagtecatttteatgetactgataaagacatacccaagactggg caattcacaaaagaaagagtttaattagatttacagttccacatggctggggaagcctcacaatcatggcagaagtcaa 25 atcagateteataataettatteaetateaeaagaacageatgggaaagtettgeeeeatgatteaattaeteeeaca ggteecteceacaacatgcaggaattcaagatgagatttgtgtgtggggacacagccaaaccatatcaagtacctagattca tgtttgattaaacaaccagggagcagaaatcttcaggagtgggggcatctttagaattctgcccaccaaggctgggcgc gccatggtgaaaccccatttctactaaaaatacaaaaattagccaggtatggtggtgggcacctgtagtcccagctactc aggaggctgaggtaggagatcacttgaacccaggaagcggaggttgcagtgagccaagattgcgccgctgcactccagc ctgggagacagagcaagactgtctcaaaaaaaagaattctgcccatcatagtaggctgtcctacagagacataacccag agttalcattaattggccacttcacattagacacagcacttaggacttaagaataccatgtcattigatcatcataatat ggtcaggaattaagtattgctatccaaattttacaaagaaggcactgagggttagagtttaaataacttgcttaagatgt catagcctgtaagtgacaaaactaggactcaaatacaggtccatctgactccaaagtctatgttcttggctaccacactg 40 tgatgittgctctaatccagttttactattaattagttgctggigcccaagtttttactgagaaatggggataatttttgg aagteataatgatgeettetteteatagggtattttatttgttgttgtateteeaggeecaacacageetggettttag taaatgatcaaaaatacctgttgaatgaataaatggagtcacctgaaacatgttaaacatttgttcatgtgtcctaatcg tggatttcaggatagtaagcatcctaaaaggaaagcatgcacactgttcttgctacattaatttctcacaatataaaaaa agaaaagcatctgaaaaaagctgccagccgctgtgtctcctaatatcaaactgagcacagatatggagaagctaagggag agggatgatgggccatgcctctaacctcatcatggcaaaagtcctgggggtcagacccgaggagagagcaggaagtgtcttt tgagggatacatttccacagtggaaataatgagacttaaataatattatatacacagttcaactgtttttatgtgtaaa 55 gtatgagtggatgagggtgacttgtccacagacaatagccatctagctgtgataaaggagtcaaggtagtcagctgcatc caacctgacaatgagtactatgctgcattgtccagaaaggaactgtggaagattttgggctgaatttcaaaacagaattt cctcactctctggatgttggcttacttggcctttgatgttcagaggtggtgcctttgtgttgttgaacaatgttgatttt ggagagaaaacagagttgaaaaacccacaagtcattccctggggagtattaccggaatacagaggataatttcagcaagc tcgccttatctcatagaaagatgcctccagtctgtctggctaaaggtaattggcatgggaaagtctttatctgtggattct aacaagtggaatgtttcccttcattaagagagccttgtctggcttggggaaatgaaacactttctccgatatgagtgggc tgtaacccctgctactaaatactcagaagaaataaggcggttgtgggagcagtcaggaatgagtcacttgcctccctggaa tattcagaaaactgaatcaaaagtacattcttctgggttttcttagtctaatagactaagggtctctactttgttaaatt tatigotgotaactagotatgtgacottaagcaaggtattaactotototgaatttcaggttottcatotgttaaatago tgaaaaaagaatgccacagtcaaataagtttggaaacactccattatgtggccacctccttgaagactctaatgcacatt taaactatatacaggcataccttggagatactatgggtttggttcccacaatatctccaaaaccacattcggttttatga ccactgccataaaaccagccacatgaattttttggtttcccaatgtatatcaaagttacatttttactataccatagtct attatatatacaatagcattatatctaaaaaacaacgtaaacaccttaatttaaggctgtggctggtttgattttctacc cagaccactaaaactttcttcatatcagcaataaggctgtttcactttcttactattttttgtgatagcacttttccttt ccttcaagaatttttcctttctattcacaatttgtttgatacaagaggactagattttagcttatctcagtttaaggtgt

ttacattqttaqctaaaaatqctaatqatcatctqaqacttcagcaagtcataatcttttgctggtggaaggtcttgcct cagtgttgatgtctgctgactgggttggctttggcaatttcttaaagtaagacaacaatcaagtttgacatatcaattgac ccttcctgtcataaatgattttttttttttctctgtagcctgcaatgctctttgatagcattttacccacagtagaattttc aaaattggagtcaatcctttcaaactctggtgctgttttatcaactaagtttatggagtattagaaatcccttgttgtca agctecteatecactaaagttttatectgagattgcaacaattcagttacatettcaggctctacttctaattctagttc tettgetgtttetateteatttgtgettacttteteegetgaagtettgaacccettaaagteacteatgagggttggaa tcaacttcttacaaactcctgttgatgttgatattttgacctgctcccatgattcatgggtattcttaatggcatctaga ttataaaatgtatttctttttttgtgggggcatagcgtctcaccctgtcacccaacctggaatgcagtggcacagtcata acteactgaagactcaaactcctgggctcaagtgattcttccaccttggcctcccaaaacactggattacaagcttgagc cactgtgtctagcccaaaatgtatatcataactaatgaggcttgaaagtcaaagtgactccttgatccatgggctacaga atggacgctgggttaccagacatgaaaacaatactcatctcctcatacatctccttcagagctcctgggtgagcaggccc 15 taaactatgctgtaaacagaagtgctgtcatccaagctctgtttttccactgatagggcaaaagcagagtagatttggca acagagtcttggtctgtcacccaggctggagtgcagtggtgcaatctcggcccactgcaagctctgcctcctaggttcac accattctcctgcctctgcctcctgagtagctgggactacaggcacccgccaccatgcccggctaattttttgtatttta gtacagacggggtttcgccatgttagccaggatggtctcgatctcctgacctcgtgatccacccgcctcggcctcccaaa 20 gtgctgggattacaggcgtgagccacagcgccagcctgtcttcaacttaaagtcgccagctgtgttagcctctaataag agagtctgcctgtcctttcaagctttgaagccaggcatcattctcttcttctagctatgaaaatcttagatagcatcttct cccaataggaagccattttttatgccctaaaaatctgtcgtttggtgtagccaccttcatcattgatcttacctagatcc getggataacttaccacagtgtetacatcattacttctgcttcaccttgcactttatgttatggggatggctcctttcc tctaacctcataaactaacctccactagcctcacattcttcttttacagcttcctcgcctctctcagagttcacagaatt 25 ttcctttctattcacaatttgaccgtttgatatgagaggcctagattttagccaatctcagtttacaccatgccttttc cctggcttcaaagcttgaaaggacaggcagactctcttattaggggctaacacagctggcgacttttaagttgaagccaa 30 tataatgataatgaaaaatttgaagtattgtgagaattaccaaaacgtgacacacagacacaaagtgagcacatgtcatt ggaaaagtggtgctgatagacttacttcatgcagggttgccacaaatactcaatctgtaaaaaattcaattatctacata 35 gtaccataaaaacaaggtatacctgtttatataatcaagaccaacagaaccctagagaaaatagctcactccctagctcg gagacattetaaccaacatacaettacetttetttttgctgtgtacagaattcaaatecetgtetcagcaaaattgcaaa gtatcaaatgtcatgtccatctaatactcaaaactgcaaatgttaagtcttgtaagcccagagaccactgtatatacaag aaaacattttttacaagaagattcagtctcttacctacataagcaaaaatatgagatgttctcttatcatttttccatct 40 atcttataatctttggtgctgacttagacactcattttcctttttgtacgtgaccatgtaaaagttcaagtcaagaaaaa cttgttttgacatttgttttgctgagtgatgggtccctaaaagaaatttggcttttgatatagaaagttcagcatgatat tgtgtgaatttttcatggctaatgatttttagaacagttgtgatgtgtttaggtgttttaagaatatgaagcattcagtg gtttaagttggttgttataaaatgaaagaatatgaaggaaagcettettgtettagaacacacetgatteacaaataagea gcttctctcaaaatgttgtaattacaaaaattccaaggcaaatataataaactccttgtcggtgctatgtctagaaactt tagcaaaagtgcttatgcatttattctttgacctagtaatcccgcttctaggattagtggtgaagatacacctcaacaat aaaaatatatatacattaggttattagttatggtttaatttttaatagcaaaatatttaaaaacaacctacatgaacaaat 50 cagagccaaagagtatttgttatgctctctttagtataagaaaggggaaataagatatgtgtgcatctgtttatttttgt aattaggettetttgagtatatgtttatatatagttttgaettttgaettatgtttatgtttaeatagteaaaaatataa attaatcaacagaaataacaaaaaaagaagaaatcacaagctttaaaaatttaatacaaacagaaataattgaatctaaca 55 gtatatcaaagtgataacgtaaactcagaagaaaaaaacataatccaacataccagtggaacacaatattctaactgtat acattcagtggttatagtctaaggacaagaaaattgcaaaaatatcttgaactttagcttgtaggatttttattggtag ggaactaaaattatcattctgggagtagagaatataaatatggacttggcaaatgaaacaaagacctgcagagagataa ccatataaactcattattttaaaaattataagtgtcctagctctgttactgaaaaggcctagattcaatcttatcttgat aagactgattctaggtctggattaggtaaagtacaaggttagtctggaatttcttgctgaatcagaagtaagaaagtgctcaaaaaacatgggaacatgtcacaaacacacgtgaggcaacttgaatcctcactggccatatttaggacaatcgagcatca aaaaaaaaaaatgttgagaataatggattctaacacttaaacaaaaataatccatagcccacagaaggggaagaga gggggagctcttatttacagatgaatatcaaatagcaaagacagaagaaatgacagaattagagaaacatcatttttgcaa aacaccactgtaataatcaattcaggcaagtattattaatggatgtattactattgcgtaaaaccagttggggaacagga tattcatacagtctgaaggtgtcaccctaaacataacttattacaagtggaaaatggtgcctttacaatgaagaaatcta gcagaaaccatcttaatctagtgatcaaacttagtatcaccaataatggatcatactgagtcatgtgtctcctaatatag tgcaccaggaaggatgcaacgtcatgaacgttgtattcttttgtattcaacagaccacccagggtaaaggcagctttctc acttactaatcagaattgttggttttaattcattttggattttaagatttcttactttcttgtcagctcagaaatttatt 70 ctaaggaaataattgaatagtaacaaaacactattaacacaaagcatagcaatttgatttgggcaaccaaacactggaaa 75 acagttatgagagtaaatttgaaaacctgaacacaaaacttacatatactccaattgtaacttataaaaaaatacgtgcat ataaggataaaacagtacaaacaaaaaaatagttgcgttagattggtagaattatggctcctttttgctgtcttaattttt tecttttacattttgatacattattttaattttaattttaaattcaaaattecaaagaatttgecactcatetttgecacttcaag gaaaaaagaaatgtgttcgattattctgttcttagtatagttttggcaatttcctcacgtgtaaaaagagaatactatta attatggacttttttctcacacccaagtagggaggaatcagtggtcccctagaggcccagtgtagaggtggcagcacca atccctaggggagaagatcttggtgatgataattcctgagcagacagttagctgagaattcaagagcagaaaagtaagaa agaaacacttcttgctaacacctttccaccacgtttcctgttcgttgtactctgcttaccctttcatggatgagg

ttagaatgtagacctgaatttaaatccccgttctgtcagttataatgtgaccctagacaaaacacattctctgaacctca gagaacattcttcatttgtagaatgggaagattaatctatattccacttggatggcaagtcttttataaactttataacc taaacatgtgtgagttgctagtatcattatgttggtaaagttattctgagatatgataacagaactgttttgtctaactc cactagcatggttcaggtttagagagtgtggaattaaaaggctttatcctcaaatatgacttaaatccgattttctcat ccactttcctccacaaacaaatcctcaggaaatgacaaactttacatggttaaacatcagttttgtttagcat ccacatggttaaatcatttgaaaactgcttatatttgtgttgtctatgtctaattgaaaagacttattgagaaa agaagactacacatttttcagcaaacactgcacgttttgcagaatttccccaggcaccagtctccaggaatttattggct actaacaatactaagattggatgaatgaggaaatcaaaattgagagatcttgcaagttttgtgagaatgggtgaatggtca aaatgaagagataagttgtgaaatattagtacaagtaaaaattatttacaatgaagacattttgtcaatagctatggaga attttaccattgacccagaaattccatttctttcttcagaaatacccacgtaggtatacatataaaaagttattcattac agtatcqtttttcataqqaaaaaqttttaaaaatcagaagctatctaaactatggtatatctaggtcatagaaatcaaat gactaaaaatgttaatataagcatatgtttttaaattaacttggcttgggtcttcagcaaaattggcttcttaacattgc actecagagttagaettacecacteagteacttateatgcaggagcagaeteetaataceacatateatagagcagagta qqacacaqqttctctqcaqqcaqqcaaatcccaaaqaqaaqqqaqqaaaqqqctqaqacactqcatggtcaatttcttct gaactctgcaatgtacqqaqqtqqacaqtgtccacaaagattgctcccctggacccaccatcataataacacaacggctt tqttttqtttttqtttttqttttttqacacqqagttttqctcttqttqtccaqqctqqaqtqcaatggtqtgatctcgac tcaccacaacctccacttcctgggttcaagtgattctcctgcctcagcctcctgagtggatgggattacaggcatgcacc accatgccagctaattttgtatttttagtagagacgaggtttctccacgttggccaggctggtctcaaactcttaacct 20 caggtgatccacccgtcttggcctcccaaagtgctgcgattacaggtgtgagccaccgcgcccagcccacaatggccttt tgtttacatctctagtgcagcactcatttcatgttctttcaagaagaatacatatttcatctttttattttatacagcaa ttagcacagtgcctggcataaggaaaatgatcattaaaagctgggtgaaaaacctaataaagctactgaggataggaact gcagaccagcatggaaagaaactatgagccagatattgacatcatcctgaaaggcagaagatttagtataggcaagaag tatgettttggaatatagaaaatetggattatgataagaaaagaateatatttgtettatettaeetaeteaetteteag 25 ttccacatgtttctgaggctgtttgtccttactttcttttctgttttatccactctttctgttctgttctttagattggatcatt cctattgagctgacatcaagttaactgaccttttattttgtccaaactgctgttaaatgcatccagtgaatttttaactt tatatagtatatettttagteetagaattteeacatgagttttttaagttteeatttetetgetgagateteetatttgt tcattcattatgaccatatttttctctacattattgagcataattataacagctcttctaaaattcttgtctgcacattc taacacctgaattattctggggtcagtctctgttacattgccttattacaaaaacagtataagtcacattgccttgtttc 30 attgacttgttttttccatcaggcaggtaacttgactggactcaaactccaaactctaggtcctctgtaatgggcaactg cagtaatctttgtttagttctttaagacttattggccaggcacggggctcatgcctggaatcccagcactgtgggaggccaaggtgggaggatcacctgaggtcaggagttcgagaccagcctggcccacatggtgaaaccctgcctctactaaaaata caaaaattagccgggtgtggtggtggccgagattgtgccactatactccagcctggtgacaaaagcgagactccctctcaaaa aaaaatttattggcactgcttggcatctgctatgaatacatgaagttcatgggtcagctatagatctgggcacgttatac acagaatttgggtctccctttctctggatttctccttttctggatttctttttctattttctcattttccagcagctgtggttgccct aaactcggtcctctgtttctttacggcagtaagatttgggaacttttaggttttacctgcctctcagacaaaataaaaaa taattttcatcttgatgctactcctttcttccagatgtagacacctctctaatttccagttgctttttattgctctccag 40 agtctaaagattatcattgttttctgtgggagagttggtctgataaaaactactcccccaaaactggaagctggaagct gtaattatgaatagactttgagtagtattcttctttggaaaaggattttaactactccctatgtacttctttatttcctg tttttctcatccgtaatctttttattttcatacttcctaagtcagacaattttcctacttgaagattcagtgactgctat caaatgacccccatattactaaatacaatatccccaactgcatttataaaaagaaaatttactgtttattagtaaacaat gttgtagaatagtaaaatattgctgggctttggagccagataatcaaggttagaatcccagattctaacttactagctgg 45 tgtattagtcctttctcatgctgctaataaagacataccccagactgggagactgggtaatttatgaagaaaagaggttt aattgactcacagttcagcatggctggggaggccttaggaaacttacagtcatggtggcagcaaggagaagttccaagca ccctcacgtttaattaccttccaccagttccccccatgacacatggggattatgaaagctataattcaagatgagattt gggtggagaaatagccaaaccatataattccacccctggcccctctcaaatctcatgtcctcacatttcaaaactcaatcatgccctcccaactgtcccccaaggtcttaactcattccagcattaagtcaaaaatccaagttcaaagtctcatctgaga gttgggtaaatacactgattccaaatgggagaaattgccaaaacaaagagttacagaccccatgcaagtccaaaaccca atagggcagtcattaacattaaagttccaaaatgatctcctttgacttcatgtctcacatccaggtcacactgatgcaag aggtgggcttccaatggccttgggcagctctgccctgtggctttgcagggtatagcctgcttcctgtttgctttttca aggctgacattgagtgtctgtggcttttccatgagtatggtgcaagctgttggtggatttaccattctggggtctgggc 55 aggtgcagtggctcatgccgtaatcccagcactttgggaggctgaggtgggggatcacaaggtcaggagatccagagacatcctgtagatccagagacatccagcacatcctgcctaaaaaaattagccaggcgtggtggtggtggctgtagtagt cccagatacttgggaggctgaggcaggagaatggcgtgaacccaggaggtggagcttgcagcgagctgagattgtgccac 60 gccttacagcaccaccagcagtgccccagtggggactctgtgtgggggctctgaccccacatttcccttctgcaccgc cctagtagaggttctccatgagggttctacccctgcagcaaacttctgcctggacatccaggcatttccatacatcctcg gaaatctaagccgcggaggttcccaaacttcaattcttgactcctgtgcacccacaggctcaataccacatgtaagccac caatgettggteagggettgaaccetetgaageaatggeetgagetgtacgttgacacettttageetagacatetagga cacagggcaccatgacccgaagcttcataaagtgggagggccttgggactagctgaggaaaccatttttccatcctaggc 65 ctccaggcctgtgatgggaagggcagccatgaaggtgcctgacatgccctggagacgttttcccccattgtcttggtaact aacattcagctccgtgtgcagcaccaacttacttatgcaaatttctgtcactggtttgaatttctccccagaaaacagga tttttcttttctattgcatcatcatgctgcaaattttcaaacttttatgctatgcttcctgttgaagactttgcggctta gaaatttetteeceeagataeeeaaaattateteteteaagtteaaagtteeacagatatetaggggacaaaatgttgee agtetetttgeatageaagagtgaeetttaeteeagtteecaacaagtteetateteeatatgagaeeateteagettg ggtatcttttacagcagtggcactccccatggtactaatttactgtattagtctgttctcatgctgctaataaagacttactcgagactgggtaatttataaagaacagaggttcaactggctcacagttcagcatggctgggaggcctcaggaaacttac ttatgggaactacaattcaagatgagatttgggtggggacacagccataccatgccagctagagagccttaagaaagtca cctaatctccacaaataaaaggtttcctatttgttcaacaaaaataatgacacccttttatgggatttctgtgaggaca aatgataactaacatagccttgcatagtgtctggcacaaaatagctactcaaaaaataatagaaacaacatttaaaaaaat qtagactttattttttagagttttatgtacaaagcaaaattgagcagaatgtacagaagtttccgtatagcactcccta cccccaagcacagatagcctccccagtatcagcatcccgcaccagagtggtacatttattataactgatgaatcttatt tgacgtgtcattttcatccaaaatccatagtttatattagggatgcctcttggtgttgtaccttctatgggttttgacaa atqtataatgacatgtattcaccattacagtatcataaagaatagtttcactgtcctaaaaatctttgatcttcttccta

ttcatcactccctccccattaatccctqacaactactqctaattttcctgtctccattgttttgtcttttcctgaatqtc atatagtttaaatatacagtatgtaggattttcaaactggtttatttcacttagtaatatgcatttgatgttcttccata tetttteaaagetteatagtteaatatttatagaattgaataatattecattgtetggatgtactacagtttatgtatte attcacctatcaaagaacaccttggttgcttccaagtttcaacaatcatgagtaaagctgctataaacatctatgtacat gttltttgtgaattgaacattttcagcttttttagctccattcctaggagtgcaattgctggattgtatgatagaggta
tgtttagtgttgtaagaaactgccacgctcttcctaactggatgtactgttttgcattctcaccagcaatgaaaggttc ctgttgctccacatactcaccagcatttggtgtcgtcaatgttttgagcaatagcattttgatctaacttttcctaggta ttctttttqaaqqaaataatatqacaqataataqaqaaaaggatatacgaggacagttctgtcctttatttatagtccatc atttaatgaaggactctqtccacacttggtatttttaactctgatcctcctcccatgaactctgacaatctcctaaat ttttttgagacggagtetegetetgtegeceaggetggagtgeagtggegegateteggeteaetgeaageteegeete agtetgtcactetgtcacccaggetggtgcagtgatgcaatettggctcactacaacctccatetttcaggttcaagtga ttctgccacctcagcctcccaagtacctgggattacaggtgcccgccaccaccagctatttttttgtatttttagta gagacgtagtttcaccatgttggccaggctggtctcattcctgaccttgagtgatccacctgccttggcctcccaaagtg ctgggattacaggcatgggtcatcacatgtggcctgaagcatgactgttgctttaatcatatgaaatactgctctgtatt atgataccat gacacatat caa aag c t g t ta ta ta t t g t ta c g t ta ta ta t t g t ta c g t ta c g t ta ag ag gac c t c t g t ag ag t g t ta ta ta t t g t t ac g t t a g t a g t t a g t a g t t a gtagcactttcataccgttaatttttcattttgtgcccagccctactctgtgaaaaatgaaatgaatcctgttatcattt ${\tt acccaaagatgcccaaatgctgatccccagaacttgtgaatatgttacatttcatgtcaaaagggactttgctaatgtgaacttggaacttgtgaacttgg$ ttaaggattcagacccttggattgtaagattatcccggattaaccagggccaatctaatcacatgagaccttaaaaaaagc cccactgttgctggctttgaagatagaggaactaggccacaaaacaaggagtatgagtggccttaagaaataggaaaaag ccctcatctgacagccagctagaaagcagtcctctgaccacaagaaattggattctgccaaccactcaaatgagcaagga aatggattctcccctagaacctccagaaaggaacacagctctgtaatgccttgattttagccaggtgagacctgtttcag acttttgacctatggaaatataaggataataaagttttattgtatgctgctaaattttgcggtagtttattactgaagcaat ggaaagccaatacagacagaatatacagagagaaagagaatgagttctttcctgataattttgtaaatatttgggtcttca ctggacaagettcacagaggattcactggttccctagcaaaccagcatgtccagtcctgcagcctccctttcttaggccc agcatatqtcagctgtqtqcataqaaaaatcaaaqcaqqacctqaqtaqttqqaaagaaaaqatqqttqgaaatgggtt gcacttcaagtgaggaaacaagaggtaggagaccggcatctctttctcatatgtcccaggctgactcttgtgagttgttt cgacttccaaggactctgatgtcccacagcactagctaaacaagccagttggaaatgagcttaaatggggaatttcctg aatatattccctattgttaggaagccaggttggcttccttgcctacaattatgccaagcagtcacactatagagtcccta gggacatgatattaagtgattettttaacacaaacacttaataatcatttatactaatagcaaaacggccaacggctga tattccacttgaagtagaattggctatccaactggaagagaagacaggaagacgtgatctccagggagccactaaaagga $\tt ttggcacctgcctctggattccccttttccttatattacctctcagcactggcaggcctttatttcaggatacagtttcagcactgc$ caagtattatgtcacgtctctgagaattatgttggtagatatttgctcctctggccagaaagacctagtttggagtctgg agtcatgaaggtgacatacatgtagctagtgacataagtgtagctagtaaaaatagtgagtaatggccctgaaattctattgaatgcccaaagtgctgaccaggaacatgctctagcttatctcacaaggaacttgacaattttcttcaaaaatcc tagatageteaaagtgetgateaggateaagatgeteteagettateteaaagagaattgateatteteteagatgateatteteteaaaaatte
tagtagetaagattteettagtaacaaaagccactaaggcacaattatgattaacttgaccettaggtgacttttaaaggact
attetataaaatattacaactaatagtggatecaagcagcaccactetgetatataagattaattgacagtgtecacact
ggtaaaataagttgtttecataaatacattagaatteatttgcactttetacacaggcecaagtecagaactttecccaga
ataggtetatgttttgcaatctgctactccatacagagatttgagttcacttggcaatttagtgctgcttatatgtgacc
agttagtetgttttacttatetatgcettaaacattactaacttactaactccaagatgcetggtetcaacttgacaaa aataccccaagttgggaaatccttatgtgaatatgtagatagtcacaattgctggttgatgatgatctgtcttttcctgt atggtggctctcagtgtctggcttaggcagtaaacactttcgttaataaagacggaaaataaaaaggaataattggtgt ctaggggaaaataatgagctcaagttttaacactctgagttcccggatgtgagacatccaggcgcatttatccaagaggc agttggaagcaacgttccggagcttaggagagaggcatgaccaaaagctggtgggactgtgaaaaggtatggccattctg gaaaactgtttggcagtttcttagaaaattaaacatgtactaacaacccagcaattgtactcttgagcatttgtcccaga taaatgaaaaaaaaaaaagcatttttttacacaaaaacatatacatgaaagttcatagaagtgttattcataaaaaac tggaaaaaactgagatgtctttattgagtgaatgcttaggcaaacggtggtctatccatacaatggaattatgcttagca catctcaaaatggtatatactgtactattttatttacttaacattttaaaaaatagcaaaatcatagagatggagaacaga tggttgaaggattctatgtcttggttgtagtcgtgattgcaggaatctacatgtgataaaattgtatgggtctacatacg catacacacaagagcatataaaaactggtgacatgtgaagaagctccgcacattgtgccaacatcagtatcctagtttcaa tatcagactacagttatacaaaacattgtcattgagggaaactgggtaaagggaacacaggacatttggcatatattttt gcaatttcctgtgaatccgtaattatttaaaaataacagatatactacatatcaaaaatttaatgtcataaagttgatga gtttacctagtggatagctttgttaatatctgctataagactactgaaaatgacagttatgcaagtataagctcagagaa ctttcctccccttcgtaaatgaaatgagcaaaagaaatgaaacaggaaaggcaagcagtactgaaaacaggaagggctcttcccccatataactatatctgcgacttcaacagctattcatccagaaaacacagcctcttgcgctaagaggaaactttgg tcgtagttcataactacaacaagcagataaacgaaggccatggtgagggatggaagacattgtgatatatcaaaggcagg tagcacaaaccccgccctccagccccacccaaaaaaaatcactctgttctctccccattctttgataggcatacttgctg ttttctcacagccaaggtacagaggggacttagagggaactagaactctaatacactgctagcaggaatgtaaaatgaagc atctacttcagaaaaccattttatcagtttctagaaagttaaacatagacccaccatgcagcccagccactctactccta agtatttacacaagagaaatgaaaacgtgtccccacacagttgtatttaaaggtgatggttagccttgtgtgtcaacttg gctaggctataatacccagttactgaatcaaatagtaatctaggtgcatctgtgaaggtattttgtagatgtggttaaca

atacaatgaatggttatagcagccttatttgtaatagccacaaactggaaacaacctaaatgtccttcaataagtgaata cataaacaaattgtggtatatccacaatttttacgcagcagtaaaaaggaataaatggttgaataaggaataaacacata ttgaagttctagaaaatgaggactaacctatagtaacaaaaagcagaaaaattttgcccactggtgatggaggggggcgca tatettgtggcatggtttcataggtgcatacatatgtcaaaacatcaagttatacacttttaaaatgttcagtttactgt cctaataggaaggattttggagtttagattttaaaatgataaaggatgtttgacactctaggcatatgacgaatatagga ttatgagtccacaaaaaccaccaggaagtcatgtatgtttatacttttaagtgaaggatcagtggattatcaactccctaatgctttgcctctctatgactggctgccttctcatcccaatactccttccaaagccccttgcttaaatgtaagcct totttcctcctttcaacacatcctgcattccgtgacaaaataagttttccttaaacagaatgtacagcatattattgta tgaggtcaggagttcgagaccagcctggccaacatggtgaaaccctgtctctactaaaaatacaaaaattagctgagtgt agtgtggcaggtacctgtaatcccagctactcaggaagctgaggcaggagaatcgcttgaacctgggaggtggaggttgc 15 acctgattttqtqqcactaattccattqcaqtacttqtccqctcactqqcctqtqcctctctqccactatttttqqaata atgtcctctctccatcttgtttactcaactatatccaacctctaaggctgtgctcctacaaagcctcccctggctacttc agcccacagagatatttaactgctctgcagttcaggacattcttctgactctttaaatcacatttacttatatatgatct 20 aatgccaagttagaaaaatattattgattttatatagattatagatatgtttgaaattttatttggcaatctgcaagtag aaaaataattataatgtggtatatctgtgatagaagtattagtgcagagaccatggggaacataatccagcctggaagtt ttgagatggagtctcactctgtctcccagcctagactgtggtggtgcgatctctgctcactgcaacctctgtctcccggg 25 ttcaagtgattctcctgcctcagcttcccaagtagctgggattacaggtacctgccacacatggatgataaatatgatca tattttettgttetttteeteeteagttgtetteeetgaagaaaggaatgeettttatagatgacaaacteeeattetea agaacaaggatttttgaccaatttaatttaatcagatgtctggctttgacctagaaacacagtcacgaaacttggtgatt agagaccaattcccaaacatgagcatttcttaggaaacacagtaaagatctgagagacccaagagcagaagggcgagaaa ccaaaagccatcagtttgcataggaaacaccttgtttagcctaatctttttattttattactctattagtcactacaac tattttctgattgctatggtgatagatggtttaaaacaagccttcattaagaattgtcacaccatggtctcagtcaaaaa caccaacatttttattggtattgacaattatgggaatatccaattccaagaagacaaggagacctctgaactttctaaat gaagactecaatetteetgatetgatgggaageagettggcaagattaceaaceaecaecaeagagagtggaetetaage acgtgcaaaagtacggaaatggtaaaaagtaatactacatagtcaaagccaagcagagttcagaagggatctggtggtga 35 aaaatacggctagagaaagcagcaaggattggcttctaaaacctatgtagtatcttggaccttaccctaaatgtaatgag aagcttctaaagaatctttcatttattcatttgaacaaatattttgaggctttctgtgaagaacatcattctaagtagtaagatacagcagtgaataggacacataaaatcctagatctcacagaattgacattccagagagggaaaggtagacaa 40 gctgcgacctgaaggataccgagaagctaggtgtgcaaagatgtggggacagaacttttggactgaatagcaaatacaaa tgcccttgggtgcaagctttgcctgttcaaggaccaaaaagaaggccagtgtgcctgcagcatactaagcacagaggaaa acactgttatatgctgagattggaattataagtagagccagataatatagtctcttataggtcataataaggcaaccaga ttttattccaagaggatttaaaaatcactggaggttttgcactagggtgagaggtgtgatttgtatttttaaaagataat tctggagaattaactataatgaggtaggagtaaactaagttaggggctatttcagtggctcagacaagagataatggtag cttagactaggatagtagtagtagaaataaataaagtggcactctactttggggggtagagtctataataggtttggttt atggatcatatatgagagtaaaaaaaaagaaaataaattaataatggttcctaggtttgtacctgagcaactgaataaatg cccagtggagatttcaggtgagtggagcccattgaaaggtaagggacagggtcaggtgtggtaggtcaggcctgtgatcc caggactttggaaggccaaggcagacagatcagttgagctcaggagtttgagaccagcctgggcaacatgggaaaaccct 50 gtototacaaaatatgcaaaatattacotgggcatggtggcatatgactgtggtccaagccaottggggggotgagatgg gaggatcacttgagtacaggaggcggaggttgcagtgagccaagatctcgccactgcaaaccagcttaggtgacagagtg agaacctgtctcaataaataaataagaaacgtaagggaaaaggaaattaatctgatcattggcaaatgcatagtatttaa agccaggggagtagatgagatactcaaagtaggtgaagataaggaggcaatgaaggcctaggactctggtgtacatttag atggttataagagaatagaaactggcaaaataagtaacactgagcacccaatgaggtggagaggaaagccaggagatga 55 agcatcatagaaggcaagaagaagggtgtcaaagaggcgaggcagtcatcaacttctgggcagtcaaataatatataagg acagaaaagtgaccattggatttggaaatatgatgagcactttgagtggagtgttgagacagaagaccaattagagtaga ttgaggagataacgagaaatgagaaaatgtaacctgcaagcacagacaattcttgagagacttttctgtgaaaggaaaca gacacagagtettagcatgtettgtetttetatgggaaatgtaaatagtttgagateagggatagtattttattetgett tttgtacctctacattacctagcatagagctagctaatgtgcacttaagtatgttctcaattcttatcgcctgaatgact 60 acaggaaagtaagacattagaagagteettagataatttatgtaattgtteettaggatttttaaatgtgateectgat attggacatgttcctagtgaagcatttttggtgtttcactggttgaagttaataactgtaaaattatttcccgttcagga cagaaaaacagaaaacttgaagctcctattagaaagttcaagattctctggggttcttaggatttactgttcccaaaact ctgtcaagaacaagaacatgacctgtatacttaactggtctaggcaacagtggaaagacaattctcagagaagatttgtt ttaagaagacactttccataggaatcaaacaatagctttcagtgactaacatggtaagacacagggtgttagctctttcc ttccaacctcatggctgttgtaccttacctttcgaccccgtgttcctgaaattgttaaattcataaacttaccaaggact $a accage cetegggg a \verb|attgetg| tatae cetege a accete acategg a cataetet a tata age cete a tatee accete ac$ aggaaataccctcaactgaaaatgagagatcatcatttgcaaatgagttcccttgcccaggcaactactggggaaaatgt catgcaagcaaaattaatctttgaaatcctccttttccatttttgtgtcttccttttccataggcaccagaaatatcat ggtgcctggatctcatctctacagaaaaaaaagtgatttgataaaactgatttatattgtgtccaaatgtgattgtattt ygtgotggtatoccutocutocutoggtgtetgtctggcccaacagcaggctctcgacttcatttcagacactgtggccaatggc tgggaaacaggtatgaacagtaggtttctgagtccctggaattattccatttatgtagccacctccatgacaggaagcc tecctactettactteccagtttgttcattcatggcaccaggttgcagattaaaatttgctcagtgaccttttatctaat aatgtgttaccttcttctcttaaaaagtacaagggacaaatgctcatggtatacttttaggagattgtggctctctatta acagtatttattcaccaaacatttattgagcatttatatgtgcatcatgctagggactggaacctagtaagtgtagcaca cagaaccagttaactaactggttcaaggtcatgcaatttctaagatacagaaccaagagtcaaagacatgattttaaacc aaagetttttetgetaetecacattgetteeetaggtgagatetgaggeatteegegaaaagagaaagggteataaageca

accatcttactggattctaatatttaatagtctaggtgttccatttctcaccaaattaatgtatacatttaatacaatgt caaacgaaatatcttaggaattgcttacaaattgtcagataattacaaagtttacctgggaaatataagcatatatgaag atacaaaattctattataaaggtgtattgatgaaaacaatttaatactagtgtagcaataggcagcaaagcaatgaaaca gcataaaaagaccagaactatacctaattatgatgaagatttaaggtatgataaacatgacataattcaaatcagcagaa tagagtgcaatggcatgatcatggctcactgcagccttgaactcctgggctcaagtgatcctcccagctcagcccccag gtagcaggaactacaggcatgcgacaccccatccaacttatttttattttttgtagagacaggggtcttgctttgtttc ccaggcttatctcgaacttctgccttcaagcacctcagcctcccaaagagctgggctgatgggacatttttttaacatagt cagtaagaaaacaatgaatactcccaatggagtattcaaaactaaactgctaaaagcaattcaaaacaaaaaacataaac tatgcatatatgtatgtgaaaaagtttaaccttatcaaagaagtaaactctcaaagaaataaacatcaaataaggaaata gttcggcatgtaattaatatagatcagaacactttaaaaatatttataggccaggcacggtggctcatgcctataatccc agcactttgggaggccaaggcgggtggatcacctgaagtcaggagtttgagaccatcctgaccaacatggtgaaaccctg tetetaetaaaaataeaaaaetageeaggeatgttggegtatgetggtaateetggetaetegggaggetgaggeagga gaattgettgaaeeeaggaggtggaggttgeagtgagetgaeattgtgeeactgtaeteeageetgggeaaeaagageaa 20 aactctgtctcaaaaaataataataaataaataaaaaatatttatatactctgacccatcaatttgtccagcataattag gtccaaaatatagcctggcctaacaacattctgttaggatacgcaagcaccgtgaggagatcagctataaagtatcagtg 25 tttcacaccactgctcctttgctaataaccttcaatggcttttaaagaagtaaaaaacaaaggcaaaattccttagtcag cccttaagactctctgttacttagctcaaactacccttttcaacaacactgccctaaccaggatgagttttttgccccc tggagtacattcagcctttccttatcaaaccttcctttaaataagtatcttctccaggaccacttcactttcttcccaa tttagcattttctatatctccaggcctacctctataaagcctgtcctaaccactcaaaccctagctttttctctgaactg ctagaaatatttttctctcattggccatttaggtaaaaaggtttttactgtttattacctactcaataaaaattttctt 30 ttttgagacaaggtettactetgtegeetagaatggggggaagtggtgtgateacaaeteaetgeagettetaceteeca gctcaacagtcctcccacctcagcctagtgagtagctgtgactacaggcatgtgccaccataccccactacttttcattt tttattttttgtgagatggaatctcactatgttacccaggctggtctgctgatctcaattgatcctcccactgtggcctc ccaaaatgctgggattacaggcatgagccacaatatctggccccagtaagcttttaaggccattaacatgaggaacagtg ttctttacactattttatcagctagggctttgcatggagtaggagtttagtaaatgcggttgatgggttaatcaatgtgt gaaaatattcagagccaccaaaaacagatattatgtctattctcatcaacaatcaaaattgagtaaacagccattttcta caagttagcaaactgcaaaagataggaagcactaatgagtggaaatttgagtagaagcatttcttatgaaggctgtcttg actogatoacatttttattgctgttggaggtgccaaatgtgtgttttatgctaatcctccacctcaggcaacacagt actgatcacacttttatigtcgttggaggugtcaaatggtgtgggggtcaatgcccagggttgttcccttgcactacgggaaaa caaggatcctaccaagtgttaccgtcaagtgtctgttggcagtcaaggcccagcgttgttcccttgcactatgggaaaa gacatattccaggtacaagtactcccactttgatgctaccagaggagttgctgaactttgtgtcattaatctctctttcgt agatcccaaccctgtttaaatcccactatctgcctactctgggtcttcaccaatttactagatcatagttggagaaaatc tacaaagccttgctccctttagatttaaacaggtctccgtttaaatttagaattgctaacttcaagcgggcccttatgcg 40 acagtatgcctgtcagtcatactacatttcctcaattccattcatgtgactgctccatacccttccctctcttcatac tactattatetettecececteceteattttaactgatgatettgtttectatttetetgagaaaatagaagecateaa aagagagtttccacaaactcctactgccttatctagccctgtaccatatactttgcatttcctctcattaccatggatgt actgcctatctgtgcttctatctaaggctaacccttccacttcagttttgaatattatcagctcttaccaactcaaggcc attgctctagcaattctctctctctctctcttttcttccatcaagttttcctttcttcaattaacagagtagctccta aagggaaaaaaaagtcttctttttcaatgctcatcatcactggccatcagagaaatgcaaatcaaaaccacaatgagata tcatctcacaccagttagaatggcaatcattaaaaagtcaggaaacaacaggtgctggagagggatgtgggagaaataggaa cacttttacactgttggtgggactgtaaactagttcaaccattgtggaagacagtgtggcgattcctcagggatctagaa ttagaaataccatttgacccagccatcccattactgggtatatacccaaaggattataaacaatgctgctataaagacac ggattaagaaaatgtggcacatatacaccatggaatactatgcagccataaaaaatgatgagttcatgtcctttgtaggg 55 gtggggaggatagcattaggagatatacctaatgttaaatgatgagttaatgggtgcagcacccaacatagcacatgt 60 agtggcatgatctcggctcactccaacctccgcctcacgggttcaagtgatccccctgccttagcctcctgaatagctgg cagagtctcactctgttgcccaggctagactgcagtggcatgatctcagctcactgcaacctccacctcctgggttcaag 65 agtagagaccaggtttcaccatgttggtcaggctggtcttgaactcctgacctcaaatgatctgcgcacctggacctccc aaagtgctgggattacagacttgagctactgcgccgggctattttgtgttttttagtaaagacggggtttcaccatgttgt ccaggctggtctcaaactcctgacctcaagtgatccgctcaggccctcaaagtgctgggattacaggagtgagcc accatgcctggccataaaactgccctttgttaatatgactgttggcctgcacattgtcaaatccagtggcattcatctta 70 ctcggccaacctacggcatttgacactgtctgtctttccttctgttcctctatctgtttccagtatactggcctggcttt ctttttacctcttttatatgctcttccagtctcaggctcctttggggatttgaaggtatgttgcattttgctattcaatg aataatgacaagtaatgatcacttaagacattaagtggtcagttcctttactaggataaaaataattttcttcccaacat ggggcatattccatttccagtctgactgttctgtgtaatctttgtattccttggcagccccttttatatcagttcatcta ctgtgcaggaaattggacaaacatttgcactggtataaccaaatacagttgaacttttggcttgactcttagctgaactc accaaaaataatttctgtaaggactgagacgtctacgagtaggtttttcagaattagtaaacataaatcaaggatacac aggtagatttgaatttcagataaacaacaaatacttttttagtatgtctactgaaatatttgtatcttatctggcaattc tacctggtacagaactaatccattctcttgaaagatcttgactctgtaataagttctttggtgatggaagggaggtattt aaagaaagcaggagaactttctgtctqcactttacatcagaacaaccttggcgtctagaagctqtqccctqtgggaagtg gtggtgcttggtaagagatgccaggaccagtggtacccactgggagcactgccaatacccagcaaggagcatgggtgcac agtaaggcattgcactgtgattcagcataaaataacaataagggaacgtcacggagaaaaggccagacttcctttgttta

gaatgtgggaaatgtcttctgaaaaatggtagtaaaaaagcatgcttggatggtccactccaggcaaaactgactaatcg ggggtcagggatacaacccctgcatcatatgtttgtttctgtttgggctgacatgaggttcactgtgaccactgtggttta actgatcagcttttcacaactcttatcctttcactaactttggagcaagatttgagaattggatggctatttgagggcta tttctgcgctttagttcaatgttttgttctttctttattagagaactatggtttttattatatttacactttaagttct cttcctgtgtccaagtgttctgtttatgtgatagattacgtttattgatttgtgtatgttgaaccagccttgcatcacag tcacttgcttacaagaaacaacacttcacagatggatcattatgtgtgataagtgaaatccaaggatttatgctcagag gtgggcttaacaggtaggaagagcagtattttccttcaaccatgagtgtatgcaggtttttctttttttgagatgg agtctcactcttttacccaggctggcgcagtggtgcgatcttggctcactgtaacctctgccacctgggttcaagcaa ttctcctgcctcagcctcccaagtggctgggattacaggcacctgccactgtctccggctaattttttgtctttttagtag agatggggtttcaccatcttggccagcctgtcttgaactcctgacctcatgaatcatccttctcagcctcccaaagtgc tgtaatttagataggtaagatgaaattttgataatatttgatggcaaatttaaacaggtatacaacaaaaataaaattct aagcccctcaaccaactgaatggactccttctctcagccaaaggaataccaaagtaaacctgaaaaactagttttggcca ggattgggggtaggtgggggaagccaacatgactcattattctctcctcctttggaattcaggcacaactgaatgtca gcattgacactaaaacacagatcttaagactgacaagccagactctttgtagcagagagccaggccctggaagaaatcaa 20 gttattttatcccaaaaaatatttctttgatatattttcaaatggccctgcaaagctgtctcttgtggggaaaattgaca tgctgtacagaatttccttctctttccaagtttttactgatccaggagagatttaactaagaggctagcatgttttttt tttttttttttgaggcggagtcttgctctgttgcccaggctggagtgcagtggcgtgatctcagctcactgcaaccttcg cctccogggttcaagcgattctcctgcctcagcttcccgagtagctgggattacagatccatgccactatgcccagctaa tttttgtattttttgtagagacagggtttcaccatgttggccaggctagtattgaactcctgacctcgtgatccgcccac 25 ctcggcctcccaaagtgctggcattacaggcgtgagccaccgtgcccagcacaagacatttaccgtctattctctctgaa attccaggtctttagataataacaactctttcaaccaattgccaatcagaaagtctttgaatccacctatgacttaaaag ccccactccttcaagttatcccgcctttctggactgaaccaatgtacaccttatatgtgttgatggatatctgcctgtaa cttccattcccctaaaatgtataacatcaagctgtaaccccacccttgggcacatgttttcaggaactcatgagactg tgttgcagaccttggtcactcatatttggctcacagtaaacttctttaaatattgtatagagtttggctttttcattga 35 gcactcagctcaccacgcttcagtctcactcccctattagtctgattaaaatctgcttacatgtgagtctgagatcaag tgttatctcttctgagaagtcttccctcactggcccaaaggaatttctcctctattttagcactgtcccagttgacttgt aaattgctggcctttggggttggcaatggaggggaggctcttcttgaaaagggggaagagtgttctcctaatatttttct ctglcaggaactgtctcaattcttgaagttcagagtcaaaaaagaagcaagttttcctagctctttgatcaactttcaaa gttttacttccatttgaaaatttactaagtcaccaggagatggtttatactgagaaatatccactcatactcttcctctt caactttettecatatacaccetattacagggatatagtettactetatageteaaaaggatgaccetatcagaaacetg cacagtatgtaaaacattctcaccagaggttcacttgtgtatttccaccctagaatggaagctctacaaaagcacagaat gtateattitaaetttagattetatitteaeaeceagtgettgaeaeatgatitgaagttaatatttatttateaagtga ttgttttaaaatcatgactcactcaacaaagttataagaataagaatagtgttacagaattggtatacacaagctgacca gttcactgcaggtttgaacttccaggctcaagcaatcctcccacctcagcctcccacatagctgagcccacaggtgtgtg ccaccatgtccagctaactttttaattctttgtagagacagggtcaccctatgttgcccaagctggtcttgaactccttg
gctagagagatcctccctccaaggtccccaaaatgctgggatctcaggcaagagccaccatgcctggccataatcaata
cacttttaagaatgctagaatgttatatcagatgcatacttcagcactatctcaagcaaactggggttgggttattcta
catataaagttcagcagtgttgttccacagtcccaaactccaactgaggtcaaaatgtagggtgcagcaaggtcactgggg
ctgtcatcaagggcctctccttgcactcttgccaaccctgtttcttgattgtctctaccaccatgagtcaccagcaatct cccacagtcacttgtttaaaagttcacaagtattgtgtggaattgcaggcaaccccttgactccctgattgcctggtcttc ttccttgggctctaccattttttttccccagcactctttctgctgctctaaattttaattcatgcaattccatatgtgtt 55 caaatagacccagggtcttttctgttcatcactcagctttttataggagatccaggagaaatgaagtggaaagggaagtg 60 ttaccttctctactcatagtagtactcagtgcgttcttgatgggatgagaatgtgtttgagctttagtgtaaggcagaa ttotgtttagtotgocagtattggagaaaaataaaacaaaagggactgacatgtaggaagtggcacctggggagggtcto aattetteetattaeaaaaatgeeecagagaaataaaaagettgtgtaeatgttgagattgggagagttetetggeeece tcgcaggatgtgtgacagtggggtggctctctgctgcgccaccatgagctcaaaacccctcataggagggggagcacacag gaaagcccaagtgggcatgtgttacagtgcactctttcagctttgctgtctgcagcttaagcgttaaccagctcagtttc ttcttggtacccaggtccttgtctggcatccaggaagaatcaggttacacatggacttgaaggatgaatgtgggagtttt 70 acgagtggttattttaatatttaaaatacaggcttggatgtatttcctgttaaagaaaataaaatgcagaatattcaaaa cgtctgaccacccttctaagaaaatgcatctctgaggtatttttccttagaagttattgtaaaaatcctggagaagcttg aacacagcaaagcaaacaggatgcagagtttaatctgtgggaaagcttagggaagaaaagcaaatcattaaaaataggtct tectetgaagatttttaaaacgcaaagaggtggaatagcaatgataataaaaaagetggcatagagagtggcacaattt gctgtgccactgagctgactggatgtgttctgaatttctaggcattagtgtacctttccacacgcattctccctttaaaa aaaatgeecacacactgaataetttttteatgeaatttaaaataagegeaccatetagtttacagaaattecactagaagt

aagtcttgaccagacatgacagaatagaaatttctttttcctatttatctctttgaataaaattttcaggatcttacagtg gacaagtttgttatctacacattgtgaagcacattgatttctcctctgtagccttaggaagatctgagaggtgactgagc tgattgaatgatccgtgaccgctctactgggaccagtagtagaactttactggtggagacctgctggaggtttgagagca gactttgaaaattactagagctacacagatactgtgtggctaactggattatgtttagaggctttcagaactatgctgct gctgctgcagtgtagccaggacgcacagagaacatctaaggctcttgaatggggcgataggggacagatttcagcagccat ctgacttcagtgctcattttgatgctttccctgcagggtgcagtgtgcagtgtgcagtgtgcagtgtgcagtggtgggaggctcaca caggaatacttgcttctgtagccctaatttccggttcaaactctgcattcaccttgacagattctttccttggccaaaat ttagttaggcttctgggctttctcttatgcccacctgcagactttttggtaaaatccagttttagtaaagagctctgcta 10 ctattaggttctgttagattagaatcctccttacccttgatgcttcctcttagtattttttcatccactgactccttgac ccaccttgctcctcggctataaattcccacttgcccatactctgcagttaagactattttctccccactactgcaaaatc ccattgccatggtccctatactatctcaatggtaatgaataaagtctgccttaccatgctttaacaagtaacattgaacc attttttttttttaceatctgctgcacaatgagattactaaaactttattccattttgccatgctggatgtcctcaatgg 15 tgtgatgtatgttacatagttttttttcatgttgatcactttttgcccattttcctatatcttatcagttggaagactgt agtctagcagcagcacagccaaggcacttggggtttcatgagactaagtacatgcaattctattgtaaaggcttaaaata tatacaactgaccettgaacaacatgaatttgaattgcatggtcagttatacgcagattttcttccacctctgccacccc tgaqacagtaagatcaatcaatcctcttcctcctactcctagtctactcaaagatacttgaagtctacttgaagatgac aagcacaaagacatttatgatgatccacttccacttagtgaatagtaaatatgttttctcttcctcctaattttttaaca ctttcttctctctagcttaatttattgttaagaatacaatctataatacatatgacatacaaatatgtcttagttgact gtttatgttatctgtaaggcttcaggtcaagagtatgctattagtggttaagttttcgaggagtcaaaaggtgtatgtgg actttcaactgcaggggggtgggcaccctgccccatgttgttcaagggtcaactttactgccaaaggcaagcctttac 25 caaattqqccactcaccttqctctqtqagggqtaaaatgcccactttctttagtaatatttaagttagataatatttaa aacctcccgtatagatgatgaaactccttttaagggctatctgaattttaattccttgaaaaggcagaaattggatagct agtagtcataaatgtactgtggcttcccccaaccatctgggctatatagaagctgcatccttggactgcagtagaggagt 30 cttacaaagcacagagcaacttctctcctgggttgcgctagttatgatggcaattttaaatgtgtacttttacccaaaga aaatccttattatcaacaatcacaatgccatcataaccatggtataaaaaattcaaaatgtcccagctgaagtggaggca aagactcaagttcatggagtcagagtttccttgctattcctctttttcaaatgaccatttagtaagcacctgaagaaaat actatggacggcattgaaaagtgaagataggtttaatcttctcgaaaatctaattctccagatgaaacgctgacacttat $a catttc cat gag \verb|ttctg| a accat gg a cag a acg tcg tctg tgg ga cat ga a acttg ga a cttag agg a cag gc a cat consideration of the co$ tgagaaatgggcagtttaaaggcagaacatagcacatatgtgactgggttttagaagcaaatttacaagacgcactcttc ggatgagagagtggagattaatggtgggcagagcgaggtttagaacttagtggtttcttcaggttctgaactgaaatttgtatactgtaaaggcacaaacaccatttttaacaaaagtgagcaggacttcctatctggttcagaaaataaggtgaataa a tagtacga attatta aaaa ataa tattccact tatacatagga aacttga tagga accatga taaa tgctta actcttaatcttcaaggaactctgctagggatataatattataaatcttgttttgcagatggagaaattgaattttaacccaagtt 45 caacctccgcctcctgggttcaagtgcttctcacgattctcttgtcccagcctctctaatagctcggattactggcatgc accaccacgccacctaattttgtatttttagtagacaaggggtttctccatgttggtcagggtggtctcaaactcctga cctcaggtgatctgcctgccttggcctcccaaagtgctgggattacaggtgtgagccaccatgcctggccccaaatttat ctttaatgccccaaattatctagttcccatgactgggcttctgctttgatcctttctgcacttgctggaccctctccctg ggaaatgagattgtgtcctgagcccctagttagaggctatgtctctgctgttcctgaatgggcctcctggatgagacctc attaaaagtetaattetettggagaattgagagataeetatttgteteaaaateattgaaaeeaattaatgtattatgag cctctatccagtgatttgtacctcaattccccaatccagctgtcaaggccaatttgttctaccttaccttacctagtaggtaagt ctggaattgtagctgtggcattttcagtaatggtactctaggttagcagtccccaacctttttggcaccagggaccagtt ttgtggaagacaatttttccatgaagggctgggcaggggagtggtttcaggatgaaactgttccacctcagatcatcagg cattagattctcacaaggagtgcgcaagctagatccctcacactgcagttcacaatagggtgtgcactcccatgagaat 55 ctaacaccgctgctgatctgacaggagacagagctcaggcagtaatactcatttgcctaccgctcacctcctgccgtgca gctcagttcctaacaggccacggaccagtactggtccacggcgcaggcatcagggacccctgttgctaggtataagcatc tggctgctgcttgtcttcttgtgtagctacatctgtatgtgtatctgatgagatataaattatttgattattactttcttcatattagagttgtgaatgagtatcacatataattatacataaactaggaatatgctttttaataatgtatataagt aagtttoottaactatgactttoatottagogtagtaagaggtgotaagaaatatttgtgatgaaaataggcattggta gagttgagaccactgggtgatgaaagagtgtaaagattttaaagcottcagatgctggttcaaggtgagaaatgtgattg ggagcaaatcaattaacttettgaagtettatagggcagttatgaatacttaatgttaacatatgtaaagctettetgee gagagaaaaaaatgctgtcagttttactgttcttatagagagcaaggcagatcccaattcccaatgtggtaacgtgaaaa 65 ctggaattctcctttcttattctttttcctcctaccaagaccgcaggatcttttacttggctataaggggtaaacctcaa gtagtacaagttctctgtattacttttatactctgtcacagattccctttgtttcctcatctccatgtgaatttagttaa taaggccccaacctaatatttagtgatatattaatgtgaacaaggaactaacgaagactgggaagaaattcacagact 70 tgagagaagaaatggcaggatttcctgggaacaatttcatgtaacgtcaaaggtggtaaaaggtcaaatagaatgaagat ggagaataccggattttcttacaaaatgatttcccaggagatctcatcaaatgcacgaggataccttctcagtttcacct aaataatagcaaaacagaaatcaaacactcaaatttttggtccttctgtttatttcattttggatactcagtgaatgtta attaaccaggaaacttaaaagttatttcaattatgaacctcttcaatccttcatcaattattttgagtattctggtctta 75 aaaacatctctttcttctacaaacttctgaaagagatgaacactccacctacaccaaaataatgtgctttgctggccaa aagtacacgtccatttttacttaacagtctaaggaaagtctggtgcaaattactataataatctgggttgtaaatggttt ctgaggtgagaatgagatcatattttacaaaaagtttttcactacttagtacaagcttacaaaactcagaccactcacca gaaaaaaatcggcatttatatagttgtgttacttttggtttcctgcatcttttcacatctggctcatttacatcattttc gaatttctttggaccctcccttgaatgcagttatacctagtaaacctgatccacaaccaagatccaagacttttttccca acctgtaatcagatcagagtgagaagaaaagctttttgaaactatgttttctccagggaagttctctttcaacaagatgg

ttttcactactgataacttaacatgctggaaacctggtaatgtttctatgactttattttctaacatcttctttaaatct actgagtggactgtctgtgtcttgagagggagctgcattttccattgacttatgttcccacacaagtgatcctgaggcaagt caaattgttctgcagaacattttctgtccctcttttttgactttctgagactgacagctcttttgaggaatcc agggtcaaagctccatctctaatgggtgttaattcattttccagatggtcttctatagtgaaattaaactgaaaggtcat cctcttattaaatgcacacaatctttaaattcagattcttcaacttctggatagaatttgatgatacacacaaatctgcc tcaattattcaattagttttgttgggcccaatttctctttagcagcttatacatggtaacaaatatttagagatatttcc cttttcttaaaaagttgtggggaagagagagagataagagatttggacactcatacacaccttaagggttccaaagtgg gagaagaaaatcaactataaaaacaaaacagaagaacaacagcaaccaccaccactaccacctggacaaacataaagtcca agatattcagacaggacagcctagctacttgctgtctttcagctgtcttgatttgtgtccaaccatattcaccccctaag cttccagaataacttcacttctgtcttttacagaagaggtgcagtattttattttggtaagtcagcgtccctttaaaaaac gtatagaagtgggggtaattttggcaataattagtaaagactaattcggtggcagagcaaacgcaaactagggcactgcag tagtttggagagagcetgtagaaataagaagcaactttattgagaatettetatetactgegetagacactataccatetg cctcaattttcacaqttctqqcaaqtqqqatctttqttccctttatacaaqatttacaatttgggggagagggggtcac ccagtcccgcggctaggaacgcgcctctttcctctcccatcacgctgcaaggcttggagtcacttccggctgcaggtccc ggaacaaatccgaccccagaagtggggacttctggcctcacctccccatttgaatgtaatgtttacagtgatccagacc 20 tggggatgcttgcttcccgacgtgtcctgggatcgcgcttctgaaaaagctcacctcacaacgcctcctccggacctaaa tegegcaecagtgagtegagteeteeagyggetagagaageeegaetttettteeggeettgagggaecegggeteaeca agaaaccagccgcctcctctctatggttttggagccggcggagagcgccaagggttggcgggactgcgagtttccggt ctgggctttggcgggtctggtttgaagctctcctgtttgacgaaagtatgtctcaggaaggtgcggtcccagctagcgcg 25 aggggaagcgacaaccgtggtagatttaagtaaggctttggccctggaaagcctcgcggacgtgttctgacccaaggttt ${\tt ttgctagtggataatggggaggcaaggactgagacctgcggtatgacgatagctctggctcttaatagtttgaggtaaa}$ 30 tattgtgcagctaaagccctatgtaatcacatagaagtcattcacctaggcattagcaaaatctcagaaggtgccaaagc ccccttttttagtttttgtgtaggtacagaactgccgtcttcaaggagtttcaacttgaaaacaaatagccaccttcaaa acattcaaaaacacttaaactgcgtgcataatgtgtgtgagacatggtgttaggctttgggagaacagagacacggaacg tgattcctcttcttccccacaagcttatagagagacttcattaagttgaaagtcaacattcccacctagctttgcacttc aaacgacatattcaaaaaagcccaaacttcctctagttttcttcatctgagtaaatggtttcacaaactgaaaccttgaa tectetetgteteacacaceegateagtaagttetattgtttetgatteeaaactatgtettgaateaateegtttatet ccatcotcattgctaccactctgattccaaacccttatcacctctcacttggagtattaatagtttccttgtttctactc ataattcattattccaaaaaagttaagagggaaaaacatagatctcgtcatttccctttttaaaccactttaccttcaa cctacctcaagatctttttgctcagcctgatttgttctctcagccttttgcatatttcatgtttatgtcttggcccaaat gtcacttccttagaggggctttttcagagccttcaatcttaggcagttcccccaaacgcagtcttacacttgtatcacat acatagtaagcattcattaaagggctaaaaatatttcatgttttaaaaatacttgggagtctaattagacaatacttttt ttcagcttaatggtagtattttagcttcactattttaacaaatgaaaaatttgcaataaatctacaatgccattaccccc caaaatctttttcatgttttgcattttacgtattattttccaggccttacctgcatgtctgcataatcataactgactaa ttttggaacagctggtaattatttgagctttactgaaatttttcatgaggccaattctaccctactgaactcaaattt agttaatgatgacctcattttgattgctgctgtaaaaaataagattteggaagaggaatgaattcttgtattactgtggt aggactatgggttttttttttgtttgtttgtttgttttgagacggagtctcaccctgtcacccaggctggagtgcagtggt 55 caccatgcccggctaatttttttgtatctttagtagagatggtttcaccatgttggccaggctggtctcgaactcctgacc tcttattaacattctttgatgattcttatggtgttgttacagtaaaacatttctaacaattattctaacaattattcttg atggtgtatatgaagaatttattgtcgtgtatttgtaagctgctatgtgcagaagaatttcagtcaaataaagttggtaa 60 ggaaagaaaaatttettgtaatagaaateggaagtacaaaetgggeatggtggtgtgcatetetaateecageteettga gaggctggtatgggaggatcactttagcccaggagcttgaggctgcagtgaggtgtgatcatgtcaccgcactccatcct gggtgacagcaagaccgtctctcttttttttttttttgagacggagtctcgcctatgctggagtgcaatggcgatct tggctcactgcaacctctgcctcccagtttcaagtgattctcctgcctcagcctcctgagcagctgggattacaggtgtg atttoatgactatgcatagtttgaaaaggcaagtttgtccctgggcaattttcaaaatatttctttaatgtgttttcaca atactgtttacctaataaatcttaagtttttaaaagcaaaattaagccagtaatttgagtccaattccaatctcttatga 70 agtatetteettaattateetacteattgteteaacattetgacagttggattgageatattegtaagtaaaattgtttt aactgtatgatgtactttgatgttaaggtccgagtccccacatacctcggtagatgtgttcttacagttttgtattccct 75 aaacgttagttgttacgattagacctatataaaacatgatatgcagtctactgaatagctatcagcctctaacatgttta gtgtcatttagaaaatgctttctaaattgccaaaagctgattgtctaggtgataacaaatttaccatttggaggaagttg tttactcatattttgagttagcttttctatttagagttcacttggttgtgggaatattcatttataatttgaatctacgtt gigtaatgggacctaattttttttcctttgtttttgttggagtctcgttttgtcacccaggttggagtgcagtggcgtg atctttgeteactgeaacetecacettccaggttcaggtgattctcctgcctcagtctcccaagtagctgggattacagg catgcttcaccacgcctggctaatttttgtatttttagtagagatggggtttcaccatgttggccaggctggtctcaaaa ctcctgagctcaagtgatcctcctgccttggcctccataagtgctgggattacaggcgtgagccgctgagcctggcccca

tgcagcctgaactcctgggttcaagctattctcctgcctccatcttctaaagtgctgtgattacaggtctgagccatgat gcttggcctgtgttttgtttgtttgtttgggggacagggtcttgctttgtcaccaaaactggagtgtagtggtgcgaa aaacatatagaaaaacagaatacaaaacatctaatctgaaatggttaagattttgatgagaacagtctcatctca tttccgtatattcctgccagcctatccatcattcttcgtacatgtttatctacattaaaattggtgttatatttttggaaactttttgtttagttaactacattgtgaacatttttcatgttttaaaatgtcattttaatgatggcagatcctattcaatagatg 10 taaagggcagtggcctttgttgactgacatgacaatatttttataaaatttgttatttgctttacagaaattttgaaaat 15 cattaggcagttaaaaactgttacaggctgggcacggtggctcatgcctgtaatcccagctcttgagaggctgaggtgg gcagatcatctgaggtcaggagttcgagaccacccatggtcaacatgatgaaacctcgtctctactaaaagtacaaaaaa ttagctggacatggtggcaggtgcctgtaatcccagctacttgggagactgagacaggagaattgcttgagcctgggagg 20 aaaaaaaaaaaagaacttatattttcagattgtgtggttcctttactaactgaatttaaattatttgtagtcaattttaa aagaaaagctggaatattggcaaaatcaagtaactaagagaaaacattaaattcacagaatacattattacattttagat atatatggtatatgttttctctgaaaagcacaagcataccttttttgttttaaatggagggaactaaagatactttggtg 25 ccaaaatgaaacattatttgtaattaatctcttattgaaatgggtttctaactttagctttgaatcgtaatctttcaaat ttettgtactcatagtcacttgatgattetetatetgaaatatttettagaatttgttettgaccaccagaaaaagatte aactgttacatagatgaaaatggalgttgagtgttaacaggcctatgggaaacaglattttctttagctacattgtattg ttgactgtgttgctattcttataatgtttaggtcatttaaattgttagaaagatccaagtattaagatctagggtggcta acttttaaagacaaaaagcttgtttgtaaggtcatttactatacccttaattcaggaaggttagcttgaattgggtcaa actgtatgaatgtggattcttcaagacagtcaaatttattgtgcgaaagtaatacttttattttttgcatctctaaaaca ggggcttttggggggattatgttgtaaaaataccttttctctgtattttgtgcttaattaggtacaattgttaagctaga tgatagcctgtggatgttactagtgcaaaatcaaattatcgtattgtgttttctctgtaaagttttgtcttgtctttctc
agtgatttctctttattcctgtttattacttgatttgtttttacagactgtgaaattattcgatgacatgatgtatgaatt 35 tgtaatggcctaatgttggaattaaatttatagaattaaagacgtgaatatagaaacatgaattctgaataataaactct tataagaagagaagtcatcaagctagctgaccctacctgtattttcaaggatatgtgtggaacacctgccatgtgttttg aagtttgtgttagtattetaaatggetagaeagttgtteeagtatttgtagttetgatagaetaaagttetgtgaaaaga ggaagagactgtgtttttgttcattgctgtatttgtagcacccagcatgctgactaataccttttcaqtqcacaaaaaata tattetaagtgaaattteetteettatteacagacaatggtgeagetettaggageteteacaggatgtgtteageatat ctgtgccacacaggaatccatcattttggaaaatattcagagtctcccctcatctcatataattaaaagcacat ttgtgcattgtaaggtgagtaaaggtctaattatactttgaatggtatataatcaatgtgcataggggctgagtaaaata attgttgcaaaaaagtggttttaaggaagtcattaaaagtggcttttttggggttttttagttttatcttatttcccctc atattcaattaccattatgattagatgtcagaacttccttttataaaggaaagttaatccttattagtccatctctaca 50 cgaatgaaaatcactagttaattaatacctctctttgctgataggatgctaaaaatgtcacgcacctggcctaatgttac ccttttttagttctgtatttgcaagatcatggaagtcagaaataatatttatacatgcttgcatctcttgaagcacact atatttaatggatgttcactaaacaatgaatgaatatgtgattcagtaaatttatgatctctaatagtatgaattaaagt 55 ccttaacctagatttgcgtatttagttactgtaatttctccacaatgattaacttatataactttataatctctgaggtt tacatataaatacgtgcatatgtgtatgtaaatatgtctattctcatatacatattataaatgaaataactcattttacat tgcagtggcacaatctcggctcactgcaacctcgcctcccggactcaagcgattctcctgcctcagcctcatgagtagct gggattataggcgtccgccaccacctggctaatttttgtatttttagtagagacagggtttcaccgtgtttggccaggc tggtcttgaactcctgacctcaggtaatccacctgcctcagcctcccaaagtgctgggattacaggcatgagccaccgtg cccagccaatactagtttatttttaaagaattgctggtcgtaacacacttcattgattttatcactcattaatggattat gaacaagagtttgaaaaacaatataaaggcaaagtttgcattcaaaactttggtataaagagagtaagttggttttgtgc agtctgcagtttagggtgggatgtcctgagacaactttctctgatccacctggggcactagctcacccatgtgacttcag tgacttcattcacatctggctgttggcagaggcagaagtacttgagaaagccatgtgcatcatccagcaggttcacccta tctcagatacctgatgccagtggtttcagggtttctaagagtagcaaaagtgtgagcaggtcgctgtgtgctagcacttttcaagtttctgccttgccttaattttattgtcccccgggccacagcaggtcatagcgtttagcccagagtcattgtag attatatetgtagaatattteagttataatagggtacaacttttattecaetgaacatetttagttttatttaggteate tggtaggtataaactteagaagttaatatteaatatttataaaaaceattaaeaagtgtgaeaettaaatagtttaaata 75 tgtttgttattttttactttttagaaaatgttttccatattccccaatcttaattattcatgattctttagattgcattt aaaacattttgtgtgaatttaatgttcactgacactgctgtctgataatccagatattctacatgtagctctcaagccaa catgggccagactagaacttaaccacttttcttctgctactgttgtttaaccagctatcaagtatcctatttctaqqatt

agataaattgataactataattaaaactgaatataatcttttcattaggtacttttaagttgttcacacttaattccatt tgtacagtaattttaactttctgaaactgaagcattttaaagggtcaccagggatagtgcctgtagcattcatcagattc gtcagtgtattttcaggtcttaggtactttcttgtactaccaggacattaagttgccattcagtggttaagagtgttgc ctgggagctgtatcacatgtgcttaaatccattcttgaaatcatttactccttctgagcccttgggctatttggttaatt tctctgaacgttagtttgctcatctgaaaatggaaataataatagcaacttcttgacagggttatagtgagaattgagtt catcactgtgaaatgcttagaaatgtgcatgacacatagttaatactcaaggaattagccacatcactatcatcatcact gattatettecactettaccetettecagtteattttetgeceageagaatgatettttaaaaagtaaateagateatgt tactctattgcttgaagtctatcccatttgattaagaataacaacctaatcctctgtggatgctgcctccttcaccagcc tqtctcatqctqttccctactcttagttcctcaaacataccaaactctcctgtcccagagtcttttcgtggtttttcc atctgcctaggatgcttctctctctctattttgtgtaccttgctaactcctgcttactgtctttcagttctcagcttaaga gttatatetteatgataacattetttgatateettaeeetaagattaagttagattgatateettaeeettagaataagt ctccagggcctggtagaatgcctcatacatagtaagaattcaattaatattttacacagagaaaaaattagcaacttatt taaacaaatataactgcttcagaggtaaactgggcacatcttagttatattatgtgatatatgtgatgctttttgattgttt ttttaaatgttctacaaggtagatattgttagaggtcctaagttacttgatgtgttacttgtggtgattgtattcttttc tttttattcatttaggcagagccttaagcaccagtccataataaaaagccagttgaaacacaaagatataattactagct tgtgtgaagacattcttttctccttccattcttgtttacagttagctgagcagatgacacagtcagatgcacaggtaaaatttgggctaatagcattttaaacagcaactcttattttctttggcagttagtaaatctcatttgaatgtctgggtcagtc 20 ctcgaactcctgacctcaggtggtccacccgccttggcctcccaaagtgctgggattacaggtgtgagccaccgcgccca gcctatatgtaattatttaatgggaccatgaattgaatatttcttccttgaatagcaatgacatagcccttctattgt acatotgcaagotgatacagggaattootttgtacotgcgctottocotgccagtcagotatgggggtgaaagtgtaggg qttcatccaagtcctaaaactggtagcaactcctagggcagggctgatctggaaggacagaccctaggggagggtggaac tttaaaaagaagttctgaaggtagtaagaaggaaatgaggagtagtgttaggaaggggctaacttttttcttcttgcttc cttctttacctttatcctatagattcatattctcaacaccaacctcctcttttcagtttccttcttgcttctcttgac accacagagtttgcagctagtacttggagaggaaaattaaacagagatacttggaccaagagtaagatgaagaaagtcta aacaacagtatagtctatagtggcaagagagtatgggggctgcttagccagggtggctgtacataaagtatatcttca gtttatataaactgcttatagatggaaatcagaaaatttaaattctcttaactgtccaagaaaattctcatttttcaaa acctcttaatagtatcacattgggtgttaggtgtctgggaggacaccaatcttcaagccatatcatctcacttggaaaaa aqtcaaaataaaaccagtagatttaattaatattacactatttatagaagcatgtgatgtatcattccttgtattaattt 50 cctggggttgccgtaacaagttaccacaactaggtggcttaaaacaatagaattttattctctccacatttctagaggca qaaqttcacagtqtgtcaatagggccatgttctctggaaggctttagggagaatatatttcatatctttctcttagctt ctcggtgtcactggcaatccttagcttactttggctttctgtgtcttcacatcatctttttataagaacaccagtgatag tgattaagggcatacettactttaatatgacetcatettaactaattatgtettcaataaccetatttecaataaggce 55 tatttattctcattaagtcttgaaattggtttcaaaaagagaatattctattagagtttttaatgtatagttttaacat aggccggactgcggactgcagtggcgcaatctcggctcactgcaagctccgcttcccgggttcacgccattcccctgcct cagectecegagtagetgggactacaggegectgccacegegeceggetaatttttttgtattttagtagagaeggggt ttcaccttgttagccaggatggtctcgatctcctgacctcatgatccacccgcctcggcctcccaaagtgctgggattac gaactaatttaatttccactctaattcctacttatgtttatataatgcttttagaaatttgtattattcagaaaataaac atatactattgtatctgttgcctacacttagattttattgcctgctatatttaaattttattagtatttaattgtttta ttaaagaaagaatgtgcctgtaatctcagcacttttgagaggccaaggcgaaggattgcttgagcccaggagtttgaga ccagactgagcaacacagggagacccccatctctacaaaaaaattaaaaaaattctccaggcctcatggcacatacctgtag attatctaaatagataatagacagattatctaaatagataatagacagattatctaaatagataatagacagattatcta aataqataataqacaqattatctaaataqataatagacagattatctatctaaataqataatagattatctaaatagata aaagaaagaaagaaagaatggtgctcatattttaaagcattgaaaaatggtcttccttgcttatattacccacaccttct ttqttggcattaagatgcaaactttgttttaaacagttgagtaaatcaaagatgggactgttaagttatttgtgttattt acctgcttttttgaaaatgtaaaaataaaactctaggtttaattagtagtatgctatttagtaatgaagtaaagctagagg actcattcagtcatttaacaagtatttccagagtacttattctgtgccaggaaatgttgtaggtgccctcaacaacttag 75 agtctagcctgagacacaagtaagtaggtaattattatagaatggtatgatctttggaggactgggtattggctca tgggagtacaagataggtacccagtgatgaagtcaggaaaggtttcttatggtgatatgatgacgtctatgctgattata aggicagtgtagaataaactttgigcttttaaatttgcatagcactgtattagagagttcatcttcaaaataatcgaaaa ggctgagtgtggtgacccatggctgtaatcccagcactttgggaggccgaggtgggcagattgcttgagctaggagttcg agaccaggctggccaacatggtgaaaccccgtctctactaaaaatacaaaaattagccaggagtgatggtgcgcacctgt aatgccagctacttgggaggctgaggcaggaggatcacttgaacccaggaggtggaggttgaagtaagccgaggtcatgc

attttttttgtagagacagggtctctctatgttgcccaggctggtttcaaactcccaggctcaagcaatcctcctgccttggcctcccaaagtgctggcattacaggcgtgagccactgcgcctggcccgtattaatgtttagaacacgaattccaggagg caggctaagtctattcagcttgttcatatgcttgggccaacccaagaaacaagtgggtgacaaatggcaccttttggata gtggtattgactttgaaagtttgggtcaggaagctggggaggaaggtgggcaggctgtgggcagtcctgggcggaagac caggcaggctatgtgctcactgagcctccgccctcttcctttgatactctgatagacttctgcctcctacttccctt tetgecettetttgetttggtggetteettgtggtteeteagtggtgeetgeaacccetggtteacctecttecaggtte
tggeteetteeagecatggeteteagagteettetgttaacaggtgcatgggg (SEQ ID NO:12089)
gaatteegtggtteeteagtggtgeetgeaacccetggtteacctectteeaggttetggeteettecagecatggetet cagagtecttetgttaacagecttgacettatgteatgggtteaaettggacaetgaaaacgcaatgacettecaagaga gccaaccaaaggggcagcctctaccagtgcgactacagcacaggctcatgcgagcccatccgcctgcaggtccccgtgga ggccgtgaacatgtccctgggcctgtccctggcagccaccaccagccccctcagctgctggcctgtggtcccaccgtgc accagacttgcagtgagaacacgtatgtgaaagggctctgcttcctgtttggatccaacctacggcagcagccccagaag acatgactttcggcggatgaaggagtttgtctcaactgtgatggagcaattaaaaaagtccaaaaccttgttctctttga tgcagtactctgaagaattccggattcactttaccttcaaagagttccagaacaaccctaacccaagatcactggtgaag ccaataacgcagctgcttgggcggacacacacaggccacgggcatccgcaaagtggtacgagagctgtttaacatcaacaa cggagcccgaaagaatgcctttaagatcctagttgtcatcacggatggagaaaagtttggcgatcccttgggatatgagg atgreatedetgaggeagacagagggagteattegetacgteattgggggggggagatgcetteegeagtgagaaatee cgccaagagettaataccatcgcatccaagecgectcgtgatcacgtgttccaggtgaataactttgaggetctgaagac cattcagaaccagcttcgggagaagatctttgcgatcgagggtactcagacaggaagtagcagctcctttgagcatgaga tgtctcaggaaggcttcagcgctgccatcacctctaatggccccttgctgagcactgtggggagctatgactgggctggt $\verb|cttgggttatgctgcccatcatcttacggaaccgggtgcaaagcctggttctgggggcacctcgatatcagcacatcg| \\$ gcctggtagcgatgttcaggcagaacactggcatgtgggagtccaacgctaatgtcaagggcacccagatcggcgcctac ttoggggcctccctctgctccgtggacgtggacagcaacggcagcaccgacctggtcctcatcggggccccccattactaccgaggcagcagacccgaggggccagtgtgacgctgttcctatcgaggggcagagtgtgatgctgttcc tctacggggagcagggcaaccctggggccgctttggggcagccctaacagtgctgggggacgtaaatggggacaagctg 30 ggggccaggacctcacaatggatggactggtagacctgactgtaggagcccaggggcacgtgctgctgctcaggtcccag agatccagagtgttgtgacttatgacctggctctggactccggccgccacattcccggccgtcttcaatgagacaaag 35 aacagcacacgcagacagacacaggtcttggggctgacccagacttgtgagaccctgaaactacagttgccgaattgcat cgaggacccagtgagcccattgtgctgcgcctgaacttctctctggtgggaacgccattgtctgctttcgggaacctcc ggccagtgctggcggaggatgctcagagactcttcacagccttgtttccctttgagaagaattgtggcaatgacaacatc gacagtgactgtgagaaatgatggtgaggactcctacaggacacaggtcaccttcttcttctcccgcttgacctgtcctacc ggaaggtgtccacactccagaaccagcgctcacagcgatcctggcgcctgtgagtctgcctcctccaccgaagtg tctggggccttgaagagcaccagctgcagcataaaccacccatcttcccggaaaactcagaggtcacctttaatatcac gtttgatgtagactctaaggcttcccttggaaacaactgctcctcaaggccaatgtgaccagtgagaacaacatgccca gaaccaacaaaaccgaattccaactggagctgccggtgaaatatgctgtctacatggtggtcaccagccatggggtctcc actanatateteaactteacggceteagagaataceagtegggteatgcageateaatateaggteageaacetggggca gaggagcctccccatcagcctggtgttcttggtgcccgtccggctgaaccagactgtcatatgggaccgccccaggtca ccttctccgagaacctctcgagtacgtgccacaccaaggaggcttgccctctcactccgactttctggctgagcttcgagcctcagtgcgctgagcttcaggagagaaccccgtggtgaactgctccatcgctgtctgccagagaatccagtgtgacatcccgttcttttggcatccaggaaga attcaatgctaccctcaaaggcaacctctcgtttgactggtacatcaagacctcgcataaccacctcctgatcgtgagca cagctgagatcttgtttaacgattccqtgttcaccctgctgcggcagagcaggggggtttgtgaggtcccagacggagaccaaaagtggagccgttcgaggtccccaacccctgccgctcatcgtgggcagctctgtcggggactgctgctgctgctggccct 50 catcaccgccgcgctgtacaagctcggcttcttcaagcggcaatacaaggacatgattggggtcaggggtccccggggg ccgaaccccagtageggctccttcccgacagagctgcctctcggtggccagcaggactctgcccagaccaccacgtagccc tatgigcgtgigtgcgagtgigtgcaagtgictgtgtgcaagigtgigcacgigtgcgtgtgcgtgcatgtgcacicgca 55 tgtgcgagtgtgtgcatgtgtgtgtgctcaggggctgtgggctcacgtgtggctcaggagtgtctctggcgtgtgggtaggt gacggcagcgtagcctctccggcagaagggaactgcctgggctcccttgtgcgtgggtaagccgctgctgggttttcctc cgggagaggggacggtcaatcctgtgggtgaagagagggaaacacagcagcatctctccactgaaagaagtgggactt caggagcctcctccacaccagcgctgatgcccaataaagatgcccactgaggaatcatgaagcttcctttctggattcat ttättättteaatgtgaetttaattittiggatggataageetgtetaiggiaeaaaaateaeaaggeatteaagtgtae agtgaaaagteteeettteeagatatteaagteaceteettaaaggtagteaagattgtgttttgaggttteetteagae tactttttcattctttataccgctgcatagtattccattgtgtgagtgtaccataatgtatttaaccagtcttcttttg ggtttaagtaaagatgaggtttcaccatgttgggcaggctggtttcaattgctgacctcaagtgggcacccgcctcagc ttttagtaaagatgaggtttcaccatgttgggcaggctggtttcaattgctgacctcaagtgagccacccgcctcagcc tccaaaatgctaggattacaggcatgagccaccgcacccagccaagtttgtacatatattttttgactacacttcttaact 70 ttgagtccaggaggttgagaatagcctgaacaacatagcaagatcttgtctctacaaaaaagtttaaaaaaattagctg 75 aataatatttaaaaagcaccaggtatgcctgtacttgagttgtctttgttgatggctacaaatgagacagctctggctga agggcgcttccatttccatgggctggaggaggacattttgcaaagtgtgttttcaggaagacacagagttttacctcct gggetggagtgcagtggcattattgaggetcattgcagtetcagactcctgagetcaaacaatcetectgeetcageetc 80 tggagtagctaggactacaggcatgtgccaccatgcctggctaatttttttaaatgtatttttttgtagagtcggggtctc cctatgttgcccaggctggagtgcagtggtgtgatcctagctcactgcagcctggacctcgggctcaagaaattctcaca cctcagcctgtccagtagcaggggctacaggcgcaccaccatcccagctaattaaaaatatttttttgtagagacagg

ttgttcatatgcttgggccaacccaagaaacaagtgggtgacaaatggcaccttttggatagtggtattgactttgaaag tggcttccttgtggttcctcagtggtgcctgcaaccctggttcactcttccaggttctggctccttccagccatggctct taaatagagggccc (SEQ ID NO:12091) atttttttgtagagacagggtctctctatgttgcccaggctggtttcaaactcccaggctcaagcaatcctcctgccttg 10 geeteccaaagtgetggeattacaggegtgageeactgegeetggeeegtattaatgtttagaacaegaattecaggagg Caggotaagtotattoagottgttoatatgottgggccaacccaagaaacaagtgggtgacaaatggcaccttttggata gtggtattgactttgaaagtttgggtcaggaagctggggaggaagggtgggcaggctgtgggcagtcctgggcggaagac Caggcagggctatgtgctcactgagcctccgccctcttcctttgaatctctgatagacttctgcctcctacttctccttt tctgcccttctttgctttggtggcttccttgtggttcctcagtggtgcctgcaacccctggttcacctccttccaggttc 15 tggctccttccagccatggctctcagagtccttctgttaacaggtgcatggggaattccgtggttcctcagtggtgcct gcaacccctggttcacctccttccaggttctggctccttccagccatggctctcagagtccttctgttaacagccttgac Cttatgtcatgggttcaacttggacactgaaaacgcaatgaccttccaagagaacgcaaggggcttcgggcagagcgtgg tgcgactacagcacaggctcatgcgagcccatccgcctgcaggtccccgtggaggccgtgaacatgtccctgggcctgtc 20 cctggcagccaccaccagcccccctcagctgctggcctgtggtcccaccgtgcaccagacttgcagtgagaacacgtatg tgaaagggctctgcttcctgtttggatccaacctacggcagcagccccagaagttcccagagggccctccgagggtgtcct caagaggatagtgacattgccttcttgattgatggctctggtagcatcatcccacatgactttcggcggatgaaggagtt tgtetcaactgtgatggagcaattaaaaaagtccaaaaccttgttetetttgatgcagtactetgaagaattecggatte actttaccttcaaagagttccagaacaaccctaacccaagatcactggtgaagccaataacgcagctgcttgggcggaca 25 cacacggccacgggcatccgcaaagtggtacgagagctgtttaacatcaccaacggagcccgaaagaatgcctttaagat gagtcattegetacgtcattggggtgggagatgeetteegeagtgagaaateeegeeagagettaataeeategeatee aagccgcctcgtgatcacgtgttccaggtgaataactttgaggctctgaagaccattcagaaccagcttcgggagagaagat 30 acggaaccgggtgcaaagcctggttctgggggcacctcgatatcagcacatcggcctggtagcgatgttcaggcagaaca gtggacagcaacggcagcaccgacctggtcctcatcggggccccccattactacgagcagacccgagggggccaggtgtc 35 cgtgtgccccttgcccagggggcagagggctcggtggcagtgtgtgatgctgttctctacggggagcagggccaaccctggg geegetttggggeageectaacagtgetgggggaegtaaatggggaeaagetgaeggaegtggeeattggggeeeeagga gaggaggacaaccggggtgctgttttacctgtttcacggaacctcaggatctggcatcagccctcccatagccagcggat 40 gagttcaatcccagggaagtggcaaggaatgtatttgagtgtaatgatcaggtggtgaaaggcaaggcaagccggagaggt cagagtctgcctccatgtccagaagagcacacgggatcggctaagagaaggacagatccagagtgttgtgacttatgacc ttggggetgaeceagaettgtgagaecetgaaaetaeagttgeegaattgeategaggaeceagtgageeeeattgtget gcgcctgaacttctctctggtgggaacgccattgtctgctttcgggaacctccggccagtgctggcggaggatgctcaga 45 gactetteacageettgttteeetttgagaagaattgtggeaatgaeaacatetgeeaggatgaeeteageateacette agtttcatgagcctggactgcctcgtggtgggtgggcccgggagttcaacgtgacagtgactgtgagaaatgatggtga ggactcctacaggacacaggtcaccttcttcttcccgcttgacctgtcctaccggaaggtgtccacactccagaaccagc gcteacagegateetggegeetggeetgtgagtetgeeteeteeaeegaagtgtetggggeettgaagageaeeagetge agcataaaccaccccatcttcccggaaaactcagaggtcacctttaatatcacgtttgatgtagactctaaggcttccct 50 tggaaacaaactgctcctcaaggccaatgtgaccagtgagaacaacatgcccagaaccaacaaaaccgaattccaactgg agctgccggtgaaatatgctgtctacatggtggtcaccagccatggggtctccactaaatatctcaacttcacggcctca gagaataccagtcgggtcatgcagcatcaatatcaggtcagcaacctggggcagagggagcctccccatcagcctggtgtt cttggtgcccgtccggctgaaccagactgtcatatgggaccgccccaggtcaccttctccgagaacctctcgagtacgt gccacaccaaggagcgcttgccctctcactccgactttctggctgagcttcggaaggcccccgtggtgaactgctccatc 55 gctgtctgccagagaatccagtgtgacatcccgttctttggcatccaggaagaattcaatgctaccctcaaaggcaacct ctcgtttgactggtacatcaagacctcgcataaccacctcctgatcgtgagcacagctgagatcttgtttaacgattccg tgttcaccctgctgccgggacagggggcgtttgtgaggtcccagacggagaccaaagtggagccgttcgaggtccccaac cccctgccgctcatcgtgggcagctctgtcgggggactgctgctcctggccctcatcaccgccgcgctgtacaagctcgg cttcttcaagcggcaatacaaggacatgatgagtgaagggggtcccccgggggccgaaccccagtagcggctccttcccg 60 acagagetgeeteteggtggeeageaggaetetgeeeagaeeacaegtageeeecaggetgetggaeacgteggaeageg 65 gtgaagagagagagaacacagcagcatctctccactgaaagaagtgggacttcccgtcgcctgcgagcctgcggcctgc tgcccaataaagatgcccactgaggaatcatgaagcttcctttctggattcatttattatttcaatgtgactttaatttt ttggatggataagcctgtctatggtacaaaaatcacaaggcattcaagtgtacagtgaaaagtctccctttccagatatt 70 ttgctltlttcaccaatatttctcagacatcggttcatattaagacataaattactttttcattctttataccgctgc atagtattccattgtgtgagtgtaccataatgtatttaaccagtcttcttttgatatactattttcatctcttgttattg 75 aaagatgaggtttcaccatgttgggcaggctggtttcaattgctgacctcaagtgagccaccccgcctcagcctccaaaa tgctaggattacaggcatgagccaccgcacccagccaagtttgtacatatatttttgactacacttcttaactattctta cagcatgtgcctgtagtaccagctactcggaaggctgaggtaggaggatcgcttgagcccaggaggtgattgaagctgca

tttaaaaagcaccaggtatgcctgtacttgagttgtctttgttgatggctacaaatgagacagctctggctgaagggcgg cttccatttccatgggctggaggaggacattttgcaaagtgtgttttcaggaagacacagagttttacctcctacacttg agtgcagtggcattattgaggctcattgcagtctcagactcctgagctcaaacaatcctcctgcctcagcctctggagta gctaggactacaggcatgtgccaccatgcctggctaattttttaaatgtattttttgtagagtcggggtctccctatgt tatgttgcccaggctggtttcaaactcccaggctcaagcaatcctcctgccttgcctcccaaatgacatcggattacagg 10 tatgcttgggccaacccaagaaacaagtgggtgacaaatggcaccttttggatagtggtattgactttgaaagtttgggt caggagetgggggggggggggggggggggetgtgggcagteetgggeggaagaecaggeagggetatgtgeteaetgagee tccgccctcttcctttgaatctctgatagacttctgcctcctacttctccttttctgcccttctttgctttggtggcttc cttgtggttcctcagtggtgcctgcaaccctggttcactcttccaggttctggctccttccagccatggctctcagagtc 15 agggccc (SEQ ID NO:12092) ctgcageteeggaaegggggggggetgeteteeaeegeeeetgtgeggeegeeegggaaagtgeaggegggeegggeeg gtggctcacgcctgtgatctcagcactttgggaggccgaggtgggcggatcacctgaggtcgggagttcgaggccagcct geccaacatiggagaaaceetgtetetactaaagatacaaaattagecaggegtggtgacgcatigeetgtaateecageta ctggagtggctgaggcaggagaatcgcttgagcccgggagacagaggttgcggtgagctgagatcgcaccattgcactcc 20 gcccagcctctgtcccacttccatgcacttgacctcgaccctccggcctccgtctgcgatcttcccgtgcctgaatatga ggcttggaacagacccagaccttcctgcctgcccgtcctgagtggccccgggaccccgccccatctttggcccccagccc ctgcctctctgccgcctccagggtcgggggtcaggccaggaaagccccttgggaagccccggggagcagctggagcgg gtcgccgggcggcgggaaggagtgggcgctctatttaagcggcttccccgcggcctcgggacagaggggactgagcatg gtacggcccacaaagtcacgccgtggaccccaacgcgctctccttctccctgctcgtcgggggccaggaactggaggg gcgcaaqccctgggcccggaggtgcaggaggaggaggaggagccccagggggacgaggacgtgctgttcagggtgacaga agot cago cacogo cago catoco coto coto cago co coto co co coto co coto co coto co coto co coto coto coto coto co coto cot 35 cccaacaccacctcccoggagtctcccgacacctccccggagtctcccgacaccacctcccaggagcctcccgacac cacctoccaggagcctcccgacaccacctcccaggagcctcccgacaccacctccccggagcctcccgacaagacctccc cggagcccgcccccagcagggctccacacacacccccaggagcccaggctccaccaggactcgccctgagatctcc caggotgggoccacgcagggagaagtgatcccaacaggotegtccaaacctgcgggtgaccagotgccgcggctctgtg gaccagcagtgcggtgctgggactgctgctcctggccttgcccacgtatcacctctggaaacgctgccggcacctggctg aggacgacacccacccaccagcttctctgaggcttctgccccaggtgtcggcctgggctgggttaagggggaccggccag gtcgggatcagcccctcctgagtggccagcctttccccctgtgaaagcaaaatagcttggaccccttcaagttgagaact tecceacetttetggacggaaceacgtactttttacatacattgattcatgtetcacgtetcectaaaaatgcgtaagac caagetgtgeeetgaceacetgggeeetgtegteaggaceteetgaggetttggeaaataaaceteetaaaatgat (SEQ ID NO:12094) tecateacageetteeeggaceagetgteeecageageetggtgeetggtgaceeggaggtggeetgtaegge ccacaaagtcaeggeeggaceegaggeeteeteetteeteetgeegggggeeaggaaetggagggggggaggaag 50 ccaccgccaggccatccccggtgagtccgc (SEQ ID NO:12095) gtcgccgcaggccagtccctccaggtgaagcccctgcaggtggagccccgggagccggtggtggccgtggccttgggcgc ctcgcgccagctcacctgccgcctgcgcgggaccgcggggcctcggtgcagtggcgggggcctggacaccagcctgg gegeggtgeagteggaeaegggeegeagegteeteaeegtgegeaaegeetegetgteggegggeegggaeeeggtgtgtg gtgggeteetgegggggeegeacetteeageacacegtgeageteettgtgtaeggtgaggegte (SEQ ID NO:12096) 55 ctgtttccagtcctgcacagcccgacctcccggagcctccggacaccacctccccggagcctcccaacaccacctcccc cagggctccacacacacccccaggagcccaggctccaccaggactcgccgccctgagatctcccaggctgggcccacgca gggagaagtgatcccaacaggctgtgagttctg (SEQ ID NO:12097) ctctccccagcgtccaaacctgcgggtgaccagctgccgcggctctgtgggaccagcagtgcggtgctgggactgctgct ggcttctgccccaggtgtcggcctgggctagggttaagggggaccggccaggtcgggatcagccctcctgagtggccagc 65 gtcgtcaggacctcctgaggctttggcaaataaacctcctaaaatgat (SEQ ID NO:12098) gggactgagcatggatttcggactggcctcctgctggcggggcttctgggggctcctcctcggccagtccctccaggtga agecetgeaggtggagececeggagecggtggtggeegtggeettgggegeetegegeeageteaeetgeegeetggee tgegeggacegeggggeeteggtgeagtggeggggeetggacaceageetgggegeggtgeagteggacaegggeegeag 70 cgtcctcaccgtgcgcaacgcctcgctgtcggcggccgggacccgcgtgtgcgtgggctcctgggggccgcaccttccagcacccgtgcagctccttgtgtacgccttcccggaccagctgcccgctccccagcagccctggtgcctggtgacccg gaggtggcctgtacggcccacaaagtcacgcccgtggaccccaacgcgctctccttctccctgctcgtcgggggccagga actggagggggcgcaagecetgggcccggaggtgcaggaggaggaggaggagccccagggggacgaggacgtgctgttca cctggcttggagctcagccaccgccaggccatcccgtcctgcacagcccgacctccccggagcctcccgacaccacctc cccggagtctcccgacaccacctcccggagtctcccgacaccacctccccggagcctcccgacaccacctccccggagc ctcccgacaagacctccccggagcccgccccagcagggctccacacacccccaggagcccaggctccaccaggact cgccgccctgagatctcccaggctgggcccacgcagggagaagtgatcccaacaggctcgtccaaacctgcgggtgacca gctgcccgcggctctgtggaccagcagtgcggtgctgggactgctgctcctggccttgcccacgtatcacctctggaaac ttaagggggaccggccaggtcgggatcagccctcctgagtggccagcctttccccctgtgaaagcaaaatagcttggac

catgttctgattgcctctttggagaagctcatcagaaactcaaaagaaggccactgtttgtctcacctacccatgacctg cctaaaaatgcgtaagaccaagctgtgccctgaccaccctgggcccctgtcgtcaggacctcctgaggctttggcaaata aacctcctaaaatgataaaaaaaaaaa (SEQ ID NO:12099) etgeageteeggaacggggggggggetgeteteeaeegeeeetgtgeggeeggggaaagtgeaggegggeegggeeg gtggctcacgcctgtgatctcagcactttgggaggccgaggtgggcggatcacctgaggtcgggagttcgaggccagcct gcccaacatggagaaaccctgtctctactaaagatacaaaattagccaggcgtggtgacgcatgcctgtaatcccagcta ctggagtggctgaggcaggagaatcgcttgagcccgggagacagaggttgcggtgagctgagatcgcaccattgcactcc 10 gcccageetctgtcccacttccatgcacttgacctcgaccctccggcctccgtctgcgatcttcccgtgcctgaatatga ggcttggaacagacccagaccttcctgcctgcccgtcctgagtggccccggggaccccgcccatctttggcccccagccc ctgcctctctgccgcctccagggtcgggggtcaggccaggaaagccccttgggaagcccccggggagcagctggagcggg gtcgccgggcgggaaggagtgggcctctatttaagcggcttccccgcggcctcgggacagagggactgagcatg 15 ctgctggcggggcttctggggctcctcctcggccagtccctccaggtgaagcccctgcaggtggagccccggagccggt ggtggccgtggccttgggcgcctcgcgccagctcacctgccgcctggcctgcgcggaccgcggggcctcggtgcagtggc ggggcctggacaccagcctgggcgcggtgcagtcggacacgggccgcagcgtcctcaccgtgcgcaacgcctcgctgtcg gcggccgggacccgcgtgtgcgtgggctcctgcgggggccgcaccttccagcacaccgtgcagctccttgtgtacgcctt 20 cccggaccagctgaccgtctccccagcagccctggtgcctggtgacccggaggtggcctgtacggcccacaaagtcacgc ccgtggaccccaacgcgctctccttctccccgctcgtcgggggccaggaactggagggggcgcaagccctgggaccggag gtgcaggaggaggaggaggagccccagggggacgaggacgtgctgttcagggtgacagagcgctggcggctgcccct ggggacccctgtcccgcccgccctctactgccaggccacgatgaggctgcctggcttggagctcagccaccgccaggcca tecceqtectgeaeaqeeeqaeetecceggageeteccgaeaceaectecceggageeteceaacaeeaeetecceggag 25 tetecegacaceaceteceeggagtetecegacaceaceteceaggagectecegacaceaceteceaggagectecega gctccacacacaccccaggagcccaggctccaccaggactcgccgccctgagatctcccaaggctgggcccacgcaggga gaagtgatcccaacaggctcgtccaaacctgcgggtgaccagctgcccgcggctctgtggaccagcagcagtgcggtgctggg 30 cttctctgaggcttctgccccaggtgtcggcctgggctgggttaagggggaccggccaggtcgggatcagccctcctga gtggccagcctttccccctgtgaaagcaaaatagcttggaccccttcaagttgagaactggtcagggcaaacctgcctcc cattotactcaaagtcatccctctgctcacagagatggatgcatgttctgattgcctctttggagaagctcatcagaaac ccacgtactttttacatacattgattcatgtctcacgtctccctaaaaatgcgtaagaccaagctgtgccctgaccaccc 35 tgggccctgtcgtcaggacctcctgaggctttggcaaataaacctcctaaaatgattccatcacagccttcccggacca gctgaccgtctccccagcagccctggtgcctggtgacccggaggtggcctgtacggcccacaaagtcacgcccgtggacc ccaacgcgctctccttctccctgctcggtcggggccaggaactggaggggcgcaagccctgggcccggaggtgcaggag 40 agtecgcgtcgccgcaggccagtccctccaggtgaagccctgcaggtggagccccgggagccggtggtggccgtggcct tgggcgcctcgcgccagctcacctgccgcctggcctgcgcggaccgcgggcctcggtgcagtggcggggcctggacacc agectgggegeggtgeagteggaeaegggeegeagegteeteaeegtgegeaaegeetegetgteggeggeaggggaeeeg cgtgtgcgtgggctcctgcgggggccgcaccttccagcacaccgtgcagctccttgtgtaccgtgaggcgtcctgtttcc agtcctgcacagcccgacctccccggagcctcccgacaccacctcccggagcctcccaacaccacctccccggagtctc 45 ccgacaccacctcccggagtctcccgacaccacctcccaggagcctcccgacacctcccaggagcctcccgacacc cacacacaccccaggagcccaggctccaccaggactcgcccctgagatctcccaggctgggcccacgcagggagaag tgatcccaacaggctgtgagttctgctctccccagcgtccaaacctgcgggtgaccagctgcccgcggctctgtggacca gcagtgcggtgctgggactgctgctcctggccttgcccacgtatcacctctggaaacgctgccggcacctggctgaggac 50 gacacccaccaccagcttctctgaggcttctgccccaggtgtcggcctgggctgggttaagggggaccggccaggtcgg gatcagcccctcctgagtggccagcctttccccctgtgaaagcaaaatagcttggaccccttcaagttgagaactggtca acctttctggacggaaccacgtactttttacatacattgattcatgtctcacgtctccctaaaaatgcgtaagaccaagc tgtgccctgaccaccctgggcccctgtcgtcaggacctcctgaggctttggcaaataaacctcctaaaatgatgggactg agcatggatttcggactggcctcctgctggcggggcttctgggggctcctcctcggccagtccctcaggtgaagcccct gcaggtggagcccccggagccgtggtggccqtggacaccagcctgggcgcggtgcagtcgactcggacacggctggaccccagcgctggccttggacaccagcgctctg accetegcgcaacqcctcgctgtcggcggccgggacccgcgtgtgcgtgggctcctgcgggggccgcaccttccagcacac 60 cqtqcaqctccttqtqtacgccttcccqqaccaqctqaccgtctccccaqcaqccttgqtgcctqqtqacccqqaqqtqq cctgtacggcccacaaagtcacgccgtggaccccaacgcgctctccttctccctgctcgtcgggggccaggaactggag ggggcgcaagccctgggcccggaggtgcaggaggaggaggagccccagggggacgaggacgtgctgttcagggtgac agagegetggeggetgecgcccetggggacccetgtcccgcccctctactgccaggccacgatgaggetgcctgget tggageteagecacegecatgecatececgteetgeacagecegaceteceeggagectecegacaceaceteceeggag 65 totoccgacaccacctccccggagtctcccgacaccacctccccggagcctcccgacaccacctccccggagcctcccga caagaectccccggagcccgcccccagcagggctccacacacaccccaggagcccaggctccaccaggactcgccgc ctgagatctcccaggctgggcccacgcagggagaagtgatcccaacaggctcgtccaaacctgcgggtgaccagctgccc geggetetgtggaccagcagtgeggtgetgggactgetgeteetggeettgeccaegtateaectetggaaaegetgeeg gcacctggctgaggacgacacccaccaccagcttctctgaggcttctgccccaggtgtcggcctgggctgggttaaggg 70 gqaccggccaggtcgggatcagccctcctgagtggccagcctttccccctgtgaaagcaaaatagcttggacccttca tgattgcctctttggagaagctcatcagaaactcaaaagaaggccactgtttgtctcacctacccatgacctgaagcccc 75 ggccgccgccgccgctggtcccgcggctgcgaccgtggcggctgccgctggaaaatgtctcaggagaggcccacgttcta 80 ccqqcaggagctgaacaagacaatctgggaggtgcccgagcgttaccagaacctgtctccagtgggctctggcgcctatg gctctgtgtgtgctgcttttgacacaaaaacggggttacgtgtggcagtgaagaagctctccagaccatttcagtccatc attcatqcqaaaagaacctacagagaactgcggttacttaaacatatgaaacatgaaaatgtgattggtctgttggacgt

ttttacacctgcaaggtctctggaggaattcaatgatgtgtatctggtgacccatctcatgggggcagatctgaacaaca ttgtgaaatgtcagaagcttacagatgaccatgttcagttccttatctaccaaattctccgaggtctaaagtatatacat tggactggctcggcacacagatgatgaaatgacaggctacgtggccactaggtggtacagggctcctgagatcatgctga actggatgcattacaaccagacagttgatatttggtcagtgggatgcataatggccgagctgttgactggaagaacattg tttcctggtacagaccataltgalcagttgaagctcattttaagactcgttggaaccccaggggctgagcttttgaagaa gtgccaatcccctggctgtcgacttgctggagaagatgcttgtattggactcagataagagaattacagcggcccaagcc cttgcacatgcctactttgctcagtaccacgatcctgatgatgaaccagtggccgatccttatgatcagtcctttgaaag 10 cagggacctccttatagatgagtggaaaagcctgacctatgatgaagtcatcagctttgtgccaccaccccttgaccaag aagagatggagtcctgagcacctggtttctgttctgttgatcccacttcactgtgaggggaaggccttttcacggggaact ttagtgtgtgtgcatgtgt (SEQ ID NO:12101) gagagttttagettaattataggetacagaaccagetttgggettcatetateettetaatatttactgttteetatt ctctaatcctagctctttatttcttccctttactttcactgggcttattttgctatagtggaatgcagagggatgagtat atcagaagtgtttgaaccatgtccctctgggcctgaggggcagaaggggacacaatatgtaatgtaatgtaaggagccctgtca tcagaaatctgacttaatctgttttcagatattagacttccacataaaagttgacttggaaaaagacttctgctgctaaa 20 caaaagttgaaactgccttggtgataaaatataagcagaccagctttctcttctagctttccctctcatttcccataaga ttttggtcaagttatttaatctctctgcatccgtttcctcttctatgaaatgggcatgataataatggtatatacctcct caaggggggtataacgtgaacagagtccttagcacagcactctgtctctacgggagtgaattttcattgtttttctttt 25 cctgttggagaaagtaagaagaaaacagcgcctttatggcttcccatggtgaatggctggggcgcgtctgtgtccctgtc ttectagaaaaqtetttggtqeccagetccagetcagcagattcaggatcccettcatcatgacttggtcaacgccctg ctcaggccaaggtcctctgagagttccaagcttctccactccctataaaaggccggcggaacagccagaggagcagagag gcaaagaaacattgtgaaatctccaactcttaaccttcaacatgaaagtctctgcagtgcttctgtgcctgctcatg acagcagctttcaacccccagggacttgctcagccaggtaagtcacctcccttcgactctccctttttccctctgttt gtgcaggggtgcgatcttggctcattgcaaccttcacctcccaggttcaagcgattctctttgcctcagccttctgagtag ctgtgattacaggcaccgccatcacgtgcagctaatttttgtatttttagtagagaaggggtttcactatgttggccagg ctggtctcaaactcttgacctcaagtgatcctcccgtctcggcctcccaaagtgctgggattacaggcgtgagcaccagg cccagccaagtgccccacttctaagcccaccagaatagtaaggctcctcagaggttcactttaacatctaattttaaaga tagaaagctgaagcccatgttggaggcagaagggaccctagccatccacctccaggttattgcagagcaagaatgaaacc taagettetgaeteeagatttagggeettttetttgaeeteatetgategteedaactetgeagatetggaeeacaeee agaccttcccactggccttgcccgtggcctcccctagatggctgtgacatgtctccaccatgcagctgagcctttgagah cctgaggcacatgtcacaggtcccacctcacctcagggtctagggtgggagtgctggggcttgggggtgagtaagatctac 40 ttcttcctctttgctttgcttcccatacagatgctccctgctgtattcaagctgagaaaagcctaacacatcctcaaagt ctttttctttgtaactatttctagatgcactcaacgtcccatctacttgctgcttcacatttagcagtaagaagatctcc taggatgagatctagccagactgtgtgatgcaaaatcctccaattttggctgcacaacaggtccaaagaggacctataat taggtggaccaggcaggtttagaacccagtgtgtcatctcctaggtaaaccctcaaagggttccatctaactgtgccaga tctccttcctccacagcttcagaaccaaactgggcaaggagatctgtgctgacccaaaggagaagtgggtccagaattat atgaaacactgggccggaaagctcacaccctgaagacttgaactctgctacccctactgaaatcaagctggagtacgtg aaatgacttttccattctcctctggcctcctcttctatgctttggaatacttctaccataattttcaaataggatgcatt cggttttgtgattcaaaatgtactatgtgttaagtaatattggctattatttgacttgttgctggtttggagtttatttg agtattgctgatcttttctaaagcaaggccttgagcaagtaggttgctgtctctaagcccccttcccttccactatgagc tgctggcagtgggtttgtattcggttcccaggggttgagc (SEQ ID NO:12102) ggcaaagaaacattgtgaaatctccaactettaacettcaacatgaaagtetctgcagtgcttctgtgcctgctgctcat 55 gacagcagetttcaacccccagggacttgctcagccagatgcactcaacgtcccatctacttgctgcttcacatttagca gtaagaagateteettgeagaggetgaagagetatgtgateaccaccagcaggtgteecccagaaggetgteatetteaga accaaactgggcaaggagatctgtgctgacccaaaggagaagtgggtccagaattatatgaaacacctgggccggaaagc tcacaccetgaagacttgaactetgetaccectactgaaatcaagetggagtacgtgaaatgacttttccatteteetet ggcctcctcttctatgctttggaatacttctaccataattttcaaataggatgcattcggttttgtgattcaaaatgtac tatgtgttaagtaatattggctattatttgacttgttgctggtttggagtttatttgagtattgctgatcttttctatag60 caaggccttgagcaagtaggttgctgtctctaagcccccttcccttccactatgagctgctggcagtgggtttgtattcg acattgtgaaatctccaactcttaaccttcaacatgaaagtctctgcagtgcttctgtgcctgctgctcatgacagcagc tttcaacccccagggacttgctcagccagatgcactcaacgtcccatctacttgctgcttcacatttagcagtaagaaga tctccttgcagaggctgaagagctatgtgatcaccaccagcaggtgtccccagaaggctgtcatcttcagaaccaaactg ggcaaggagatctgtgctgacccaaaggagaagtgggtccagaattatatgaaacacctgggccggaaagctcacaccct gaagacttgaactctgctacccctactgaaatcaagctggagtacgtgaaatgacttttccattctcctctggcctcctc ttctatgctttggaatacttctaccataattttcaaataggatgcattcggttttggattcaaaatgtactatgtgtta agtaatattggctattatgtgtttt qaqcaaqtaggttqctgtctctaaqcccccttcccttccactatgagctgctggcagtgggttgtattcggttcccaggg aaaaggccggcggaacagccagaggagcagaggcaaagaaacattgtgaaatctccaactcttaaccttcaacatgaa agtetetgeagtgettetgtgeetgetgeteatgacageattteaacccccagggacttgeteagccagatgcactca acgtcccatctacttgctgcttcacatttagcagtaagaagatctccttgcagaggctgaagagctatgtgatcaccacc agcaggtgtccccagaaggctgtcatcttcagaaccaaactgggcaaggagatctgtgctgacccaaaggagaagtgggt ccagaattatatgaaacacctgggccggaaagctcacaccctgaagacttgaactctgctacccctactgaaatcaagct ggagtacgtgaaatgacttttccattctcctctggcctcctcttctatgctttggaatacttctaccataattttcaaat

aggatgcattcggttttgtgattcaaaatgtactatgtgttaagtaatattggctattatttgacttgttgctggtttgg

aqtttatttqaqtattqctqatcttttctaaaqcaaqqccttqaqcaaqtaqqttqctqtctctaaqcccccttcccttc cactatgagctgctggcagtgggtttgtattcggttcccaggggttgagagcatgcctgtgggagtcatggacatgaagg gatgctgcaatgtaggaaggagagctctttgtgaatgtgaggtgttgctaaatatgttattgtggaaagatgaatgcaat gagagttttagcttaattataggctacagaaccagctttgggcttcatctatcctttctaatatttactgtttcctattt ctctaatcctaqctctttatttcttccctttactttcactgggcttattttgctatagtggaatgcagagggatgagtat tccaggaaggcacaaaaactgtgccaagtcttggagctagggatgagtgggaaagggacatgttcaaccattttaggcca ttccttcccacctcccaqctcccagatatgtgccctcgcaggaggagccaggaatgggccaaacacctcacttcttt atcagaqqtqtttgaaccatgtccctctgggcctgaggggcagaaggggacacaatatgtaatgtaaggagccctgtca tcagaaatctgacttaatctgttttcagatattagacttccacataaaagttgacttggaaaaagacttctgctgctaaa caaaagttqaaactgccttggtgataaaatataagcagaccagctttctctttctagctttccctctcatttcccataaga ttttggtcaagttatttaatctctctgcatccgtttcctcttctatgaaatggcatgataataatggtatatacctcct caaggggggtataacgtgaacagagtccttagcacagcactctgtctctacgggagtgaattttcattgtttttctcttt cctglitggagaaagtaagaagaaaacagogcctttatggcttcccatggtgaatggctggggcgcgctctgtgtccctftc ttcctagaaaagtctttggtgcccagctccagctcagcagattcaggatcccccttcatcatgacttggtcaacgccctg ctcaggccaaggtcctctgagagttccaagcttctccactccctataaaaggccggcggaacagccagagagcagagag 20 gcaaagaaacattgtgaaatctccaactcttaaccttcaacatgaaagtctctgcagtgcttctgtgcctgctgctcatg acagcagettteaacccccagggacttgetcagccaggtaagtcacctcccttcgactctcctcttttccctctgttt gtgcaggggtgcgatcttggctcattgcaaccttcacctcccaggttcaagcgattctctttgcctcagccttctgagtag ctggtctcaaactcttgacctcaagtgatcctcccgtctccgcctcccaaagtgctgggattacaggcgtgagcaccagg cccagccaagtgccccacttctaagcccaccagaatagtaaggctcctcagaggttcactttaacatctaattttaaaga tagaaagctgaagcccatgttggaggcagaagggaccctagccatccacctccaggttattgcagagcaagaatgaaacc taagettetgaeteeagatttagggeettttetttgaeeteatetgategteeeaaaetetgeagatetggaeeaeaeee agacetteceaetggeettgeeegtggeeteceetagatggetgtgaeatgtetecaecatgeagetttgagaheetgaggeacatgteaeaggteceaecteaecteagggtetagggtgetgggagtgetgggggtgagtaagatetae ttetteetetttgetttgeateccatacagatgetecctgetgtatteaagetgagaaaageetaacacateeteaaagt ctttttctttgtaactatttctagatgcactcaacgtcccatctacttgctgcttcacatttagcagtaagaagatctcc taggatgagatetagecagaetgtgtgatgeaaaateeteeaattttggetgeaeaacaggteeaaagaggaeetataat ttcccacaccttgtttcctggatgggcaccagcccatttagcagatgccaggatcagtttcccaggggcagcaag agcagtggctgcctccagagaccccttctgtccacacacctcctacttcctgtcctggaggggtgccccttcacctgtag taggtggaccaggcaggtttagaacccagtgtgtcatctcctaggtaaaccctcaaagggttccatctaactgtgccaga tctccttcctccacagcttcagaaccaaactgggcaaggagatctgtgctgacccaaaggagaagtgggtccagaattat atgaaacacctgggccggaaagctcacaccctgaagacttgaactctgctacccctactgaaatcaagctggagtacgtg aaatgacttttccattctcctctggcctcctcttctatgctttggaatacttctaccataattttcaaataggatgcatt cggttttgtgattcaaaatgtactatgtgttaagtaatattggctattatttgacttgttgctggtttggagtttatttg agtattgctgatcttttctaaagcaaggccttgagcaagtaggttgctgtctctaagcccccttcccttccactatgagc tgctggcagtgggtttgtattcggttcccaggggttgagcggcaaagaaacattgtgaaatctccaactcttaaccttca gcactcaacgtcccatctacttgctgcttcacatttagcagtaagaagatctccttgcagaggctgaagagctatgtgat caccaccagcaggtgtccccagaaggctgtcatcttcagaaccaaactgggcaaggagatctgtgctgacccaaaggaga agtgggtccagaattatatgaaacactgggccggaaagctcacaccctgaagacttgaactctgctacccctactgaaa tcaagctggagtacgtgaaatgacttttccattctctctggcctcctcttctatgctttggaatacttctaccataatttcaaataggatgcattcggtttgtgattcaaaatgtactatgtgttaagtaatattggctattatttgacttgttgt ggtttggagtttatttgagtattgctgatcttttctatagcaaggccttgagcaagtaggttgctgtctctaagcccccttcccactatgagctgctgcagtgggtttgtattcggttcccaggggttgagagcatgcctgtgggagtcatggacatgagggattgcaaggggttgtagtagtggagtggagttgtagtaggaggggttgctaaatatgttattgtggaaagatga 55 aagaaaaaaaaaaaaaacattgtgaaatctccaactcttaaccttcaacatgaaagtctctgcagtgcttctgtgcctgct gctcatgacagcagctttcaacccccagggacttgctcagccagatgcactcaacgtcccatctacttgctgcttcacat Etagcagtaagaagateteettgeagaggetgaagagetatgtgateaceaceageaggtgteeceagaaggetgteate ttcagaaccaaactgggcaaggagatctgtgctgacccaaaggagaagtgggtccagaattatatgaaacacctgggccg gaaageteacaccctgaagacttgaactctgctacccctactgaaatcaagetggagtacgtgaaatgacttttccattc tcctctggcctcctcttctatgctttggaatacttctaccataattttcaaataggatgcattcggttttgtgattcaaa atgtactatgtgttaagtaatattggctattatttgacttgttgctggtttggagtttatttgagtattgctgatctttt ttgtgaatgtgaggttgttgctaaattattgtttattgtggaaagatgcaatagtaggactgctgacattttgcag aaacattgtgaaatctccaactcttaaccttcaacatgaaagtctctgcagtgcttctgtgcctgctgctcatgacagca tgggcaaggagatctgtgctgacccaaaggagaagtgggtccagaattatatgaaacacctgggccggaaagctcacacc cgcccgggcaggtcctctgcctagcactgctccccaaggctcccagaaatctcaggtcagaggcacggacagcctctgg agetetegtetggtgggaccatgaactgccagcagetgtggctgggcttcctactccccatgacagtctcaggccgggtc ctggggcttgcagaggtggcgcccgtggactacctgtcacaatatgggtacctacagaagcctctagaaggatctaataa cttcaagccagaagatatcaccgaggctctgagagcttttcaggaagcatctgaacttccagtctcaggtcagctggatg atgccacaagggcccgcatgaggcagcctcgttgtggcctagaggatcccttcaaccagaagacccttaaatacctgttg ctgggccgctggagaaagaagcacctgactttccgcatcttgaacctgccctccacccttccaccccacacagcccgggc

agccctgcgtcaagccttccaggactggagcaatgtggctcccttgaccttccaagaggtgcaggctggtgcggctgacaggcttccgcctctccttccatggccgccaaagctcgtactgttccaatacttttgatgggcctgggagagtcctggcccatgcc gacatcccagagctgggcagtgtgcacttcgacgaagacgagttctggactgaggggacctaccgtggggtgaacctgcg catcattgcagcccatgaagtgggccatgctctggggcttgggcactcccggtattcccaggccctcatggccccagtct acgagggetaccggccccactttaagctgcacccagatgatgtggcagggatccaggctctctatggcaagaagagtcca gtgataagggatgaggaagaagaagaagacagagctgcccactgtgccccagtgcccacagaacccagtcccatgccaga cccttgcagtagtgaactggatgccatgatgctggggccccgtgggaagacctatgctttcaagggggactatgtgtgga ctgtatcagattcaggaccgggccccttgttccgagtgtctgcccttttgggaggggctccccggaaacctggatgctgct gtctactcgcctcgaacacaatggattcacttctttaagggagacaaggtgtgggcgctacattaatttcaagatgtctcc tctttaagggctccgggtactggcagtgggacgagctagcccgaactgacttcagcagctaccccaaaccaatcaagggt ttgtttacgggagtgccaaaccagccctcggctgctatgagttggcaagatggccgagtctacttcttcaagggcaaagt ctactggcgcctcaaccagcagcttcgagtagagaaaggctatcccagaaatatttcccacaactggatgcactgtcgtc cccggactatagacactaccccatcaggtgggaataccactccctcaggtacgggcataaccttggataccactctctca 15 gaaaacagcatggccagtaaactgagcaagggccttggaatccttgagaatcacattatgtgcttatgattacgggcaa gctaattaaccttgttgaatctcagattccccatttgcaacattaggttaagaccagtactgcaggattgttgcactaaa 20 tgaaatactgtatgtgaagtgcctggcacagtgtctggtacatttgtgtttaataaaagctaactccatgttcataagaa aaaaaaaa (SEQ ID NO:12107) ggagaccggccgcatggacccagggacagtggccaccatgcgtaagccccgctqctccctgcctgacgtgctgggggtgg 25 cggggctggtcaggcggcgtcgccggtacgctctgagcggcagcgtgtgggaagaagcgaaccctgacatggagggtacgt teetteececagageteecagetgagecaggagaeegtgegggteeteatgagetatgeeetgatggeetggggeatgga gtcaggcctcacatttcatgaggtggattcccccagggccaggagcccgacatcctcatcgactttgcccgcgccttcc accaggacagctaccccttcgacgggttggggggcaccctagcccatgccttcttccctggggagcaccccatctccggg gacactcactttgacgatgaggagacctggacttttgggtcaaaagcctctcagcagctggagcaggagctggcaggcgg 30 ctcaccggttgatgaggagctgggcttcagccggggctggcgtgtgaatcctctgggtcctggcagtcctgagcgcctga gctgaatacagagggaagaggctgggagcaaggccgggtgctggggccggcaggctgtgttctgaga (SEQ ID NO:12108) atgatettaeteacatteageactggaagaeggttggatttegtgeateatteggggggtgtttttettgeaaaeettget $\verb|ttggattttatgtgctacagtctgcggaacggagcagtatttcaatgtggaggtttggttacaaaagtacggctaccttc||$ caccgactgaccccagaatgtcagtgctgcgctctgcagagaccatgcagtctgccctagctgccatgcagcagttctat 35 ggcattaacatgacaggaaaagtggacagaaacacaattgactggatgaagaagccccgatgcggtgtacctgaccagac aagaggtagctccaaatttcatattcgtcgaaagcgatatgcattgacaggacagaaatggcagcacaagcacatcactt acagtataaagaacgtaactccaaaagtaggagaccctgagactcgtaaagctattcgccgtgcctttgatgtgtggcag 40 tttcttgtagcagtccatgaactgggacatgctctgggattggagcattccaatgaccccactgccatcatggctccattttaccagtacatggaaacagacaacttcaaactacctaatgattacagggcatccagaagatatatggtccacctg acaagattcctccacctacaagacctctaccgacagtgcccccacaccgctctattcctccggctgacccaaggaaaaat gacaggccaaaacctcctcggcctccaaccggcagaccttcctatcccggagccaaacccaacatctgtgatgggaactt 45 taacactetagetattettegtegtgagatgtttgtttecaaggaccagtggttttggegagtgagaaacaacagggtga tggatggatacccaatgcaaattacttacttctggcggggcttgcctcctagtatcgatgcagtttatgaaaatagcgac gggaattttgtgttctttaaagtgaagggagacactctatctgtaatccaagatggttggctctacaaataccattggaa atggattctagaacaaaggcagtcagtgcctgtgctctcaagacaaactgaaaagcacaagacctatgaagaattatctt ccatcacatactaacaaagaacaatcaggaattgaaaatttaaaataaaaggccatttacaattgcattcgaaaacacca 50 aataccgagggatcaatctgcaaaaaatgtgcatgacctctacattgaaaacaacaacaacactactaaatgtttgtcttt aaaggcagctgg (SEQ ID NO:12109) tagaagtttacaatgaagtttcttctaatactgctcctgcaggccactgcttctggagctcttcccctgaacagctctac aagootggaaaaaaataatgtgotatttggtgagagataottagaaaaattttatggcottgagataaacaaacttcoag tgacaaaaatgaaatatagtggaaacttaatgaaggaaaaaatccaagaaatgcagcacttottgggtotgaaagtgacc 55 gccaggggggcccgtatggaggaacattatatcacctacagaatcaataattacacacctgacatgaaccgtgaggatg ttgactacgcaatccggaaagctttccaagtatggagtaatgttacccccttgaaattcagcaagattaacacaggcatg getgacattttggtggtttttgcccgtggagctcatggagacttccatgcttttgatggcaaaggtggaatcctagcccatgctttttgatcgcactggactacacttcaggagggatgcacatttcgatgaggacgaattctggactacacattcaggaggcacaaacttgttcctcactgctgttcacgagattggcacttctagtgactacaaaggctgtaatg 60 ttccccacctacaaatatgtcgacatcaacacatttcgcctctctgctgatgacatacgtggcattcagtccctgtatgg agacccaaaagagaaccaacgettgccaaatcctgacaattcagaaccagetetetgtgaccccaatttgagttttgatg ctgtcactaccgtgggaaataagatctttttcttcaaagacaggttcttctggctgaaggtttctgagagaccaaagacc agtgttaatttaatttcttccttatggccaaccttgccatctggcattgaagctgcttatgaaattgaagccagaaatca 65 agtttttctttttaaagatgacaaatactggttaattagcaatttaagaccagagccaaattatcccaagagcatacatt cttttggttttcctaactttgtgaaaaaattgatgcagctgtttttaacccacgtttttataggacctacttctttgta gataaccagtattggaggtatgatgaaaggagacagatgatggaccctggttatcccaaactgattaccaagaacttcca aggaatcgggcctaaaattgatgcagtcttctattctaaaaacaaatactactatttcttccaaggatctaaccaatttg aatatgacttcctactccaacgtatcaccaaaacactgaaaagcaatagctggtttggttgttagaaatggtgtaattaa atgtatcataaaaataaaatctgtaaaccataggtaatgattatataaaatacataatattttcaattttgaaaactct aattgtccattcttgcttgactctactattaagittigaaaatagttaccttcaaagcaagataattctattigaagcatg ttggctcaaataaaattg (SEQ ID NO:12110) 75 aaagaaggtaagggcagtgagaatgatgcatcttgcattccttgtgctgttgtgtgtctgccagtctgctctgcctatcctc tgagtggggcagcaaaagaggaggactccaacaaggatcttgcccagcaatacctagaaaagtactacaacctcgaaaag gatgtgaaacagtttagaagaaaggacagtaatctcattgttaaaaaaatccaaggaatgcagaagttccttgggttgga aggagaggctgatataatgatctctttcgcagttaaagaacatggagacttttactcttttgatggcccaggacacagtt tggctcatgcctaccctacctggacctgggctttatggagatattcactttgatgatgatgatgaaaaatggacagaagatgca

tttgatgtacccactctacaactcattcacagagctcgcccagttccgcctttcgcaagatgatgtgaatggcattcagt ctctctacggactcccctgctctactgaggaaccctggtgccaaaatctgtttcttcggaatgatgtgaatggcatctagt gccaagtgtgatcctgctttgtctttcgatgccatcagcactctgaggagaatatctgttctttaaagacagatattt ttggcgaagatcccactggaaccctgaacctgaatttcatttgatttctgcattttggccctctttccatcatatttgg atgctgcatatgaagttaacagcagggacaccgttttattttatattttaatgagtagttctgggccatcagaggaaatgag gtacaagcaggttatccaagaggcatccataccctgggttttcctccaaccataaggaaaattgatgcagctgtttctga caaggaaaagaagaaacatacttctttgcagcggacaaatactggagatttgatgaaaatagccagtccatggagcaag gettecetagaetaatagetgettettigeagiggataatatetggagtttgatgatatagetagtgagttag gettecetagaetaatagetgatgaetttecaggagttgagetaaggttgatgetgtattacaggeattttee tacttetteagtggateateaeagtttgagtttgaeceeaatgeeaggatgtgtgacacacatattaaagagtaacagetg gttacattgetaggegagataggggaagaeagatatgggtgtttttaataaatetaattatteatetaatgtatta tgagecaaaatggttaatttttecetgeatgttetgtgaetgaagaagatgageettgeagatatetgeatgtgteatgaa gaatgttatutggaattetteaettgatetttgaattgeaetgaaeagaattaagaaataeteatgtgeaataggtgagaga atgtatttteatagatgtgttattaetteeteaataaaaagttttattttgggcetgtteett (SEQ ID No:12111) ctgaggtgggtaagagtacaatggctaaatcttaacacactcttacgtgtacaccctaccgtacaccatccagactcgtc cccatacaatcaggagtgatcagtacgtaaatgcttatggtgtgatttgaaggggtgttagagtagatcatctctcacac cgcagcactgcttccaattcatcctttggaattttattccctgactgttaaaagtttttagtgcttaaatattctct ccagaggcaaacttttcccatctgctaaagttgaaaagagtaacccacatcctaccaacgctagacaatctaggatgtag ggaaagtttgtctctggaatctatccaggtacccagttgggactgagcttcagcttagatgtctgaagatgttaagttat agaatcaggtttaagtctgaagatgttaagttatagaatcaggatctgagccggtacaacacgtggataaacaatgaagt cgatgttacaaattttttttttttgctacttgtaaaatctctgtatcacatttctctagggagctggattccgtttaggagca ggaagtattataatgaaaaccaagttatcaggctttaagaaaatatattttaagttctccttcttttagttgcttgat agtcaagggatgatatcaactatgagtcactcataggattcatattcacagaacccggactaagggctatataaagagga acagttcaggaacttaggctagaaaggacacagtaaactgaattgatccgtttagaagtttacaatgaagtttcttctaa tactgctcctgcaggccactgcttctggagctcttcccctgaacagctctacaagcctggaaaaaaataatgtgctattg ggtgagaga (SEQ ID NO:12112) ggggggggaggtcctctgcctagcactgctccccaaggctcccagaaatctcaggtcagaggcacggacagctctgg agctctcgtctggtgggaccatgaactgccagcagctgtggctgggcttcctactccccatgacagtctcaggcgggtc ctggggcttgcagaggtggcgccgtggactacctgtcacaatatgggtacctacagaagcctctagaaggatctaataa cttcaagccagaagatatcaccgaggctctgagagcttttcaggaagcatctgaacttccagtctcaggtcagctggatg atgccacaagggcccgcatgaggcagctctgttgggcctagaggatcccttcaaccagaagacccttaaatacctgttg ctgggccgctggagaaagaagcacctgactttccgcatcttgaacctgccctccacccttccaccccacacagcccgggc agccctgcgtcaagccttccaggactggagcaatgtggctcccttgaccttccaagaggtgcaggctggtgcggctgaca tccgcctctccttccatggccgccaaagctcgtactgttccaatacttttgatgggcctgggagagtcctggcccatgcc gacatcccagagctgggcagtgtgcacttcgacgaagacgagttctggactgaaggggacctaccgtggggtgaacctgcg catcattgcagcccatgaagtgggccatgctctggggcttgggcactcccgatattcccaggccctcatggccccagtct acgagggetacggecccaetttaagetgeacccagatgatgtggeagggatecaggetetetatggeaagaagagteea gtgataagggatgaggaagaagaagaagagctgcccactgtgccccagtgcccacagaacccagtcccatgccaga cccttgcagtagtgaactggatgccatgatgctggggccccgtgggaagacctatgctttcaagggggactatgtgtgga ctgtatcagattcaggaccgggccccttgttccgagtgtctgcccttttgggaggggctccccggaaacctggatgctgct gtctactcgcctcgaacacaatggattcacttctttaagggagacaaggtgtggcgctacattaatttcaagatgtctcctggcttccccaagaagctgaataggtcagaacctaacctggatgcagctctctattggcctctcaaccaaaaggtgttcc gaaaacagcatggccagtaaactgagcaagggccttggaatccttgagaatcacatttatgtgcttatgattacgggcaa gctaattaaccttgttgaatctcagattccccatttgcaacattaggttaagaccagtactgcaggattgttgcactaaa Egaaatactgtatgtgaagtgcctggcacagtgtctggtacatttgtgttttaataaaagctaactccatgttcataagaa 60 gggggtggcggggctggtcaggcggcgtcgccggtacgctctgagcggcagcgtgtggaagaagcgaaccctgacatgga gggtacgttccttcccccagagctcccagctgagccaggagaccgtgcgggtcctcatgagctatgccctgatggcctgg ggcatggagtcaggcctcacatttcatgaggtggattccccccagggccaggagcccgacatcctcatcgactttgcccg cgccttccaccaggacagctaccccttcgacgggttggggggcaccctagcccatgccttcttccctggggagcacccca teteeggggacaeteaetttgacgatgaggagacetggacttttgggtcaaaagceteteagcagcaggagcaggagetg gcaggcggctcaccggttgatgaggagctgggcttcagccggggctggcgtgtgaatcctctgggtcctggcagtcctga tgtagcagtccatgaactgggacatgctctgggattggagcattccaatgacccactgccatcatggccctcattttaccagtacatggaacagacaacttcaaactacctaatgattatacagggcatccagaagatatatggtccacctgacaag attectecacetacaagacetetacegacagtgececcacacegetetattectecggetgacecaaggaaaaatgacag qccaaaacctcctcggcctccaaccggcagacctcctatcccggagccaaacccaacatctgtgatgggaactttaaca ctctagctattcttcgtcgtgagatgtttgttttcaaggaccagtggttttggcgagtgagaaacaacagggtgatggat ggatacccaatgcaaattacttacttctggcggggcttgcctcctagtatcgatgcagtttatgaaaatagcgacgggaa ttttgtgttctttaaagtgaagggagacactctatctgtaatccaagatggttggctctacaaataccattggaaatgga

ttctagaacaaaggcagtcagtgcctgtgctctcaagacaaactgaaaagcacaagacctatgaagaattatcttccatc acatactaacaaagaacaatcaggaattgaaaatttaaaataaaaggccatttacaattgcattcgaaaacaccaaatac cgagggatcaatctgcaaaaaatgtgcatgacctctacattgaaaacaacaacaactactaaatgtttgtctttaaagg cagctggtagaagtttacaatgaagtttcitctaatactgctcctgcaggccactgcttctggagctcttcccctgaaca gctctacaagcctggaaaaaaataatgtgctatttggtgagagatacttagaaaaattttatggccttgagataaacaa cttccagtgacaaaaatgaaatatagtggaaacttaatgaaggaaaaaatccaagaaatgcagcacttcttgggtctgaa gggaaatgccaggggggcccgtatggaggaaacattatatcacctacagaatcaataattacacacctgacatgaaccgt gaggatgttgactacgcaatccggaaagctttccaagtatggagtaatgttacccccttgaaattcagcaagattaacac aggcatggctgacattttggtggtttttggccgtggagctcatggagacttccatgcttttgatggcaaaggtggaatcc tagcccatgcttttggacctggatctggcattggaggggatgcacatttcgatgaggacgaattctggactacacattca ggaggcacaaacttgttcctcactgctgttcacgagattggccattccttaggtcttggccattctagtgatccaaaggc tgtaatgttccccacctacaaatatgtcgacatcaacacatttcgcctctctgctgatgacatacgtggcattcagtccc tgtatggagacccaaaagagaaccaacgcttgccaaatcctgacaattcagaaccagctctctgtgaccccaatttgagt tttgatgctgtcactaccgtgggaaataagatctttttcttcaaagacaggttcttctggctgaaggtttctgagagaccaaagaccagtgttaatttaatttcttccttatggccaaccttgccatctggcattgaagctgcttatgaaattgaagcca gaaatcaagtttttctttttaaagatgacaaatactggttaattagcaatttaagaccagagccaaattatcccaagagc atacattcttttggttttcctaactttgtgaaaaaattgatgcagctgtttttaacccacgtttttataggacctactt ctttgtagataaccagtattggaggtatgatgaaaggagacagatgatggaccctggttatcccaaactgattaccaaga acttccaaggaatcgggcctaaaattgatgcagtcttctattctaaaaacaaatactactatttcttccaaggatctaac 20 tagagatatgtatcataaaaattaaaatctgtaaaccataggtaatgattatataaaatacataatatttttcaattttga aaactctaattgtccattcttgcttgactctactattaagtttgaaaatagttaccttcaaagcaagataattctatttg 25 aagcatgetetgtaagttgetteetaacateettggaetgagaaattataetteetggeataaetaaaattaagtat atatattttggctcaaataaaattgaaagaaggtaagggcagtgagaatgatgcatcttgcattccttgtgctgttgtgt ctgccagtctgctctgcctatcctctgagtggggcagcaaaagaggaggactccaacaaggatcttgcccagcaatacct agaaaagtactacaacctcgaaaaggatgtgaaacagtttagaagaaaggacagtaatctcattgttaaaaaaatccaag gaatgcagaagttccttgggttggaggtgacagggaagctagacactgacactctggaggtgatgcgcaagcccaggtgt 30 gaattatacaccagatttgccaagagatgctgttgattctgccattgagaaagctctgaaagtctgggaagaggtgactc cactcacattctccaggctgtatgaaggagaggctgatataatgatctctttcgcagttaaagaacatggagacttttac tcttttgatggcccaggacacagtttggctcatgcctacccacctggacctgggctttatggagatattcactttgatga tgatgaaaaatggacagaagatgcatcaggcaccaatttattcctcgttgctgctcatgaacttggccactccctggggc tctttcactcagccaacactgaagctttgatgtacccactctacaactcattcacagagctcgcccagttccgcctttcg atctgttctttaaagacagatatttttggcgaagatcccactggaaccctgaacctgaatttcatttgatttctgcattt tggccctctcttccatcatatttggatgctgcatatgaagttaacagcagggacaccgtttttattttaaaggaaatga ggaaaattgatgcagctgtttctgacaaggaaaagaagaaaacatacttctttgcagcggacaaatactggagtttgat 40 gaaaatagccagtccatggagcaaggcttccctagactaatagctgatgactttccaggagttgagcctaaggttgatgc tgtattacaggcattttggatttttctacttcttcagtggatcatcacagtttgagtttgaccccaatgccaggatggtga cacacatattaaagagtaacagctggttacattgctaggcgagatagggggaagacagatatgggtgtttttaataaatc .45 taataattattcatctaatgtattatgagccaaaatggttaatttttcctgcatgttctgtgactgaagaagatgagcct tgcagatatctgcatgtgtcatgaagaatgtttctggaattcttcacttgctttttgaattgcactgaacagaattaagaa atactcatgtgcaataggtgagagaatgtattttcatagatgtgttattacttcctcaataaaaagttttattttgggcc tgttccttctgaggtgggtaagagtacaatggctaaatcttaacacactcttacgtgtacaccctaccgtacaccatcca gactcgtccccatacaatcaggagtgatcagtacgtaaatgcttatggtggatttgaaggggtgttagagtagatcatc teteacacegeageageageteeaatteateetttggaaftttatteeetgactgttaaaagtttttagtgettaaa tattctctattgaggtaagagacagattctgtgcaatgggacaattaggtcaagagggaaagaagctgaggtgataggca gatagattccagaggcaaacttttcccatctgctaaagttgaaaagagtaacccacatcctaccaacgctagacaatcta ggatgtagggaaagtttgtctctggaatctatccaggtacccagttgggactgagcttcagcttagatgtctgaagatgt taagttatagaatcaggtttaagtctgaagatgttaagttatagaatcaggatctgagccggtacaacacgtggataaac 55 gaatataaggaagtattataatgaaaaccaagttatcaggctttaagaaaatatattttaagttctccttctcttttagt Egettgatätttettttacaagggettatttigtagataggtggaegtagaggettatttateatetttgaaggtacatae 60 aaagaggaacagttcaggaacttaggctagaaaggacacagtaaactgaattgatccgtttagaagtttacaatgaagt tettetaataetgeteetgeaggeeactgettetggagetetteecetgaacagetetacaageetggaaaaaaataatg tgctattgggtgagaga (SEQ ID NO:12113) aaggacacgggcagcagcagtggtcagtcctttcttggctctgctgacactcgagcccacattccgtcacctgctcaga 65 atcatgcaggtctccactgctgcccttgctgctcctcctctgcaccatggctctctgcaaccagttctctqcatcacttqc tgctgacacgccgaccgcctgctgcttcagctacacctcccggcagattccacagaattcatagctgactactttgaga cgagcagccagtgctccaagcccggtgtcatcttcctaaccaagcgaagccggcaggtctgtgctgaccccagtqaqqaq tgggtccagaaatatgtcagcgacctagagctgagtgcctgaggggtccagaagcttcgaggcccagcgacctcggtggg ccagtggggaggagcaggagcctgagccttgggaaacatgcgtgtgacctccacagctacctcttctatggactggttgt 70 cgatttcacagtgtgtttgtgattgtttgctctgagagttcccctgtccccttccccttccctcacaccgcgtctggtga caaccgagtggctgtcatcagcctgtgtaggcagtcatggcaccaaagccaccagactgacaaatgtgtatcggatgctt ttgttcagggctgtgatcggcctggggaaataataaagcacgctcttttaaaaggt (SEQ ID NO:12114) acageettgacettatgtcatgggttcaacttggacactgaaaacgcaatgacettecaagagaacgcaaggggettegg gcctctaccagtgcgactacagcacaggctcatgcgagcccatccgcctgcaggtccccgtggaggccgtgaacatgtcc ctgggcctgtccctggcagccaccaccaccagccccctcagctgctggcctgtggtcccaccgtgcaccagacttgcagtga gaacacgtatgtgaaagggctctgcttcctgtttggatccaacctacggcagcagccccagaagttcccagaggccctcc atgaaggagtttgtctcaactgtgatggagcaattaaaaaagtccaaaaccttgttctctttgatgcagtactctgaaga 80 attccggattcactttaccttcaaagagttccagaacaaccctaacccaagatcactggtgaagccaataacgcagctgc ttgggcggacacacacggccacgggcatccgcaaagtggtacgagagctgtttaacatcaccaacggagcccgaaagaat

qcctttaaqatcctagttgtcatcacggatggagaaaagtttggcgatcccttgggatatgaggatgtcatccctgaggc agacagagagggagtcattcgctacgtcattggggtgggagatgccttccgcagtgagaaatcccgccaagagcttaata ccatcgcatccaagccgcctcgtgatcacgtgttccaggtgaataactttgaggctctgaagaccattcagaaccagctt cgggagaagatetttgcgatcgagggtactcagacaggaagtagcagctcctttgagcatgagatgtetcaggaaggett cagcgctgccatcacctctaatggccccttgctgagcactgtggggagctatgactgggctggtggagtctttctatata gccatcatcttacggaaccgggtgcaaagcctggttctgggggcacctcgatatcagcacatcggcctggtagcgatgtt caggcagaacactggcatgtgggagtccaacgctaatgtcaagggcacccagatcggogcctacttcggggcctccctct gctccgtggacgtggacagcaacggcagcaccgacctggtcctcatcggggccccccattactacgagcagacccgaggg ggccaggtgtccgtgtgcccttgcccagggggcagagggctcggtggcagtgtgatgctgttctctacggggagcaggg gggcccaggagaggaggacaaccggggtgctgtttacctgtttcacggaacctcaggatctggcatcagccctcccat aatggatggactggtagacctgactgtaggagccaggggcacgtgctgctgctcaggtccaggcagtactgagagtca aggcaatcatggagttcaatcccagggaagtggcaaggaatgtatttgagtgtaatgatcaggtggtgaaaggcaaggaa gccggagaggtragagtctgcctccatgtrcagaagagcacacgggatcggctaagagaaggacagatccagagtgttgt gacttatgacctggctctggactccggccgccacattcccgcgcgtcttcaatgagacaaagaacagcacacgcagac tacaagctcggcttcttcaagcggcaatacaaggacatgatgagtgaagggggtcccccgggggccgaaccccagtagcg gctccttcccgacagagctgcctctcggtggccagcaggactctgcccagaccacacgtagcccccaggctgctggacac agtgtgtgcaagtgtetgtgtgcaagtgtgtgcacgtgtcggtgtgcatgtgcactcgcacgcccatgtgtgagtg catgtgtgtgtctcaggggcgtgtggctcacgtgtgtgactcagatgtctctggcgtgtgggtaggtgacggccagcgtag 45 agagccggatagggtagggccgcagaagtttctgagcgcggccaagccagcaggggcctcgggcctgagcctcggatcg agatcactccgtcccacgaactgatccaggcagtggggcccctccgcatgagagacgcggggcctcctggtggagcagcct ccctggccggggtggccgccagcccgaggttcaccctgcccgtgcccggcttcgagggctaccgcgagccgtttgctt gagcccgctagcagcggctcctctgccagctteatttctgacaccttctccccctacacctcgccctgcgtctcgccca ataacggcgggcccgacgacctgtgtccgcagtttcaaaacatccctgctcattattcccccagaacctcgccaataatg teacetegaaceageetegeegaggacagetgeetgggeegecactegeeegtgeecegteeggeeteeegeteeteate gcctggtgccaagcggaggcattcgtgcgccgaggccttggttgccctgcccccggagcctcaccccagcgctcccgga gccgtgatcatggatgccctgaacagcctcgccacggactcgccttgtgggatcccccccaagatgtggaagaccagccc tgacccctegccggtgtctgccgcccatccaaggccggcctgcctcgccacatctacccggccgtggagttcctggggc caagcatatccgcacacctgtaaaagtgaacttctacgtcatcaatgggaagagaaaacgaagtcagcctcagcacttta ggcctggggagccagccttactaccccagcacccgatggtggccgagtccccctcctgcctcgtggccaccatggctcc ctgccagcagttccgcacggggctctcatcccctgacgcccgctaccagcaacagaacccagcggccgtactctaccagc qgagcaagagcctgagccccagcctgctgggctatcagcagccggccctcatggccgcccccgctgtcccttgcggacgct ctcgcctgtgatccactactcacccaccaccagcagctgcgctgcggaagccaccaggagttccagcacatcatgtact cccacagtcattcagcagcagaatgccacgagccaaagagccgccaaaaacggacccccggtcagtgaccaaaaggaagt attacctgcgggggtgaccattaaacaggagcagaacttggaccagacctacttggatgatgttaatgaaattatcagga aggagttttcaggacctcctgccagaaatcagacgtaa (SEQ ID NO:12116) gctgcagcaccctgggccacgccgatgactactgcaaactgtggcgcccacgacgagctcgacttcaaactcgtctttgg

cqaqqacqqqqcqccggcgccqccccgggctcqcqqqcctqcaqatcttqaqccaqatqattqtqcatccatttaca tctttaatgtagatccacctccatctactttaaccacaccactttgcttaccacatcatggattaccgtctcactcttct gttttgtcaccatcgtttcagctccaaagtcacaaaaactatgaaggaacttgtgagattcctgaatctaaatatagccc cacatgaagatgacctacagataaatgacccagaacgggaattttttggaaaggccttctagagatcatctctatcttcct cttgaqccatcctaccgggagtcttctcttagtcctagtcctgccagcagcatctcttctaggagttggttctctgatgc gateccetetgaetteteetggtggeteteeagggggetgeeetggagaagaagettggeateaacagtatggaettgga cactcattatcacccaggcaatctccttgccactctcctagatccagtgtcactgatgagaattggctgagcccaggcc agcctcaggaccctcatcaaggcccacatccccctgtgggaaacggaggcactccagtgctgaagtttgttatgctgggt ccctttcaccccatcactcacctgttccttcacctggtcactcccccaggggaagtgtgacagaagatacgtggctcaat gcttctgtccatggtgggtcaggccttggccctgcagtttttccatttcagtactgtgtagagactgacatcctctcaa aacaaggaaaacttctgaagatcaagctgccatactaccaggaaaattagagctgtgttcagatgaccaagggagtttat ctttcagttccttcaccctttacctggagcaaaccaaagcctggccacacccctatatttcgcacatcttcattacctcc actagactggcctttaccagctcattttggacaatgtgaactgaaaatagaagtgcaacctaaaactcatcatcgagccc attatgaaactgaaggtagccgaggggcagtaaaagcatctactgggggacatcctgttgtgaagctcctgggctataac gaaaagccaataaatctacaaatgtttattgggacagcagatgatcgatatttacgacctcatgcattttaccaggtgca tcgaatcactgggaagacagtcgctactgcaagccaagagataataattgccagtacaaaagttctggaaattccacttc ttcctgaaaataatatgtcagccagtattgattgtgcaggtattttgaaactccgcaattcagatatagaacttcgaaaa ggagaaactgatattggcagaaagaatactagagtacgacttgtgttttcgtgtacacatcccacagcccagtggaaaagt cctttctctgcagatagcctctatacccgttgagtgctcccagcggtctgctcaagaacttcctcatattgagaagtaca gtatcaacagttgttctgtaaatggaggtcatgaaatggttgtgactggatctaattttcttccagaatccaaaatcatt tttcttgaaaaaggacaagatggacgacctcagtgggaggtagaagggaagataatcagggaaaaaatgtcaaggggctca cattgtccttgaagttcctccatatcataacccagcagttacagctgcagtgcagttgcacttttatctttgcaatggca agaggaaaaaaagccagtctcaacgttttacttatacaccagttttgctgaagcaagaacacagagaagagttgatttg agttgcagtgtagagatgagagtgttagtaaagaacagcatatgattccttctccaattgtacaccagccttttcaagtc 30 acaccaacacctcctgtggggtcttcctatcagcctatgcaaactaatgttgtgtacaatggaccaacttgtcttcctat taatgctgcctctagtcaagaatttgattcagtttggtttcagcaggatgcaactctttctggtttagtgaatcttggct gtcaaccactgtcatccataccatttcattcttcaaattcaggctcaacaggacatctctttagcccatacacctcattct tgaccagattacaggtcagccttcgtctcagttacaacctattacatatggtccttcacattcagggtctgttacaacag cttccccagcagcttctcatcccttgggtagttcaccgctttctgggccaccatctcctcagtttcagcctatgccttac caatctcctagctcaggaactggctcatcaccgtctccagccaccagaatgcattctggacagcactcaactcaagcaca aagtacgggccaggggggtctttctgcaccttcatccttaatatgtcacagtttgtgtgatccagcgtcatttccacctg atggggcaactgtgagcattaaacctgaaccagaagatcgagagcctaactttgcaaccattggtctgcaggacatcact ${\tt ttagatgatgaccaatttatatctgacttggaacaccagccatcaggttcagcagagaaatggcctaaccacagtgtgct}$ ctcatgiccagctcctttctggagaatctagaggtgaacgagataattgggagagacatgtcccagatttctgtttccca aggagcaggggtgagcaggctgccctcccgagtcctgagtccctggatttaggaagatctgatgggctctaacagt gcttactgcagccttgtgtccaccaacttctcagcatgtttctctctttggaccttgggtttccaactttcaacct tcaggtctggggcaggatgggacccaccatttgtggggaaagtagcattcctcaggccttgggtagatttg caaaagaacaggagcagcataggctgtttgagctttggggaaatgaactttgctttttatatttaactaggatacttta aatgatgggtgctttgagtgtgaatccagcaggctctcttgtttccgaggtgctgcttttgcaggtgacctggttactta actaggagtggtgatttgtactgctttatggtcatttgaagggccctttagtttttatgataatttttaaaataggaact tttgataagaccttctagaagcaa (SEQ ID NO:12117) gctgcagcaccctgggccacgccgatgactactgcaaactgtggcgccacgacgagctcgacttcaaactcgtcttttggcgcgacggggcgccggcgccgccgcccccgggctcgcggctgcagatctttaca 50 tetttaatgtagateeacetecatetaetttaaceacacetttgettaccacateatggattacegteteactettet gttttgtcaccatcgtttcagctccaaagtcacaaaactatgaaggaacttgtgagattcctgaatctaaatatagccc cacatgaagatgacctacagataaatgacccagaacgggaattttttggaaaggccttctagagatcatctctatcttcct cttgagccatcctaccgggagtcttctcttagtcctagtcctgccagcagcatctcttctaggagttggttctctgatgc 55 gatcccctctgacttctcctggtggctctccagggggctgccctggagaaaaacttggcatcaacagtatggacttgga cactcattatcacccaggcaatctccttgccactctcctagatccagtgtcactgatgagaattggctgagcccaggcc agcctcaggaccctcatcaaggcccacatccccctgtgggaaacggaggcactccagtgctgaagtttgttatgctgggt ccctttcaccccatcactcacctgttccttcacctggtcactcccccaggggaagtgtgacagaagatacgtggctcaat gcttctgtccatggtgggtcaggccttggccctgcagtttttccatttcagtactgtgtagagactgacatccctctcaa ctttcagttccttcaccctttacctggagcaaaccaaagcctggccacacccctatatttcgcacatcttcattacctcc actagactggcctttaccagctcattttggacaatgtgaactgaaaatagaagtgcaacctaaaactcatcgagccc attatgaaactgaaggtagccgaggggcagtaaaagcatctactgggggacatcctgttgtgaagctcctgggctataac gaaaagccaataaatctacaaatgtttattgggacagcagatgatcgatatttacgacctcatgcattttaccaggtgca tegaatcactgggaagacagtcgctactgcaagccaagagataataattgtgcagtacaaaagttctggaaattcactttgtattctggaaattccctttctggaaattcccttctggaaattcccttctgaaaactccgcaattcagatatagaacttcgaaaaggagaaactggatattggcaggtattttttgtgtgtacacatcccacagcccagtggaaaaggagaaactgatattggcagtattcggaaacttgtgtgtttcgtgtacacatcccacagcccagtggaaaagt 70 cctttctctgcagatagcctctatacccgttgagtgctcccageggtctgctcaagaacttcctcatattgagaagtaca gtatcaacagttgttctgtaaatggaggtcalgaaatggttgtgactggatctaattttcttccagaatccaaaatcatt tttcttgaaaaaggacaagatggacgacctcagtgggaggtagaagggaagataatcagggaaaaatgtcaaggggctca cattgtccttgaagttcctccatatcataacccagcagttacagctgcagtgcagttgcacttttatctttgcaatggca agaggaaaaaaaagccagtctcaacgttttacttatacaccagttttgctgaagcaagaacacagagaagaagagttgatttg 75 tetteagttecatettigeetgtgeeteateetgeteagaccoagaggeetteetetgatteagggtgtteacatgacag tgtactgtcaggacagagagtttgatttgctccatcccacaaacatatgcatccatggtgacctcatcccatctgccac agttgcagtgtagagatgagagtgttagtaaagaacagcatatgattccttctccaattgtacaccagccttttcaagtc acaccaacacctcctgtggggtcttcctatcagcctatgcaaactaatgttgtgtacaatggaccaacttgtcttcctat taatgctgcctctagtcaagaatttgattcagtttggtttcagcaggatgcaactctttctggtttagtgaatcttggct gtcaaccactgtcatccataccatttcattcttcaaattcaggctcaacaggacatctcttagcccatacacctcattct ğigcatacceigcetcatetgcaatcaatgggatatcattgifcaaatacaggacaaagatcietttettetceagtggg tgaccagattacaggtcagccttcgtctcagttacaacctattacatatggtccttcacattcagggtctgttacaacag

 $ca a tete cetage teaggaact {\tt ggeteateaccgtetecag} ceaccaga {\tt atgeatetetggacag} ca {\tt atgeateag} ca {\tt at$ aagtacgggccaggggggtctttctgcaccttcatccttaatatgtcacagtttgtgtgatccagcgtcatttccacctg atggggcaactgtgagcattaaacctgaaccagaagatcgagagcctaactttgcaaccattggtctgcaggacatcactttagatgatgatttgtttaccagtaataattttgacttgcttcagttgagacctacgttttggccagtcccagcaggaag ggagtgggacccaccatttgtggggaaagtagcattcctccacctcaggccttgggtagatttggcaaaagaacaggagc agcataggctgtttgagctttggggaaatgaactttgctttttaactagattacttttaactagatacttttaaatgatggtgcttt
gagtggaatccagcaggctctcttgtttccgaggtgctgcttttgcaggtgacctggttacttaactaggatgctgt
gagtgtgaatccagcaggctctctttgtttccgaggtgctgcttttgcaggtgacctggttacttaactaggatgctgtgat
ttgtactgctttatggtcatttcgaagggccctttagtttttataattattttaaataggaacttttgataagaccttc tagaaqcaa (SEO ID NO:12118) gctgcagcaccctgggccacgccgatgactactgcaaactgtggggcccacgacgagctcgacttcaaactcgtctttgg 15 cgaggacqqqqqqqcqcqqcqccqccqcccccgggctcgcggcctgcagatcttgagccagatgattgtgcatccatttaca tctttaatgtagatccacctccatctactttaaccacactactttgcttaccacatcatggattaccgtctcactcttct gttttgtcaccatcgtttcagctccaaagtcacaaaaactatgaaggaacttgtgagattcctgaatctaaatatagccc cacatgaagatgacctacagataaatgacccagaacgggaattttttggaaaggccttctagagatcatctctatcttcct 20 cttgagccatcctaccgggagtcttctcttagtcctagtcctgccagcagcatctcttctaggagttggttctctgatgc atcitcttgtgaatcgctitcacatatttatgatgatgtggactcagagitgaatgaagctgcagcccgatttacccttg gateceetetgactteteetggtggeteteeagggggetgeeetggagaagaaacttggeateaacagtatggacttgga cacteattateacecaggeaateteettgeeacteteetagatecagtgteactgatgagaattggetgageeceaggee agcetcaggaccetcateaaggeccacateeceetgtgggaaacggaggcaetecagtgetgaagtttgttatgetgggt 25 ccctttcacccatcactcacctgttccttcacctggtcactcccccaggggaagtgtgacagaagatacgtggctcaat gcttctgtccatggtgggtcaggccttggccctgcagtttttccatttcagtactgtgtagagactgacatccctctcaa aacaaggaaaacttctgaagatcaagctgccatactaccaggaaaattagagctgtgttcagatgaccaagggagtttat ctttcagttccttcaccctttacctggagcaaaccaaagcctggccacacccctatatttcgcacatcttcattacctcc attatgaaactgaaggtagccgaggggcagtaaaagcatctactgggggacatcctgttgtgaagctcctggggctataac
gaaaagccaataaatctacaaatgtttattgggacagcagatgatcgatatttacgacctcatgcattttaccaggtgca
tcgaatcactggggaagacagtcgctactgcaagccaagagataatatttccagtacatctgggaaattccacttc ttcctgaaaataatatgtcagccagtattgattgtgcaggtattttgaaactccgcaattcagatatagaacttcgaaaa 35 ggagaaactgatattggcagaaagaatactagagtacgacttgtgtttcgtgtacacatcccacagcccagtggaaaagt cctttctctgcagatagcctctatacccgttgagtgctcccagcggtctgctcaagaacttcctcatattgagaagtaca gtatcaacagttgttctgtaaatggaggtcatgaaatggttgtgactggatctaattttcttccagaatccaaaatcatt tttcttgaaaaaggacaagatggacgacctcagtgggaggtagaagggaagataatcagggaaaaatgtcaaggggctca cattgtccttgaagttcctccatatcataacccagcagttacagctgcagtgcagtgcacttttatctttgcaatggca 40 agaggaaaaaaagccagtctcaacgttttacttatacaccagttttgctgaagcaagaacacagagaagaagagttgatttg tcttcagttccatctttgcctgtgcctcatcctgctcagacccagaggccttcctctgattcagggtgttcacatgacag tgtactgtcaggacagagaagtttgatttgctccatcccacaaacatatgcatccatggtgacctcatcccatctgccac agttgcagtgtagagatgagagtgttagtaaagaacagcatatgattccttctccaattgtacaccagccttttcaagtc acaccaacacctcctgtggggtcttcctatcagcctatgcaaactaatgttgtgtacaatggaccaacttgtcttcctat gtcaaccactgtcatccataccatttcattcttcaaattcaggctcaacaggacatctctttagcccatacacctcattct cttccccagcagcttctcatcccttgggtagttcaccgctttctgggccaccatctcctcagtttcagcctatgccttac 50 caatctcctagctcaggaactggctcatcaccgtctccagccaccagaatgcattctggacagcactcaactcaagcaca aagtacgggccaggggggtctttctgcaccttcatccttaatatgtcacagtttgtgtgatccagcgtcatttccacctg atggggcaactgtgagcattaaacctgaaccagaagatcgagagcctaactttgcaaccattggtctgcaggacatcact ttagatgatggtaagttcatctctgatatgttcttgaagtagtgaagattcagggactttattctcccaagtgtcatgaa aaagtttctatggattgcttattggcatatggttgggcttttaaataagttgttattagaaatatatgttaatatata 55 tttgccaggtaccacggctcacgcctgtatcccagdactttggaaggctgaggcgggtggatcacaaggtcaggagttca taatcccagctactcgggaggctgagacaggagaatcacttgaacccgggaggtggcagttgcagggagctaagatcgcg 60 ggggctggaggaccaggagttcgacttcgagttcctcttcgagttlaaccagcgcgacgaggggcgccgccgccgccgccgcc cagaacactatggctatgcatcctccaacgtcagccccgccctgccgctcccacggcgcactccaccctgccggccccg tgccacaacettcagacetecacacegggcatcatecegeeggatcaceceteggggtacgggtacggagcagetttggacgg tgggcctgcgggctacttcctctcctccggccacaccaggcctgatggggcccctgccctggagagtcctcgcatcgaga taacctcgtgcttgggcctgtaccacaacaataaccagtttttccacgatgtggaggtggaagacgtcctccctagctcc 65 ${\tt aaacggtccccttcacggccacgctgagtctgcccagcctggaggcctacagagacccttcgtgcctgagcccggccag}$ cagcctgtcctcccggagctgcaactcagaggcctcctcctacgagtccaactactcgtacccgtacgcgtccccccagacgtcgccatggcagtctccctgcgtgtctcccaagaccacggacccgaggagggctttccccqggggctgggggcctg acgagacggaggcagccggggggccgtgaaggccgtcggccggaggacaccccatcgtgcagctcaccaccgagcccact aatgagccgctgatgctgcagcttttcattgggacggcggacgacgcctgctgcgcccgcacgccttctaccaggtgca ccgcatcacagggaagaccgtgtccaccaccagccacgaggccatcctctccaacaccaaagtcctggagatcccactcc tgccggagaacagcatgcgagccgtcattgactgtgccggaatcctgaaactcagaaactccgacattgaacttcggaaa qqagaqacqgacatcqqqagaaqaacacacqqqtacqqctqqtqttccqcqttcacqtcccqcaacccaqcqqccqcac gctgtccctgcaggtggcctccaaccccatcgaatgctcccagcgctcagctcaggagctgcctctggtggagaagcaga gcacggacagctatccggtcgtgggggggaagaagatggtcctgtctggccacaacttcctgcaggactccaaggtcatt

ttcgtggagaaagccccagatggccaccatgtctgggagatggaagcgaaaactgaccgggacctgtgcaagccgaattctctggtggttgagatcccgccgtttcggaatcagaggataaccagccccgtttcacgtctacgtctacgtctgcaacggga agagaaagcgaagccagtaccagcgtttcacctaccttcccgccaacgttccaattataaaaacaqaacccactgatgat gatgccacccgaccccagctcctgcctcgtggccggcttcccgccctgtccgcagagaagcaccctgatgccagcggcccctggcgtgagccccaagctccacgacctttctcccgctgcctacaccaagggcgttgccagcccgggccactgtcacctc cacacctggtaccactcagaacctccaactgactgaatgccaggagctgaacattaatatgtgcaaagattggctctcca acaagaaggaaagcagggaggaagggagaccactgtgtcgcctggaggagaagtcatctcatgacaacagaagggaggtg gccgggctgagcacggagacccaccgtgcaggggcctttcatgggaacggccacacgcagtttgaccccacgcccagcc cttctggcacccctggggttcaatactggaagtgccttatttaaccagaccatca (SEQ ID NO:12120) agcaggaagctcgccgccgtcgccgccgccgctcagcttccccgggcgcgtccaggacccgctgcgccaggcgcgccg 15 tccccggacccggcgtgcgtccctacgaggaaagggaccccgccgctcgagccgcctccgccagcccaactgcgaggggt cccagagccagccgcccccccgccccgcagccttcccgccctgcgcccatgaacgcccccgagcggca gccccaacccgacgggggacgccccaggccacgagcctgggggcagcccccaagacgagcttgacttctccatcctct tegactatgagtatttgaateegaaegaagaagaegegaatgeaeataaggtegeeageeeaceteeggaeeegeatae cccgatgatgtaatggactatggcctcaagccatacagccccttgctagtctctctggcgagccccccggccgattcgg agagccggatagggtagggccgcagaagtttctgagcgcggccaagccaggaggcctcgggcctgagccttcggatcg agatcactccgtcccacgaactgatccaggcagtggggcccctccgcatgaggagacgcgggcctcctggtggagcagcct cccctggccggggtggccgccagcccgaggttcaccctgcccgtgcccggcttcgagggctaccgcgagccgctttgctt gagccccgctagcagcggctcctctgccagcttcatttctgacaccttctccccctacacctcgccctgcgtctcgcca ataacggcgggcccgacgacctgtgtccgcagtttcaaaacatccctgctcattattcccccagaacctcgccaataatg 25 30 ttacgagctgcggatcgaggtgcagcccaagccacatcaccgggcccacttatgagacagaaggcgaggcgagctgtca aagctccaactggaggccaccctgtggttcagctccatggctacatggaaaacaagcctctgggacttcagatcttcatt gggacagetgatgageggateettaageegcacegecttetaceaggtgeacegaateaeggggaaaaactgteaecaceac cagetatgagagagatagtgggcaacaccaaagteetggagateeeettggaggecaaaaacaacatgagggcaaecateg cgggtgagactggtttttccgagttcacatcccagagtccagtggcagaatcgtcttttacagactgcatctaaccccat agcaaatgatcctcacggggcagaactttacatccgagtccaaagttgtgttttactgagaagaccacagatggacagcaa caagcatatccgcacacctgtaaaagtgaacttctacgtcatcaatgggaagagaaaacgaagtcagcctcagcacttta cccacagtcattcagcagcagaatgccacgagccaaaggagccgccaaaacggacccccggtcagtgaccaaaaaggaagt attacctgcggggtgaccattaaaacaggagcactacttggaccattattatgaaattatcagga aggagttttcaggacctcctgccagaaatcagacgtaagctgcagcaccctgggccacgccgatgactactgcaaactgt ggcgcccacgacgacttcaaactcgtctttggcgaggacggggcggcggcgccgcccccgggctcgcggc tgcagatettgagccagatgattgtgcatecatttacatetttaatgtagatecacetecatetactttaaccacaccae tttgcttaccacatcatggattaccgtctcactcttctgttttgtcaccatcgtttcagctccaaagtcacaaaaactat gaaggaacttgtgagattcctgaatctaaatatagcccattaggtggtcccaaaccctttgagtgcccaagtattcaaat tacatctatctctcctaactgtcatcaagaattagatgcacatgaagatgacctacagataaatgacccagaacgggaat ttttggaaaggcettetagagateatetetatetteetettgageeateetaeegggagtettetettagteetagteet gccagcagcatctcttctaggagttggttctctgatgcatcttcttgtgaatcgctttcacatatttatgatgatgtgga ctcagagttgaatgaagctgcagcccgatttacccttggatcccctctgacttctcctggtggctctccaggggggctgcc 60 65 70 gtgtttcgtgtacacatcccacagcccagtggaaaagtcctttctctgcagatagcctctatacccgttgagtgctccca gcggtctgctcaagaacttcctcatattgagaagtacagtatcaacagttgttctgtaaatggaggtcatgaaatggttg 75 tgactggatctaattttcttccagaatccaaaatcatttttcttgaaaaaggacaagatggacgacctcagtgggaggta gaagggaagataatcagggaaaaatgtcaaggggctcacattgtccttgaagttcctccatatcataacccagcagttac ttttgctgaagcaagaacacagagaagagttgatttgtcttcagttccatctttgcctgtgcctcatcctgctcagacc cagaggccttcctctgattcagggtgttcacatgacagtgtactgtcaggacagagaagtttgatttgctccatcccaca aacatatgcatccatggtgacctcatcccatctgccacagttgcagtgtagagatgagagtgttagtaaagaacagcata tgattccttctccaattgtacaccagccttttcaagtcacaccaacacctcctgtggggtcttcctatcagcctatgcaa actaatgttgtgtacaatggaccaacttgtcttcctattaatgctgcctctagtcaagaatttgattcagtttggtttca

g caggatg caact ctttctggtttagtgaatcttgg ctgtcaaccactgtcatccataccatttcattcttcaaattcagctgggccaccatctcctcagtttCagcctatgccttaccaatctcctagctcaggaactggctcatcaccgtctccagcc accagaatgcattctggacagcactcaactcaagcacaaagtacgggccaggggggtctttctgcaccttcatccttaat atgtcacagtttgtgtgatccagcgtcatttccacctgatggggcaactgtgagcattaaacctgaaccagaagatcgag agcctaactttgcaaccattggtctgcaggacatcactttagatgatcactttatatctgacttggacacaccagcca tcaggttcagcagagaaatggcctaaccacagtgtgctctcatgtccagctcctttctggagaatctagaggtgaacgag gtccctggatttaggaagatctgatgggctctaacagtgcttactgcagccttgtgtccaccaccaacttctcagcatgt ttctctccttggaccttgggtttccaactcttcaaccttcaggtctggggccaggagtgggacccaccatttgtggggaa agtagcattcctccacctcaggccttgggtagatttggcaaaagaacaggagcagcataggctgtttgagctttggggaa atgaactttgctttttatatttaactaggatacttttaaatgatggtgctttgagtgtgaatccagcaggctctcttgt ttccgaggtgctgcttttgcaggtgacctggttacttaactaggagtggtgatttgtactgctttatggtcatttgaagg acgccgatgactactgcaaactgtggcgcccacgacgagctcgacttcaaactcgtctttggcgaggacgggggcgccggc gccgccgccccgggctcgcggcctgcagatcttgagccagatgttgtgcatccatttacatctttaatgtagatccac ctccatctactttaaccacaccactttgettaccacatcatggattaccgtetcactcttctgttttgtcaccatcgttt 20 ctttgagtgcccaagtattcaaattacatctatctctcctaactgtcatcaagaattagatgcacatgaagatgacctac agataaatgacccagaacgggaatttttggaaaggccttctagagatcatctctattcttctttgagccatcctaccgg gagtcttctcttagtcctagtcctgccagcagcatctcttctaggagttggttctctgatgcatcttcttgtgaatcgct 25 ctggtggctctccagggggctgccctggagaagaaacttggcatcaacagtatggacttggacactcattatcacccagg caatctccttgccactctcctagatccagtgtcactgatgagaattggtggcggagccccaggccaggccagcctcatc
aaggcccacatcccctgtgggaaacggaggcactccagtgctgaagtttgttatgctgggtccctttcaccccatcact
cacctgttccttcacctggtcactcccccaggggaagtgtgacagaagatacgtggctcaatgcttctgtccatggtgg
tcaggccttggccttgccctgcagtttttccatttcagtactgtgtagagactgacatccctctcaaaacaaggaaaacttctga
agatcaagctgccatactaccaggaaaattagagctgtgttcagatgaccaagggagtttatcaccagccgggagactt 30 tttacctggagcaaaccaaagcctggccacacccctatatttcgcacatcttcattacctccactagactggcctttacc agctcatttttggacaatgtgaactgaaatagaagtgcaacctaaaactcatcatcgagcccattatgaaactgaaggta gccgagggcagtaaaagcatctactgggggacatcctgttgtgaagctcctgggctataacgaaaagccaataaatcta caaatgtttattgggacagcagatgatcgatatttacgacctcatgcattttaccaggtgcatcgaatcactgggaagac agtegetactgcaagecaagagataataattgccagtacaaaagttctggaaattccacttcttcctgaaaataatatgt cagecagtattgattgtgcaggtatttttgaaactccgcaattcagatatagaacttcgaaaaggagaaactgatattggc agaaagaatactagagtacgacttgtgttttcgtgtacacatcccacagcccagtggaaaagtcctttctctgcagatagc ctctatacccgttgagtgctcccagcggtctgctcaagaacttcctcatattgagaagtacagtatcaacagttgttctg taaatggaggtcatgaaatggttgtgactggatctaattttcttccagaatccaaaatcatttttcttgaaaaaggacaa gatggacgtcagtgggaggtagaagggaagataatcagggaaaaatgtcaaggggctcacattgtccttgaagttcc cctgtgcctcatcctgctcagacccagaggccttcctctgattcaggtgttcacatgacagtgtactgtcaggacagag
aagtttgatttgctccatcccacaaacatatgcatccatggtgacctcatcccatctgccacagttgcagtgtagaagag gggbcttcctatcagcctatgcaaactaatgttgtgtacaatggaccaacttgtcttcctattaatgctgcctctagtca aqaatttqattcaqtttqqtttcaqcaqqatqcaactctttctgqtttaqtqaatcttqqctqtcaaccactqtcatcca taccatttcattcttcaaattcaggctcaacaggacatctcttagcccatacacctcattctgtgcataccctgcctcat gccttcgtctcagttacaacctattacatatggtccttcacattcagggtctgttacaacagcttccccagcagcttctc atcccttgggtagttcaccgctttctgggccaccatctcctcagtttcagcctatgccttaccaatctcctagctcagga actggctcatcaccgtctccagccaccagaatgcattctggacagcactcaactcaagcacaaagtacgggccagggggg tetttetgeacetteateettaatatgteacagtttgtgtgateeageteattteeacetgatggggeaactgtgagea 55 accagtaataattttgacttgcttcagttgagacctacgttttggccagtcccagcaggaagatatctgaggaatctaga gagtcctgagtccctggatttaggaagatctgatgggctctaacagtgcttactgcagccttgtgtccaccaactacttc tcagcatgtttctctccttggaccttgggtttccaactcttcaaccttcaggtctggggccaggagtgggacccaccatt tgtggggaaagtagcattcctccacctcaggccttgggtagatttggcaaaagaacaggagcagcataggctgtttgagc 65 tagatocacctccatctactttaaccacaccactttgcttaccacatcatggattaccgtctcactcttctgttttgtca ccatcgtttcagctccaaagtcacaaaactatgaaggaacttgtgagattcctgaatctaaatatagcccattaggtgg teccaaaccetttgagtgcccaagtattcaaattacatetatetetcaactgtcatcaagaattagatgcacatgaag atqacctacaqataaatgacccagaacgqqaatttttqqaaaggccttctagagatcatctctatcttcctcttgagcca 70 tcctaccgggagtcttctcttagtcctagtcctgccagcagcatctcttctaggagttggttctctgatgcatcttcttg tqacttctcctggtggctctccagggggctgccctggagaagaaacttggcatcaacagtatggacttggacactcatta teacceaggeaateteettgeeactetectagateeagtgteactgatgagaattggetgageeceaggeeageeteagg accetcatcaaggeccacatccccetgtgggaaacggaggcactccagtgetgaagtttgttatgetgggtccctttcac 75 cccatcactcacctgttccttcacctggtcactcccccaggggaagtgtgacagaagatacgtggctcaatgcttctgtc catggtgggtcaggccttggccctgcagtttttccatttcagtactgtgtagagactgacatccctctcaaaacaaggaa aacttctgaagatcaagctgccatactaccaggaaaattagagctgtgttcagatgaccaagggagtttatcaccagccc ccttcaccctttacctggagcaaaccaaagcctggccacacccctatatttcgcacatcttcattacctccactagactg gcctttaccagctcattttggacaatgtgaactgaaaatagaagtgcaacctaaaactcatcatcgagcccattatgaaa ctgaaggtagccgaggggcagtaaaagcatctactgggggacatcctgttgtgaagctcctgggctataacgaaaagcca ataaatctacaaatgtttattgggacagcagatgatcgatatttacgacctcatgcattttaccaggtgcatcgaatcac

ataatatgtcagccagtattgattgtgcaggtattttgaaactccgcaattcagatatagaacttcgaaaaggagaaact gatattggcagaaagaatactagagtacgacttgtgtttcgtgtacacatcccacagcccagtggaaaagtcctttctct aaagccagtctcaacgttttacttatacaccagttttgctgaagcaagaacacagagaagagagttgatttgtcttcagtt ccatctttgcctgtgcctcatcctgctcagacccagaggccttcctctgattcagggtgttcacatgacagtgtactgtc 10 aggacagagaagtttgatttgctccatcccacaaacatatgcatccatgqtgacctcatcccatctgccacagttgcagt gtagagatgagagtgttagtaaagaacagcatatgattccttctccaattgtacaccagccttttcaagtcacaccaaca cctcctgtggggtcttcctatcagcctatgcaaactaatgttgtgtacaatggaccaacttgtcttcctattaatgctgc ctctagtcaagaatttgattcagtttggtttcagcaggatgcaactctttctggtttagtgaatcttggctgtcaaccac tgtcatccataccatttcattcttcaaattcaggctcaacaggacatctctttagcccatacacctcattctgtgcatacc 15 tacaggtcagccttcgtctcagttacaacctattacatatggtccttcacattcagggtctgttacaacagcttccccag cagetteteatecettgggtagtteacegetttetgggceaceateteeteagttteageetatgeettaceaateteet agctcaggaactggctcatcaccgtctccagccaccagaatgcattctggacagcactcaactcaagcacaaagtacggg ccaggggggtctttctgcaccttcatccttaatatgtcacagtttgtgtgatccagcgtcatttccacctgatggggcaa 20 ctgtgagcattaaacctgaaccagaagatcgagagcctaactttgcaaccattggtctgcaggacatcactttagatgat ggtaagttcatctctgatatgttcttgaagtagtgaagattcagggactttattctcccaagtgtcatgaaaaagtttct atggattgcttattggcatatggttgggcttttaaataagttgttattagaaatatatgttaatatatatactttgccagg taccacggctcacgcctgtatcccagcactttggaaggctgaggcgggtggatcacaaggtcaggagttcaagaccagcc tggccaacatggtgtaacgctgtctctactaaaaatacaaaaaattagccaggcatggtggtgtgtgactataatcccag 25 cctggcggccgcgaccccggctccggcccggcccgccatgacggggttggaggaccaggagttcgact tcgagttcctcttcgagtttaaccagcgcgacgacgacgccgcgcgccccagaacactatggctatgcatcctcc aacgtcagcccggcctgccgctccccacggcgcactccaccctgccggccccgtgccacaaccttcagacctccacacc 30 gggcatcatcccgccggcggatcacccctcggggtacggagcagctttggacggtgggcctgcgggctacttcctcct ccggccacaccaggcctgatggggcccctgccctggagagtcctcgcatcgagataacctcgtgcttgggcctgtaccac aacaataaccagtttttccacgatgtggaggtggaagacgtcctccctagctccaaacggtccccctccacggccacgct gagtetgeccagcetggaggeetacagagaccetegtgeetgageeggeeagcageetgteeteeegggeaact
cagaggeeteeteetacgagteeaactactegtaceegtaegegteeeecagaegtegeeatggeagteteeetgegtg 35 teteccaagaceaeggaceegaggaggettteeeegegggetggaggeetgeaeaetgetgagtteeeegeggeaete acaagaggaagtacagcctcaacggccggcagccgccctactcaccccaccactcgcccacgccatcccgcacggctcc ccgcgggtcagcgtgaccgaccgtcgtggttgggcaacaccaccagtacaccagctcggccatcgtggccgccatcaa cgcgctgaccaccgacagcatggacctggagatggcgtccctgtcaagtcccgcaagaccaccctggagcagccgc cctcagtggcgctcaaggtggagccgtcggggaggacctgggcagcccccggccccggccgacttcgcgcccgaagac tactcctctttccagcacatcaggaagggcggcttctgcgaccagtacctggeggtgccgcagcacccctaccagtgggc gaageeeaageeeetgteeeetacgteetacatgageeegaeeetgeeegeeetggaetggeagetgeegteeeacteag gcccgtatgagcttcggattgaggtgcagcccaagtcccaccaccaccactacgagacggagggcagccaggggggcc gtgaaggcgtcggccggaggacaccccatcgtgcagctgcatggctacttggagaatgagccgctgatgctgcagctttt cattgggacggcggacgaccgcctgctgcgcccgcacgccttctaccaggtgcaccgcatcacagggaagaccgtgtcca ccaccagccacgaggccatcctctccaacaccaaagtcctggagatcccactcctgccggagaacagcatgcgagccgtc cacacgggtacggctggtgttccgcgttcacgtcccgcaacccagcggccgcacgctgtccctgcaggtggcctccaacc ccatcgaatgctccagcgctcaggtcaggagctgcctctggtggagaagcaggacaggacagctatccggtcgtgggcgggaagaagatggtcctgtctggccacaacttcctgcaggactccaaggtcattttcgtggagaaagccccagatggcca 50 ccatgtctgggagatggaagcgaaaactgaccgggacctgtgcaagccgaattctctggtggttgagatcccgccgtttc ggaatcagaggataaccagccccgttcacgtcagtttctacgtctgcaacgggaagagagaagcgaagccagtaccagcgtttcaccttccccgccaacgttcaacagcgaacccactgtggacc 55 togtggccggcttcccgcctgtccgcagagaagcacctgatgccagcggcccctggcgtgagccccaagctccacgac cccgccgtccaggacgtgcccaggccagtggccacgcaccccggctcgcccgggcagccaccccggccttgctgccac agcagtaaatgaaataatacgaaatgacctctccagcacgagcacccactcctagttgccacattggagcactcagttca 60 aactgactgaatgccaggagctgaacattaatatgtgcaaagattggctctccaacaagaaggaaagcagggggaaggg agaccactgtgtcgcctggaggagaagtcatctcatgacaacagaagggaggtggccgggctgagcacggagacccaccg tgcaggggcctttcatgggaacggccacacgcagtttgacccacgccagccttctggcacccttggggttcaatac tggaagtgccttatttaaccagaccatca (SEQ ID NO:12121) accgtggacaagcacagcgacgagtacaagatccggcgcgagcgcaacaacatcgccgtgcgcaagagccgcgacaaggc caagatgcgcaactggagcacaaaggtcctggagctcacggccgagaacgaggctgcagaagaaggtggagcagctgtcgcgcgagggaattc (SEQ ID NO:12122) 70 acccagcatgtctccccctgccgccgccgccgcctgcctttaaatccatggaagtggccaacttctactacgaggcggac cgagctgggcagcatcggcgaccacgagcgccatcgacttcagccgtacctggagccgctgggcgcgccgcaggccc 75 cgccgcccgccgagctcaaggcggagccgggcttcgagcccgcggactgcaagcggaaggaggaggccggggccgggg ggcggcgcaggcatggcggggcttcccgtacgcgctgcgcttacctcggctaccaggcggtgccgagcggcagcag cgggagcetetecacgtectectegtecagecegeeeggcacgeeggeeeggtgaegeeaaggeeeeeeegaeegeet gatacgcggggggccgggccggcgcctcgcaggtcaagagcaaggccaagaagaccgtggacaagcacagcgacgagtac aagateeggegegagegeaacaacategeegtgegeaagageegegacaaggeeaagatgegeaacetggaqaeqeaqea

caaggtcctggagctcacgggcgagaacgagctgcagaagaaggtggagcagctgtcgcgcgagctcagcaccctgcggaacttgttcaagcagctgccgagcccctgctcgcctcctccggccactgctagcggcgccccgggggtccccctg gaatteecaaggegeceeegaeegeetgetaegegggggeegeeggegeeetegeaggteaagageaaggeeaagaag accgtggacaagcacagcgacgacgtacaagatccggcgcgagcgcaacaacatcgccgtgcgcaagagccgcgacaaggc caagatgcgcaacctggagacgcagcacaaggtcctggagctcacggccgagaacgagcggctgcagaagaaggtggagc ccgcccttataaataaccgggctcaggagaaactttagcgagtcagagccgcgcacgggactgggaaggggaccaacccg 15 gctcagagcagggaggccgcgcacctgcgggccggagcggagcggcagcccaaggcccctcccccgggcacccgcgttca tgcaacgcctggtggcctgggacccagcatgtetccccctgccgccgccgcctgcctttaaatccatggaagtggcc aacttetactacgaggeggaetgettggetgetgegtaeggeggeaaggeggeeceeggeggegeeceegeggecagaee cgggccgcgcccccccggcggcgagctgggcagcatcggcgaccacgagcgcgccatcgacttcagcccgtacctggagc 20 cgctgggcgcgccgcaggcccggccacggccacggacacettcgaggcggctccgcccggccccgcgccccgcg cccgcctcctccgggcagcaccacgacttcctctccgacctcttctccgacgactacgggggcaagaactgcaagaagcc ggecgagtacggetacgtgagectgggggectggggetgecaagggegetgeaccceggetgeteetegegeceetge acccaccgcccgccgccgccgccgccgagctcaaggcggagccggggttcgagcccgcgggactgcaagcggaag 25 ggcggtgccgagcggcagcagcgggagcctctccacgtcctcctcgtccagcccggcacgccgagccccgctgacg gacaaagcacaagcgacgagtacaagatccggcgcgagcgcaacaacatcgccgtgcgcaagagccgcgacaagagcgcaagat gcgcaacctggagacgcagcacaaggtcctggagctcacggccgagaacgagcggctgcagaagaaggtggagcagctgt cgcgcgagctcagcaccctgcggaacttgttcaagcagctgcccgagccctgctcgcctcctccggccactgctagcgc atctatttctatgagaaaagagggtctgtatatttttgggaatcttttccgtttcaagcaattaagaacacttttaataa actttttttg (SEQ ID NO:12124) gaccagagcaatttctgcttttcacagggcggtttctcaacggtgacttgtgggcagtgccttctgagcgagtcat ggcccgaaggcagaactaactgtgcctgcagtcttcactctcaggatgcagccgaggtgggcccaagggggcacgatgtg 40 gcttggagtcctgctgacccttctgctctgttcaagccttgagggtcaagaaaactctttcacaatcaacagtgttgaca tgaagagetgeeggaetggaeggtgeaaaatgggaagaaeetgaeeetgeagtgettegeggatgteageaeeaeetet cacgtcaagcctcagcaccagatgctgttctataaggatgacgtgctgttttacaacatctcctccatgaagagcacaga gagitattitatteetgaagieeggaietatgaeteagggaeatatataaatgtaetgtgattgtgaacaacaaagagaaaa gggatcgtgagggtcaactgttctgtcccagaggaaaaggccccaatacacttcacaattgaaaaaacttgaactaaatga aaaaatggtcaagctgaaaagagagaagaattctcgagaccagaattttgtgatactggaattccccgttgaggaacagg accgcgttttatccttccgatgtcaagctaggatcatttctgggatccatatgcagacctcagaatctaccaagagtgaactggtcaccgtgacggaatccttctctacacccaagttccacatcagcccaaccggaatgatcatggaaggagctcagct ccacattaagtgcaccattcaagtgactcacctagcccaggagtttccaggaagtattatcatgaaggagttagga tggccacaacagacattcaagtgactcacctggcccaggagtttccaggagaaattcataattcagaaggagacaaggcgattg tggcccacaacagacatggcaacaaggctgtgtactcagtcatggccatggtggagcacagtggagcactacacgtgcaac gtggagtccagccgcatatccaaggtcagcagcatcgtggtcaacataacagaactattttccaagcccgaactggaatc ttccttcacacatctggaccaaggtgaaagactgaacctgtcctgctccatcccaggagcacctccagccaacttcacca tccagaaggaagatacgattgtgtcacagactcaagatttcaccaagatagcctcaaagtcggacagtgggacgtatatc tgcactgcaggtattgacaaagtggtcaagaaaagcaacacagtccagatagtcgtatgtgaaatgctctcccagcccag 55 gatttcttatgatgcccagtttgaggtcataaaaggacagaccatcgaagtccgttgcgaatcgatcagtggaactttgc ctatttettaccaaettttaaaaacaagtaaagttitggagaatagtaccaagaaetcaaatgateetgeggtatteaaa gacaaccccactgaagacgtcgaataccagtgtgttgcagataattgccattcccacgccaaaatgttaagtgaggttct gagggtgaaggtgatagccccggtggatgaggtccagatttctatcctgtcaagtaaggtggtggagtctggaggggca ttgtgctgcaatgtgctgtgaatgaaggatctggtcccatcacctataagttttacagagaaaaagagggcaaacccttc tatcaaatgacctcaaatgccacccaggcattttggaccaagcagaaggctaacaaggaacaggaggagagtattactg cacageetteaacagageeaaccacgeeteeagtgteeccagaageaaaataetgacagteagagteattettgeeccat ggaagaaaggacttattgcagtggttatcatcggagtgatcattgctctcttgatcattgcggccaaatgttattttctg aggaaagccaaggccaagcagatgccagtggaaatgtccaggccagcagtaccacttctgaactccaacaacgagaaaat gtcagatcccaatatggaagctaacagtcattacggtcacaatgacgatgtcggaaaccatgcaatgaaaccaataaatg ataataaagagcctctgaactcagacgtgcagtacacggaagttcaagtgtcctcagctgagtctcacaaagatctagga aagaaggacacagagacagtgtacagtgaagtccggaaagctgtccctgatgccgtggaaagcagatactctagaacgga aggotocottgatggaacttagacagcaaggccagatgcacatcoctggaaggacatccatgttocgagaagaacagatg atcootgtatttcaagacototgtoc (SEQ ID NO:12125) atcaacagtgttgacatgaagagcctgccggactggacggtgcaaaatgggaagaacctgaccctgcagtgcttcgcggatgtcagcaccacctctcacgtcaagcccagcaccagatgctgttctataaggatgacgtgctgttttacaacatctcct ccatgaagagcacagagagttattttattcctgaagtccggatctatgactcagggacatataaaatgtactgtgattgtgaagagaacaaaagagaaaaccactgcagagtaccagctgttggtgggaaggagtgcccagtcccagggtgacactggacaagaa agaggccatccaaggtgggatcgtgagggtcaactgttctgtcccagaggaaaaaggccccaatacacttcacaattgaaa aacttgaactaaatgaaaaaatggtcaagctgaaaagagagaagaattctcgagaccagaattttgtgatactggaattc cccgttgaggaacaggaccgcgttttatccttccgatgtcaagctaggatcatttctgggatccatatgcagacctcaga atctaccaagagtgaactggtcaccgtgacggaatccttctctacacccaagttccacatcagccccaccggaatgatca tggaaggagctcagctccacattaagtgcaccattcaagtgactcacctggcccaggagtttccagaaatcataattcag aaggacaaggcgattgtggcccacaacagacatggcaacaaggctgtgtactcagtcatggccatggtggagcacagtgg caactacacgtgcaaagtggagtccagccgcatatccaaggtcagcagcatcgtggtcaacataacagaactattttcca

```
agcccgaactggaatcttccttcacacatctggaccaaggtgaaagactgaacctgtcctgctccatcccaaggagcacct
    ccagccaacttcaccatccagaaggaagatacgattgtgtcacagactcaagatttcaccaagatagcctcaaagtcgga
    cagtgqqacgtatatctgcactgcaggtattgacaaagtggtcaagaaagcaacacagtccagatagtcgtatgtgaaa
    tgcteteceagcccaggatttcttatgatgcccagtttgaggtcataaaaggacagaccatcgaagtccgttgcgaatcg
    atcagtqqaactttgcctatttccttaccaacttttaaaaacaagtaaagttttggagaatagtaccaagaactcaaatga
    tcctgcggtattcaaagacaaccccactgaagacgtcgaataccagtgtgttgcagataattgccattcccatgccaaa
    tgttaagtgaggttotgagggtgaaggtgatagccccggtggatgaggtccagatttctatcctgtcaagtaaggtggtg
    gagtotggagaggacattgtgotgcaatgtgctgtgaatgaaggatotggtoccatcacotataagttttacagagaaaa
    agagggcaaacccttctatcaaatgacctcaaatgccacccaggcattttggaccaagcagaaggctagcaaggaacagg
10
    agggagagtattactgcacagccttcaacagagccaaccacgcctccagtgtccccagaagcaaaatactgacagtcaga
    gtcattcttgccccatggaagaaaggacttattgcagtggttatcatcggagtgatcattgctctttgatcattgcggc
    caaatgttattttctgaggaaagccaaggccaagcagatgccagtggaaatgtccaggccagcagtaccacttctgaact
    ccaacaacgagaaaatgtcagatcccaatatggaagctaacagtcattacggtcacaatgacgatgtcagaaaccatgca
    atgaaaccaataaatgataataaagagcctctgaactcagacgtgcagtacacggaagttcaagtgtcctcagctgagtc
15
    tcacaaagatetaggaaagaaggacacagagacagtgtacagtgaagteeggaaagetgteeetgatgeegtggaaagea
    gatactctagaacggaaggctcccttgatggaacttagacagcaaggccagatgcacatccctggaaggacatccatgtt
    20
    tcagcctctcaaagtgctgggattaccggcatgagccacgactcccggccccaaaggtcaatcttaaagctacaaggtat
    cttttaaaaggagtaggaataacgtattttgaggcttaaaggagtaggaatagtgtatttttagatttgaagccatcttc
    gagatggagteteactetgttgcccaggetggagtacaatggtgtgateteageteactgcaacetetgcctectgggtt
25
    caagcaatteteetgeeteageeteetgagtageagggattacaggggttetecaccatgeetgtetaatttttgtattt
    cctcccaaagtgctgggattacaggcgtgagccaccatgcccagccgttaattctattcttactgcttactcccttattt
    tgtatgttcttcttctatcttacatcttttgctttttgctattgcttaagctagcctacgccaagggtgctcttttgcccc
    tacttcctctgctattctcgcctcagttccgctgcattccaagctcagcctgccccagcagcaggtctctttgacaaacc
30
    tgcaattttggggaaaagtcagcccaagaaaggcagggggccagacttatgctgtgtggcaaaagccctctttgatgg
    caaggcaaatgtcacttgtgccttgttttttccctaaagaaactaaacaaagcggccgcttcggtggcccctcaggaag
    gccggtcatttcctgaggagatatcaggccagcccaggccccattgttcccggtttccagccatggctgccattacctga
35
    ccagcgccacagccggtctctctgcaggcgccgggagaagtgaccagagcaatttctgcttttcacagggcgggtttctc
    40
    atcaacagtgttgacatgaagagcctgccggactggacggtgcaaaatgggaagaacctgaccctgccggatgcttcgcgga
    tgtcagcaccacctctcacgtcaagcctcagcaccagatgctgttctataaggatgacgtgctgttttacaacatctcct
    ccatgaagagcacagagagttattttattcctgaagtccggatctatgactcagggacatataaaatgtactgtgattgtg
45
    aacaacaaagagaaaaccactgcagagtaccagctgttggtggaaggagtgcccagtcccagggtgacactggacaagaa
    agaggccatccaaggtgggatcgtgagggtcaactgttctgtcccagaggaaaaggccccaatacacttcacaattgaaa
    aacttgaactaaatgaaaaaatggtcaagctgaaaagagagaagaattctcgagaccagaattttgtgatactggaattc
    cccgttgaggaacaggaccgcgttttatccttccgatgtcaagctaggatcatttctgggatccatatgcagacctcaga
    atctaccaagagtgaactggtcaccgtgacggaatccttctctacacccaagttccacatcagccccaccggaatgatca
50
    tggaaggageteageteeaeattaagtgeaeeatteaagtgaeteaeetggeeeaggagttteeagaaateataatteag
    aaggacaaggcgattgtggcccacaacagacatggcaacaaggctgtgtactcagtcatggccatggtggagcacagtgg
    \verb|caactacacgtgcaaagtggagtccagccgcatatccaaggtcagcagcatcgtggtcaacataacagaactattttcca||
    agcccgaactggaatcttccttcacacatctggaccaaggtgaaagactgaacctgtcctgctccatcccaggagcacct
    ccagccaacttcaccatccagaaggaagatacgattgtgtcacagactcaagatttcaccaagatagcctcaaagtcgga
    atcagtggaactttgcctatttcttaccaacttttaaaaaacaagtaaagttttggagaatagtaccaagaactcaaatga
    tcctgcggtattcaaagacaaccccactgaagacgtcgaataccagtgtgttgcagataattgccattcccatgccaaaa
    tgttaagtgaggttctgagggtgatagccccggtggatgaggtccagatttctatcctgtcaagtaaggtggtg
60
    gagtetggagaggaeattgtgctgcaatgtgctgtgaatgaaggatetggteccateacetataagttttacagagaaaa
    agagggcaaaccttctatcaaatgacctcaaatgccacccaggcattttggaccaagcagaaggctagcaaggaacagg
    agggagagtattactgcacagccttcaacagagccaaccacgcctccagtgtccccagaagcaaaatactgacagtcaga
    qtcattcttgccccatggaagaaggacttattgcagtggttatcatcggagtgatcattgctctcttgatcattgcggc
    caaatgttattttctgaggaaagccaaggccaagcagatgccagtggaaatgtccaggccagcagtaccacttctgaact
65
    ccaacaacgagaaaatgtcagatcccaatatggaagctaacagtcattacggtcacaatgacgatgtcagaaaccatgca
    atgaaaccaataaatgataataaagagcetetgaacteagacgtgcagtacacggaagttcaagtgtectcagetgagte
    tcacaaagatctaggaaagaaggacacagagacagtgtacagtgaagtccggaaagctgtccctgatgccgtggaaagca
    gatactctagaacggaaggctcccttgatggaacttagacagcaaggccagatgcacatccctggaaggacatccatgtt
    70
    caatteeteaggetaagetgeeggttettaaateeateetgetaagttaatgttgggtagaaagagataeagagggg (SEQ ID NO:12128)
    tettttggttttgetattgettaagetageetaegeeaagggtgetetttgeceeetactteetetgetattetegeete
    agttccgctgcattccaagctcagcctgcccagcagcaggtctctttgacaaacctgcaattttgggggaaaagtcagcccaagaaaggcaggggcccagacttatgctgtgtggcaaaagccctctttgatggggcaagggtaggactggaaaagcag
    ccgggagaagtgaccagaggcagaactaactgtgcctgcagtcttcactctcaggatgcagtgggcagtggcccaaggg
    gccacgatgtggcttggagtcctgctgacccttctgctctgtgagtgtttactctgtttccacatcactttaactccatg
    agcatcgaagcttctggaatcaacatgtttcttatgtttcttgcaggttcaagccttgagggtcaagaaaactgtaagtc
    tgatgtttccactgtaacagatgtttctacctggcttcctcctttctcttctgtgatgcctaaaacgcacattaaattgc
```

tggggtttgatacttctaacaattaaggaaaagaatccaattgagaactaaagtttatcccatgtgggcatttttagaaa ggcttagatctaagccaagttctggtcagtgtgttttagaagtagcacacgtttccttggctggtctgaaagtagtgggt tatcttgatgaattgtttagtcagttacagatcaaactccatgttcttttctctgttctcacgactactcttgactagtc tacting training training to a second control of the control of th atqaqcaattccataattagtttttttqttgttttaccataatggcttatttqaatattgtaaqqtatccccaactgtttt 10 tatttgcaaatgagatataattgatttgttagacatatgaagacagatcctagtttaaattgttgctactttttttactc ctaaatgataaaaatcacacactcgagctc (SEQ ID NO:12130) ttggcaggctggtctcaaactcctgacctcaggtgatccgctggcctccacctcccaaagtgctgggattacaggtgtga atgagcaattccataattagtttttttgttgttttaccataatggcttatttgaatattgtaaggtatccccaactgtttt 15 tatttgcaaatgagatataattgatttgttagacatatgaagacagatcctagtttaaattgttgctacttttttactc ctaaatgataaaaatcacacactcgagctc (SEQ ID NO:12131) gctgtcccacagcccacccttcatcacaatagtcctgaaactttttgggttcagtaaggaaatctgtgggccttctctcc gtcccccaggttgtgaacagtcactctgtgtaaatagtgagacctacaggcagtaattcagtttggctgtgcttggctgg 20 tttatttagaaagatgataatgttt (SEQ ID NO:12132) gagctctccaagggcagacactgccagcctcactgttctctgaacccccagtatgggacagtgcttggcacagaaaaacc cccttaaatgtttgctatgaatggtgctaaggaagaaggcagagaatgtcaaccagaggccaggcactggcaatatatac acggcccc (SEQ ID NO:12133) ataccttggctcactgcaacctctgcctcccaggttcaagcagttctcctgcctcagtctcccaagtagctgggattaca ggcgcccaccaccacccggctaattttgtatttttagtagagatgaggtttcaccatgttggccaggctggtcttgaa ctcctgacctcaagtgatccacccgcctcggcctcccaaagtgctgggattacaggcataaaccaccgtgcccggctggt cca (SEO ID NO:12134) gagetcatccagcaggettettaaatcaggagettgtaagttgcatataaagacaaaaaagggagttecaaagagtaatg ctgtgggaaatgacttgaatttaaaccgtcaccttgtttgatctcatggactggtcagacaccatttttgttgtcgttgt tgttgttaaattaattgctcagaatatagcagcaggcgcaaattgtagtactcgttttaaaattgaagattaaatttaa attacccaacaaaggcctaactttgttaaaag (SEQ ID No:12135) gaattctaccgacagcctatggttactggttactggtcagttctggggacttgccagaaattggcca 30 gttgacccacagcctagttcctagcagagattggatagctgattgagcgttgtggctgttttgaggcttgaccagagatt cctgccgttggcagaggggaatctgtagtctttgcttcttggtagcaggtgaggtgagaaaacgcaagtagcaggctaaaa 35 actggtttcaagtcctcaccatctggtgaaacctcagagcccatcagatagaaaatgccagctggqactgtgctaattcg gtaaggcctgggtggagaaggagggcctgggcacgaccatctggtttcggaatggaggtagcagtcatttattaagtact taatgtatategggcactgtacaggagacgttetggetgtteteetgtacattteetgcaaagacetaatgagatatgat tactccatcctacaggtaaggaaactgagctcagagagtctagctgcccagggtcacacagtaaatgatgagccaggact tgaacacttgactgcttgaatcctgtactccctccaggggccaagatgtggcagctcacagaatgcctatatctttttt 40 ttttttgtcttttgagacagtctcactctgttgcccaggctggagtgcagtgagatctcacctcactgcaacccccg cctcccaggttcaagtgattcttgtgcctcagcctctcaagtagctgggttacaggcctgcaccaccaaacctggctaat ttttgtatttttagtagagaggggtttcaccatgttggccaggccagtctctaactgctgacctcaggtgatccaccca ccttggteteccaaagtgetgggattataggegtgagecaccatacetagetetacatetttateactetgtteetttge cttggtgggaaaagttgcagcttagtaccaactgcctcctgcttgagccactgtgcacagttactatcagcctggccctg taggcacgtagaacccctggactcaatactgcataggatgggataagaccacatctgatgtggtgaaggtcaccggggatg atgttgtttctgagataacaggtatgtctgccttccttcgggttgcatttagctttcacaatcaacagtgttgacatgaa gagcctgccggactggacggtgcaaaatgggaagaacctgaccctgcagtgcttcgcggatgtcagcaccacctctcacg tcaagcetcagcaccagatgetgttetataaggatgacgtgetgttttacaacateteeteeatgaagagcacagagag tattttattcctgaagtccggatctatgactcagggacatataaaatgtactgtgattgtgaacaacaaagagaaaaccac 50 tgcagagtaccagctgttggtggaaggtgagtccttggaactgagcacagcagcagcagatggacatagcacacagtggc tecttacetgaatacgtaagcactagacatattececaataggcaggceetteetteetteetteetteetteetteett ccttccttccttccttccttccttccttccttcctttctttctttgatggagtctcactctgtcacccagtctggagtgc agtgggtgateteggeteactgeaacetetgeeteeeaggtteaagegatteteetgeeteagecteeeaagtaattggg 55 attacaggtgtgtgccaccaccacctggctaattttgtatttttagtagagatggggtttcactgtgttggtcaggctggt tctaCaggcaatggtatttgtgtgtataaaggccacagcggtgtgttaagaCacctcgttctgcagtcactctgcctggg tttcaatcttgggtcaagtccttaacatgctctaaacttcaaaatcctcaccagtaaaaggaagataacaacgataccca tttcaggcaattattgagagggttaaaagtgtcatgtgggtagagtgcttagcaaaatttccagcacctagtgagttcct aataaatagaaatgtatttatttatttgagacagagtcttcctctgtcacccaggctaaagagcaatggcgcgaccttgg $\tt ctcactgcaacctctgtctcctgggttcaagcgattctcctgtctcagcctcccaagaaactgggattacaggcacgcacgcgcacgcgcacgcgcacgcgcacgcgcacgcacgcgcacgc$ cactgtgcctggctaattttttgtatttttagtaaggatgggttttaccatgttggccagcctggtctcgaactcctaa cttcaagtgatttacccaccttggcctcccagagtgtcaggattacaggtgtgagccaccatgcccggtccacaaatatt gtttgggtttattcttatatcttgaacaatgaatctggctcatagtaggcattcagtcaatgttcatggaataaattaaa ctggagggcagtggcacgatctcagctcactgcaacctctgccttcggggttcaagcaattctcctgcctcagcctccaa 70 gtagctgggattacaggtgcctgccaccatgccggctaattttgatttaatagagatggggttcgccatgttggccaggc tggtctcaaactcctgacctcaggtgatccacctgcctcagcctcccaaagtgttgagattacagatgtgagccacctcg cgtggccttagtggtgattttggtggacccatcacccgagcagtgtacactgtacccagtgtgtagtcattttatccctc gctccctcccactctttcccctgagtccccaaagtccactgtatcattcttatgcctttgtttcctcatagcttagctcc 75 cattgagcatattttatattttttccttttctttctctttttttgagacagggtctctgttgcccaggctggagtgca gtggtgggattactgctcactgccgcctcaacctcctaggctcaagtgattctcccacctcggcctcccaagtagctggg aggctggtctccaactcctgggctcaagagatccaccacctcagcctccagattttatatatttcaaagtgcctagtac tgtgctgggcacatacctgttcatttattacctggtaggtcgcactgggtgttcagagacaaaaaaagagccctctcatg የበ ggatcaactacagtcactcagcggaggggagggcttgtgtctctcaatcaggctgatactgacagactttcttcttcaat caggctgatactgacatgactttctactttccccgtaggagtgcccagtcccagggtgacactggacaagaagaggcca

tccaaggtgggatcgtgagggtcaactgttctgtcccagaggaaaaggccccaatacacttcacaattgaaaaacttgaa

ctaaatgaaaaaatggtcaagctgaaaaagagaagaattctcgagaccagaattttgtgatactggaattccccgttga ggaacaggaccgcgttttatccttccgatgtcaagctaggatcatttctggggatccatatgcagacctcagaatctacca agagtgaactggtcaccgtgacgggtcagcatctgctcccttcctcatcgttctttgtggtttctggt (SEQ ID NO:12136) gttctagagaagaaaggttgaattttaaagttagttaggaacaatagaaaagtttgaaaaaggggaagcagcaaaaagagc agaagaggctcctcttgcccaggtttgcacctgagtccaaccaggttgtcttcctctcttgcagaatccttctctacacc Caagttccacatcagccccaccggaatgatcatggaaggagctcagctccacattaagtgcaccattcaagtgactcacc tggcccaggagttttccagaaatcataattcagaaggacaaggcgattgtggcccacaacagacatggcaacaaggctgtg tactcagtcatggccatggtggagcacagtggcaactacacgtgcaaagtggagtccagccgcatatccaaggtcagcag catcgtggtcaacataacaggtagggctgctgctgccggagggtgttggcatatggcgggctcaagaggccaccatgctg 10 ctcgtgggaggaaaccactgcagagcgagttaacagtctactgtgcgtgttgagggtacaggctccggcaccaaagctta accotgoogotcactgottotgtgacottgggtgagttattgaacgtgoogoagogotgtgagatggtgataatgacott ttaggactgctataatgattaatgagataactatactgtaagcatgagctgagagatttgtacagagtaagactctgaaa cactggttaatgttttcattactctgttatatttctccatcccctgtgacaagcactatgctagatc (SEQ ID NO:12137) 15 ctatcaattttgttgatcctttcaaaaaaccagctcctggattcattaattttttgaagggttttttgtgtctctatttc 20 cttcagttctgctctgattttagttatttcttgccttctgctagcttaaggagtttcattcttgttgcccaggctggagt gcagtggagcaatctcggctcactgcaatctctgtctcctgggttcaagggattctctcttgcctcagcctcccgagtatct gggattacaggcgcccaccaccatgctggctaattttatattttagtagagatggggtttcaccatgttgcccaggctg gtctcaactcctgacctcaggtgatccacccacctctgcctcccaaagtgctgggattacaggcatgagccaccacacct 25 tcctaggcaaagaatgaaccctagctccttactggggtgatcgttaggtacatgagaagcaaaggaaaactttttgctgg ${\tt aagttggaagttggttctgccaagagcacctgagccaagggcctctccaggaagggtctttagggtggtcgccagacaca}$ 30 gtggtcaagaaaagcaacacagtccagatagtcgtatgtggtgagtatattgttgcgactcagaggacatccggggttga atgggagaaaggaaatttatetgcagetgeegeeteteeggteteeggtetgageagacteaggcagggtaagaactag aggagagaagtgcgaaatcaaaggccaaagaaacaaggaggtattcctgctcagaacactgattcactgatgatgatgt ttagtcaatgttaaacttttcttttttttttttgagacgtgtcgcccaggctagagtgcagtggcacgatagctcactgc 35 aacctctgcctcctaggttcaagtgatctcctgcctcagcctccaagtagctgggattacaggtgcccaccaccacqtc cagtgccagtggcacaatctgggcatcactggaaagcatccgcactcctgggtacacgagcattctcctgcctcagccct cccaagtgggtgtggactacaggacacaccgt (SEQ ID NO:12138) tcacttgagtccaggagttcaagaccagcctgagcacatagtgagaccctgtctctacaaaaaataaagaattagccagg 40 tgtggtgtgcacctatagtcccagctactcgggaggctgaggtaggaggattgcttgattctgggaggttgtagtgagct cattttgttggctacttgttgtactttttctatgttttctgtgtctttgctcaacacaagaaagtatattatgtgtgca tgtgcgtgtgagatatggtaaaatatgaacatgtatttctggggatgtaatgttttccttgaatttctgtcattctctgt 45 aatgeteteecageccaggatttettatgatgeccagtttgaggteataaaaggacagaccategaagteegttgegaat cgalcagtggaactttgcctatttcttaccaacttttaaaaacaagtaaagttttggagaatagtaccaagaactcaaat gatcctgcggtattcaaagacaccccactgaagacgtcgaataccagtgtgttgcagataattgccattcccacgccaa 50 aatgttaagtgaggttetgagggtgaaggtgataggtaagttgetgtgetgtgagaagaaateatgtqqqettqqqqcat tctttcacccccagggactgtggggacaataagagaagtagggggccaggtgcggtggctcatgcctgtaatcccagcac tttaggaggccaaggccggtgaatcattgaggccaggagttcaagaccagcctggccaacatggtgaaaccccatctcta ctaaaaatacaaaaattagctgggcatgatggcgtgcgcctataatcccagccactcgggaggctgaggcaggagaattg cttgaacccaggaagcacaggttgcactgagccaagttgcgccattgcactccagcctgagcaacaagagcgaaactcca 55 tctaaaaaaaaaaagcgagagaagtagtgggtgcttatgcaaagtccatatactagatatgcaccaaagcagggccaag gttcagtaaaggaggctggaaaatatttggggggctattgatgaggacaatataatctctttccagaacctttcaacaaac tgctaaaagatgataagcatgaaagtgtcctgactgcaggaagcactgaagttgtgcatatgggcttcccttagcacttt ctccttttcagatacactgttctgagaattgtagatcaggactctgctgttgtgactcctagccggggaaccctgccttg tgtgaattcgagattagcctggccaacatggtgaaatcctgtctctaataaaaatacaaaaaattagctgggtgtggtgg 60 tgggcacctttaatgccagctactcgggaggctgaggcacaagaatcatttgaacctgggaggcagaggctgcagtgagc actaagcacctaatggtgtgaggcatacaaaaaagaagacatattctttgtttcaatgctgtggtaagaaacacaagctc toctaatgaaaatgatggacaaacatctgaatcatactaccaataagcatagaaaaaatgttgggggtcatgtttggttg teacgtgaactatateettacagtgatggtgatagtaatttagggtatgccagacttcatetagcttaagtgggtaaaca 65 ttgtgaaaaagctgggctaggtgccagggcttgagaatgggtggccagagaaggctgaagatggctgaacatctccagca aacacatgagccaaaaggtcccatggggcacttcaaaagactgtgcgcagccaggtgcggtggctcacgcctataatccc agcaetttgggagaccgaatggggtggatcaettgagcccagaggtttgtgactagettggccaacatggcaaaaccccg tototactaaaaatacaaaaattagoccagogtggtggtggtgtcctgtagocccagotactcaggtggctgaggtggt agaatcacttgaatccaggaggcagaggttgcagtgagccaagatcgtgccactgcactccagcctgggtgacagagtga 70 gactctatctccacaaaaaaaaaaaaaaaaaaaaaattaaaggactgtggccaaatcagatggctggaaacaaaggctg gagtttgggaatggagaatcaccggatatgagctgaaaaagtggctgagcctaagcgtgacaggtgtcaggtgccagtct gatecacctggtggctgggtcagggagcaggcatggtgacttcagacctcatggtacgttagaggctaatgtgaagcca tgtgaagctgttggtttaaactgggtcgatatcagtggcacacatttactgaccatgtgtccagccctqtgtgaagtact 75 gtagtaaattgctccaatggaaactcacaataaccacagaaggccagtaacagcattgtcgttattttatcatgacgcaa ctgaggcttagggcagacagctggtggtggtgggactgggatttgagcccactggtgtcccaggcccggagcttggctt cttccattgtcttaccacagcctgcactcacaggagagtgactcataagttacaataccatctgctgaccatctgctctc acactagaaggaaagtetacttggggagacaatttaggateegaattttggtagttgaggatggagctaggaaaagegga tacaggaggtagccaagttctgcttggacctgcagggagtgaggctggccgggctccaggtggaaatccccaggtgaaaa gggagacttggagttcaggaaagtaacctggactggagccataggtttaggtgtcagtggctcagagacagaagctcagc gtgtaggtgaaatcacccaggaggagaatgggaatggaaaactgaggattgaattttgcaaaatgttcatacttccgggg aaaacaaagaataaccagtgaataagaaaggggtgccaggtaagaagggaagagaatcagagtcatgaggaaccccagaa

```
aacttgagagagagtgcagtgtcacaagattgtgactacaaaagagtgcagtcagatttcaggggtaacaagaaagtgtg
      aaataagggagtcaaagcataaaggaaaaaggagaaaaaatggccgatagctagagaaggcgtgggtcaagattgtctgt
ggcctggcatggtggcttatgcctgtaatcccagcattttggaaggccgaggtgggcaaatcacctgaggtcaggaattc
      gatgaggtccagatttctatcctgtcaagtaaggtggtggagtctggagagacattgtgctgcaatgtgctgtgaatga
aggatctggtcccatcacctataagttttacagagaaaaagaggcaaacccttctatcaaatgacctcaaatgccaccc
      aggcattttggaccaagcagaaggataacaaggaagaggagagtattactgaaaggagcaaccac
gcctccaqtgtccccagaagcaaaatactgacagtcaggaggagagtattactgcacagccttcaacagagccaaccac
caagggcaagaccagaaaacaccccccttgtaagagggagagtttggggggagtctagcttatgtgactgaaggctaggag
gtaatgtcctccaggctcttggttgcaagtgacagaaacccactcaaattaagtaaaaaagagaaatcgattattataag
      gaattgggagaatgtcacatcgttccaattacaaattgttggcagactcaccattgagtcatcttgggtcaaacatccac
ccacagaccacctgtagccaaggggattgggtcacgcagaacagacatgattggggaaccacttatgtgggtga
      ggtttcctggagaagaagagggctgaaaacacatgccaaaaaggagtctactccacttgagccctggagttggagaccag
      cctgggcaacatggtgaaaccctgtctctacaaaaagtacaaaaataggctgggcgcagtggctcatacctgtaatccca
20
      gctactcgggaggctgagacatgagaatcacttgaacccaggaggtagaggttgcagtgagcagagcttgctccactgca
      gtagtcccagctactcgggaggctgaggtggaaggattgctcaagcccaggaagttgaggctgcagtgagctgtcatcag
      tccctccttgaggaccacagctgacctctatttgtagcagaaacaatcatttctgcaccagctctgagtgcagaacccct
25
      atattatttetteetgeeagaggaagageetatataeaaaaaaattttttgttttgttttgtttteagteattettgee
      ccatggaagaaaggacttattgcagtggttatcatcggagtgatcattgctctcttgatcattgcggccaaatgttattt
      cgtggtgcttttctgacccctggattcagctaggcaaaaatgaaagctattattttcctcattgggcaaaccagaaaaga
30
      taaaatttgggggaaattacatctttgtgtggttagaagaagccatttctgtagatttgtccacacctagtcctgtaatg
      tgaaatctccctttctttatgaaattataatggtagtagataattttttaaaatttgacaaaatagagttggcctttaaa
40
      aaatggttttactacctttactgttgttgaaatcccaaatcaaaagtatagaaatgattgctctgttccagagagaaaca
      gtagcgtgggataagaatttcagggggcttggtagtagcctgtgaaggactccggtattcatgtgtgctttggtctgatg
ttatttaataggaaagtt (SEQ ID NO:12140)
      aaaaaaaaaaaagttttttttacataatoottggagotgocaaaaaatatttgttttccaaatgagagagtaaagttttc
      cttaccttggaaaactettcctggttttctcatgatettcccttgtttactttggtggtttggagttagaacaataacaa
45
      caacaaatatatctatatattgttttctgtttttatatttcattttaaaggccagcagtaccacttctgaactccaacaa
      cgagaaaatgtcagatcccaatatggaagctaacagtcattacggtaaagtcatgttctcctgccatttataattccccc
      caacttgctacatacttccttacccctctcagaagcagaatatgtaagtggtgggattacagttggaagagaaaccctgg
      ctccagcgtaatattataattctccagtagaagaaagatgggagatataatatatagactaatgatttgaattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattagattaga
55
      atagccacgactcaaatatattgatcttagaatctaaaagacttaggtctgggcgggtggctcacgcctgtaatctcaa
      cactttgggaggccgaggtaggtggatcacttgaggtcagctagttcaaaaaccacctggccaacatggtgtaaccctgtt
      gaatacccttgaacctgggaggttgcatgacctgatggacctcaacatgcacaccagtccgagcaacaagagcg
      aaactccatctcaaaaaagaaagaaagaaagaaactatattcaggccaggcatggtagttcatgcctataaccccagctc
60
      tttgggaggctgaggtgggaggatcattgagcccaggagttggagaccagcctgtgcaacaaagcgagacatggagaatg
      tggaacgagggacccagggacccagagacagtgctggttgtcactacactgaataaatcaggcttgactttgttaggggta
      tgacgatgtcagaaaccatgcaatgaaaccaataaatgataataaaggtaattatctaattacatgtttttattagaacc
      aacttttacattaaaaaaaagactcataggaaaagaaactaaaacttgaaggactgtggataatttcccacctctctta
65
      aagtacctaaatcaaagtagggaagaactgggttatactcaaaaaa (SEQ ID NO:12142)
      tgcgagatct (SEQ ID NO:12144)
      tgcaaacctetgcctocgggttaaagcagcattetcctcctcagcctcccgagtagctgggattacaggcatgtcaccg
      cgaacttetgaetteaaaagateeaceeeeteageeteeeaaagtgetgggattacaggtgtgag (SEQ ID NO:12145)
      qaattcaatttgagttttccagacccgtcctcctccttggcagctaaggagcagtgtggggaagtcaggcctgagcctcag
      gtgttccctctctgccttcctgtgggtggagagccaggtattaccaggtacgaaaaggggctttgtgggtacaaggctca
      gtggtgagtacatttgacctggtcttgaccaagccagttccctgctctcaagacttcctcctcctatggaggaggggttg
```

 ${\tt taaatcctggtttgctgcatgtttgctctgagactaattgctgggaaaaccccatgacgttggaagccatctccttctct}$ gttatcacagagaaaaacagaagccaaaataaagccccatccggaaacatccctgacagcagagacaaagagcctgccag ccacccatcacttaactgggcagatttgggggcagctgcaactctagaagctccaccaagaagcagaacccccaggccc aaaeaccaageceteteectecatttatteeteacetgeeceageeceaetgtgggeetgggtgggagggtgagetgge gcctcacagcctggagctcctgaaagctggggaccaggcccgatcacctttcctcttccacagtgcggggttcacactag gcctcacagcctggagctcctyaaayctyggaccaggcccgatcacctttcctctccacagtggggttcacactag gtgtctaggattctgctgagtgagtgatttggccaggcctgacatcaagcagggtgttctttggggatgtgtgaggatccc ccaatagggttggggatccctacagcttcccttgagggccccacatctggtgccacagaaagagagtgaggggtgtgtgg gcatctctgctgtcccagcagtgtggtgccctggtagctcagccactctactgagttccaaatcctgtttgggtgccctg ggggaagtcagtgtaagggcctagtca (SEQ ID NO:12146) aaggaggaaatccacttgaccatggcacaggaaccccccttacccaatctgggccttccctttccccatctgtaaaag qaqaacagtgcccacacgacatcagcctcttttcctacagtgagccttcctggccctttgtgcagtagacaggagctggg 15 acacccagattgcatgtttgtacatacagtgtgtatacaatgtgtgtagacacatcctatacactgtatgagggtataca taccccagtgtaaggtaaacagatggcaggaagggcgcccttgagtctcctccaggtatacgccacaccctgggtcagtc atcatgctgccatattgagagggtctagcccagaggatctcagccctgtctgcatattagggcccctgaggagatcctaa aaaaccagcaccagggaccccccagaccaatccaaccagaagctgcagtgaggcccaggagccagcagtgaaaacagcc 20 agcccagctgtctatctctgtaagagttctcagtcccagctattcctagggtcactgacaacccccaggctctaacccag acetcaggatettgttetggateceggggtetgggetetcaggtgattgggaggeeatageecaaecetgegttgaggga cctggcagaatgtctggacaagggtcacggtggcagggaagaggggggagcagcaagctggaggctgcaggcccttg ctggggggctctccatccgtgggcccttcaggtccaggggttcctctggtgcatgtgcatgtcctccacaatggcctgct 25 ggtgtgtcactgtgttgcccaggctggagtgcagtggcgcaatcttggctcactgcaacctctgcatcctgggttcaagc gattetegteeettagetetegagtaactgggateacagggaegeaceaceatgeeeggttaatttttttggaatttttag tagagacggggtttcggcatgttggccagaatggtctcaacctcctgacctcaagtgatcttgccccctcaacctcccaa ctggacctggttctggtggggtgcagtggtggggtacagccttgcctgcagagcctcagaccttttcctatgactgcagt ggactgacctcgttcccagaggcagctactaacttatgcctggtcctttttccagatctaggaaagaaggacacagagac 30 gctgtgggcttcctctctcccaccacccttaaaaagtcacctcgggtcacatttactattcatgtagtcaacgagcgctt cttqaatgcttactgaccccaqccqgtgacccttacctgctccccacacaggccctggtggctggggttccccaaggtct 35 gggatacggagtctcgctctgtcactcaggctggagtgcagtggtgcaatctcgactcactgcaacctccacttcccgga tttaagtgatteteetgeeteageeteecaagtagatgggattacaggegeetgteaceacactcagetaatttttttt tttatatttgggagacagagtttcgctcttgatgcccaggctggggtgcaatggag (SEQ ID NO:12147) 40 gggtttgcggatctactctatttcctttggttcggctgccccacttcgcttcccgtgacgacccactgcttactcatga aagggcttcccccagagctgagcacagagcttaagcagacccggaactgggggagctcaacaagtcctttttttcggtgg tccgaaagacgtaaacattgtgggggaaatagtgactgtgtgagtatctcgctttgtacagcagacctctatttaagtgg 45 ccaaaccagcagcagcaatctcgggcccagcccagacccacaaaactagtctctggaatctgaacttagccagcttcaga tcacccagactggagtacagcagtgccatctcagctgactgcaactccgtgcaacacccccagcccttaaggcttaagc gatcctcccaagtagctagaaccacagacacacaccatgcccagctaagtttttgtatttttggtagagatgaggtt 50 ttaccatgttgcccagactggtgttgaattcctgagctcaagcaatccaccccttcggcctcccaaagtgctgggatta caaqcqtgaqccactqtqccaqqcaaaaaqcactqttttagaagaaccatccaattctctgaggaccctgctttttatct gaaatagcgatcacttcttaattcacttttaaaagttggtatatctacaagaagaatagaaactcaacccttgtggaact tgaccotgaataatttttgaaaaaccaattototggggaatttttagotcaaatacotoattt (SEQ ID No:12148) 55 aaccagctcaaaacaatccttatgccaaaggggcatattttgtggtggcatattctgatttccttcatctgctttagggc ctttctttctttcctttcttttttttttttgagacagggtcttcgctctgtcacccaggctggagtgcagtggcgcga tegeageteactgeaaceteeageteeegggtteaagtgattettetgeeteageeteetgagtagetgggaceacaget actgccaccaccacgggtaattttttttgtatttttagtagagacggtgtttcaccatattggtcaggctgatctcgaa 60 ctccagacctcaggtgatccacctgccttggcctcccaaagtgctgggataacaggtgtgagacaccacgcccggccaga tcatat (SEQ ID NO:12150) gatcctatctacgggaaacatgaagagtaatattctactgtggcctgggtgaccctgggcaagtcatagagcctctcaag accttggtcaccttctctgtgagatgaggtatgggctggaggcaggtcagtggtcctcgggctttattaaaacatcaata gtttggcgcaccccactccctgtgaatttcccattcactaggtctggagcggtgccgaaaacgtgcatttctaacaggtg tccacagcagctactccagacacgctggggcccggggctttgagaaccactcttgatgcagcatgttcctttctgattg
tgccacgctaaggctcttcttgttggaaggagtagggtctttctcaccctccagaaatcctggagggatctttcagc cacagcactggcagggatcctgtgtgtctcagtttccctattgactctctgtggcctagagatgtatggtagaattccac 75 caccagcacccagcaaaatatttttatattttagtagagatggggtttcgtcacattggccaggctggtcttgaactcca caattttattcttaaaattgtggtaaaacacatatcacataaaatttaccattttaactctaagtatccagctcagtggc actaagactacacttttggttgtcatagcgtggtgaacagagaagagaatgctactgcgtctcgtggagagaggccaggg gataccgctaaacatgcgacaatgcacaggacagtcccctccccaccacaaaacaccacccagcccaaaatttcaacagg gccaccatggagaaaccctggccagaggaattcacctcctgcaactcctccaacaggagagctggttttcctctccagta ccagettgtggetgeeetetgtettgggagggtgaettaagggeacateceaeetgattaetgtgggetetggatgggtg

ctgagtcttggtctggggaacag (SEQ ID NO:12152) aaattacccaggcatggtggtgtgcgcctgtagtcccaccaacttgggaggctgaggcaggagaattccttgaatctggg aggcggagggtgcagtgagccgagatagtgccagctgaggcaggagaattccctggaggtagaggttacggtgagccaag aacctetaagggcactgccggctgatgtetectggctctcgcctcctcttttctcgacctgctcctgtga tgttgttggggcagttgaactgggttatttgcgttgctcactgccatgtcatcctttgttttgtagatgccgtggaaagc agatactctgtaagtacacatttcatatacattatatttaaaagtactccactgaacagtgaaatatttccagactcacc cacgcctgcattcacacgaattcttccccgctccctagcctgttcagaccagaagccctgggcttctctgactagccttg 10 gccagttctgatttcgaatattctctctctgcaatttccatcattacatctcagcccacacgtgaagggattgggactctg gggtgcttagcgccaaacaagcaaagcacacatttcgtttaacgccaaagtctaggctctggaagtgaggcagatctagg gtgtatgcttggaggagtggagcagctgacagctcattgcaatttagccgatactaattaccccctacacacaggccat cagetgeaggaggacaceceaagettettgaceteagtteacettetgatgagggaateagacatgtgateacttateata 15 ggaatggcccatgaagaatgaatggagtgatgatgccagcattgagggagaaagatcagcaggagcacaagggtgaggga tgaccagtttcaagcagtgtggggatgggaaagaagagtgtgacagtgacaagtgacgggagaaagataagtcagggctta aatccaaaggatttacatcccttgttaagaagcttcattctgtaggaaatgggagttaggaatctgcattttgtaggtcagatggg agggtttatgaaagacacagaggccaacgttcaacttttgcaaagacgtgtcttccaatcccaaccttttttgtgagctac ccagcaatgcaggagttaactgggcagctaatatctgaagaaatgaggcatttgccgcataaacttcttttaggtctggg aagaactttcagcaaagatttcaggtagctcttccagtggcccctggcttcctttgttttgcccatgtcaggactcttgt aaaacagagete (SEQ ID NO:12153) gagetecagettecagetgtettttgggtgageetgtetteeteaageteaagetteettatetataaagtggagatgg tgatgacaatgatgataagageaacetattaggattttaaggatgaaatgageaactgeaaceaceatataaaagetgea aqctqcaaaccaccatataaaaqctggttqatctcaagctcttttcatcacttgggcaatagtagtgtggatgggggac 25 ttaacttgatttggccatgaaatgaccctgccacatatggagaatgtagcagttgcttacccaaggcataggattcaacc aaqqccaqqctttqacttaqqaatcaqaqaccaacattaacatttgacttcccqcttcttaqccatgtcaccatgggcaa atttcttggcctctcaagacctctgcttcctaatctgtaaactgggaatcataaactccctcacttggttgttgcaaggg ttgaatgagcac (SEQ ID NO:12154) ctatcaatctccagagctttttctttttaagtgtgagcgagtttattagagaagtaaagagacccaagagtgcctactcc 30 atagacagagcagccactgtgacactgtacccattaaacactaactctccattgcccctccagcaacccctagcacccac tgtctactttctgtctctatgtggttgtctatttgagggacatcacataagtggagtcatatatttgtcctttcatgtct cccttatttcatttagcataacgttttcaagggtttcctgtgttgtgaatatatcagaatttcattctcttttaaggta gaatcatatcattttaaaacatttcagttggaccatctaagttcagtccttcattttcaacaattaaaaaaacagccctca accgggtgcatctcacgttagctagagacagaactggagctagaagtcagatctcttaccaaagttgcctttcttcttctgtgggtaagtggggcacccttgggacgctgtgctgggcgtacatgggtgcttgatgaagttacttggtggactgatgatgtga 35 ttgatgtccaacatgtatgcagggacagaggctatggtccctacagagcaggcatggagagaaggagaaatacattacggg caggagccaggagaggggggtgtagtgagcagagaccgcgccactgcactccagcctgagtgacagagtgagaatccat ctaaaaaattgcttactaaagaagtggtctcctgaggtcttaagacgttcctggcaatgtcttgagtggggagagag cctccagtcattgagctgtggaatttcagaggtgagaaccacacctaacccccaattactttcccctgtttgcctcagtg acacagctgcaggaaccctggtggtgttgtattaagtaaatttgacctttattctttgcagatctgtgaaatgttgtct tctgaggggcacgtgtatctgtagtgctgaggactccttggggcctctgaagtcacagagagaacctgcagggtgggg 40 accagtgtgtgacagccctgctttgcattttctttgagaagtgctgtcattttgcatttctctccaccaggggaatcttc aatcttqaqaqqtqtqatcataacttqccttqtttcttqtcgctacagagaacgqaaggctcccttgatggaacttagac agcaaggccagatgcacatccctggaaggacatccatgttccgagaagaacagatgatccctgtatttcaagacctctgt 45 gctaagttaatgttgggtagaaagagatacagaggggctgttgaatttcccacataccctccttccaccaagttggaaca tccttggaaattgggaagagcacaagaggagatccagggcaaggccattgggatattctgaaacttgaatattttgtttt gtgcagagataaagaccttttccatgcacctcatacacagaaaccaattttctttttatactcaatcatttctagcgc atggcctggttagaggctggttttttctcttttccttttggtccttcaaaggcttgtagtttttgggtagtccttgttcttt 50 ggaaatacacagtgctgaccagacagcctcccctgtcccctctatgacctcgccctccacaaatgggaaaaccagacta acaagcacatatgttcttcaactgtttttgtctacactctttctcttttcctctacatgctgaaaggctgaaagacaggaa agatggtgccatcagcaaatattattcttaattgaaaacttgaaatgtgtatgtttcttactaatttttaaaaatgtatt ccttgccagggcaggcaaggtcgtcacgcctgtaatcccagcacttcaggaggctgaggtgggcggatc (SEQ ID NO:12155) gaattccgggagaagtgaccagagcaatttctgcttttcacagggcgggtttctcactctcaggatgcacttgtgggcagtgcctc
ctgctgagcgagtcatggcccgaaggcagaactaactgtgcctgcagtcttcactctcaggatgactgtgcggggccc 55 aaggggccacgatgtgggcttggagtcctgctgacccttctgctctgttcaagccttgagggtcaagaaaactctttcaca atcaacagtgttgacatgaagagcctgccggactggacggtgcaaaatgggaagaacctgaccctgcagtgcttcgcgga tqtcaqcaccacctctcacgtcaagctcaqcaccagatgctgttctataaggatgacgtgctgttttacaacatctcct 60 ccatgaagagcacagagagttattttattcctgaagtccggatctatgactcagggacatataaatgtactgtgattgtg aacaacaaqqaaaaaccactgcagagtaccagctgttggtggaaggagtgcccagtcccagggtgacactggacaagaa agaggccatccaaggtgggatcgtgagggtcaactgttctgtcccagaggaaaaggccccaatacacttcacaattgaaa aacttgaactaaatgaaaaaatggtcaagctgaaaagagagaagaattctcgagaccagaattttgtgatactggaattc cccgttgaggaacaggaccgcgttttatccttccgatgtcaagctaggatcatttctgggatccatatgcagacctcaga 65 atctaccaagagtgaactggtcaccgtgacggaatccttctctacacccaagttccacatcagccccaccggaatgatca tggaaggagctcagctccacattaagtgcaccattcaagtgactcacctggcccaggagtttccagaaatcataattcag aaggacaaggcgattgtggcccacaacagacatggcaacaaggctgtgtactcagtcatggccatggtggagcacagtgg caactacacgtgcaaagtggagtccagcgcatatccaaggtcagcagcatcgtggtcaacataacagaactattttcca agcccgaactggaatcttccttcacacatctggaccaaggtgaaagactgaacctgtcctgctccatcccaggagcacct 70 ccagccaacttcaccatccagaaggaagatacgattgtgtcacagactcaagatttcaccaagatagcctcaaagtcgga atcagtggaactttgcctatttettacaactttaaaacaagtaaagttttggagataaytacaagaacttaaatya tcctgcggtattcaaagaaacaccaatgaagacgtcgaataccagtgtgttgcagataattgccatttccaagtagtgttgttgaggatagttctattcctattccagtgcgataggtctggatgaggttctgaggagaggtcagattttacagaggaaaaaaggtggtg gagtctggagagggaaattgtgctgtccaattgtgctgtaaagtaggagaaaaaaggggcaaacccttctatcaaatgccacccaggcattttggaccaagcaggaaggctagcaaggaacagg 75 agggagagtattactgcacagccttcaacagagccaaccacgcctccagtgtccccagaagcaaaatactgacagtcaga gtcattcttgccccatggaagaaaggacttattgcagtggttatcatcggagtgatcattgctctcttgatcattgcggc canatgttattttctgaggaaagccaaggccaagcagatgccagtggaaatgtccaggccagcagtaccacttctgaact ccaacaacgagaaaatgtcagatcccaatatggaagctaacagtcattacggtcacaatgacgatgtcagaaaccatgca atgaaaccaataaatgataataaagagcctctgaactcagacgtgcagtacacggaagttcaagtgtcctcagctgagtc

tcacaaagatctaggaaaggacacagagacagtgtacagtgaagtccggaaagctgtccctgatgccgtggaaagca gatactctagaacggaaggctcccttgatggaacttagacagcaaggccagatgcacatccctggaaggacatccatgtt caattcctcaggctaagctgccggttcttaaatccatcctgctaagttaatgttgggtagaaagagatacagagggg (SEQ ID NO:12156) gaccagagcaatttctgcttttcacagggcgggtttctcaacggtgacttgtgggcagtgccttctgctgagcgagtcat ggcccgaaggcagaactaactgtgcctgcagtcttcactctcaggatgcagccgaggtgggcccaaggggccaacgatgtg gcttggagtcctgctgacccttctgctctgttcaagccttgagggtcaagaaaactctttcacaatcaacagtgttgaca tgaagagcetgceggactggacggtgcaaaatgggaagaacetgaccetgcagtgcttegcggatgtcagcaccacetetcacgtcaagcetcagcaccacetetcacgtcaagcetcagcaccagatgctgttetataaggatgacgtgctgttttacaacatctcctccatgaagagcacaga gagttattttattcctgaagtccggatctatgactcagggacatataaatgtactgtgattgtgaacaacaaagagaaaa gggattgtgagggtcaactgttctgtcccagaggaaaaggccccaatacacttcacaattgaaaaacttgaactaaatga aaaaatggtcaagctgaaaagagagaagaattctcgaggaccagaattttgtgatactggaattccccgttgaggaacagg accgcgttttatccttccgatgtcaagctaggatcatttctgggatccatatgcagacctcagaatctaccaagagtgaacctggtcaccgtgacggaatccttctctacacccaagttccacatcagccccaccggaatgatcatggaaggagctcagct ccacattaagtgcaccattcaagtgactcacctaggcccaggagtttccaagaaatcattattcaagaaggcgattg tggcccacaacagacatggcaacaaggctgtgtactcagtcatggccatggtggagcacagtggcaactacacagtgcaa gtggagtccagccgcatatccaaggtcagcagcatcgtggtcaacataacagaactattttccaagcccgaactggaatc ttccttcacacatctggaccaaggtgaaagactgaacctgtcctgctccatcccaggagcacctccagccaacttcacca tccagaaggaagatacgattgtgtcacagactcaagatttcaccaagatagcctcaaagtcggacagtgggacgtatatc 20 tgcactgcaggtattgacaaagtggtcaagaaaagcaacagtccagatagtcgtatgtgaaatgctctcccagcccag gatttettatgatgeccagtttgaggteataaaaggacagaceatcgaagteegttgegaategategagtagtgtgeaetttge ctatttcttaccaacttttaaaaacaagtaaagttttggagaatagtaccaagaactcaaatgatcctgcggtattcaaa gacaaccccactgaagacgtcgaataccagtgtgttgcagataattgccattcccacgccaaaatgttaagtgaggttct 25 gagggtgaaggtgatagccccggtggatgaggtccagatttctatcctgtcaagtaaggtggtggagtctggagaggaca ttgtgctgcaatgtgctgtgaatgaaggatctggtcccatcacctataagttttacagagaaaaagagggcaaacccttc tatcaaatgacctcaaatgccacccaggcattttggaccaagcagaaggctaacaaggaacaggaggagagtattactg cacagcettcaacagagccaaccacgcetccagtgtccccagaagcaaatactgacagtcagagtcattettgccccat ggaagaaaggacttattgcagtggttatcatcggagtgatcattgctctcttgatcattgcggccaaatgttattttctg aggaaagccaaggccaagcagatgccagtggaaatgtccaggccagcagtaccacttctgaactccaacaacgagaaaat gtcagatcccaatatggaagctaacagtcattacggtcacaatgacgatgtcggaaaccatgcaatgaaaccaataaatg ataataaagagoototgaactcagacgtgcagtacacggaagttcaagtgtcotcagctgagtctcacaaagatctagga aagaaggacacagagacagtgtacagtgaagtccggaaagctgtccctgatgccgtggaaagcagatactctagaacgga ${\tt aggctcccttgatggaacttagacagcaaggccagatgcacatccctggaaggacatccatgttccgagaagaacagatg}$ atccctgtatttcaagacctctgtccgaattccgggagaagtgaccagagcaatttctgcttttcacagggcgggtttct ggacatataaatgtactgtgattgtgaacaacaaagagaaaaccactgcagagtaccagctgttggtggaaggagtgccc agtcccagggtgacactggacaagaaagaggccatccaaggtgggatcgtgagggtcaactgttctgtcccagaggaaaa ggccccaatacacttcacaattgaaaaacttgaactaaatgaaaaaatggtcaagctgaaaagagagaagaattctcgag accagaattttgtgatactggaattccccgttgaggaacaggaccgcgttttatccttccgatgtcaagctaggatcatt totgggatccatatgcagacctcagaatctaccaagagtgaactggtcaccgtgacggaatccttctctacacccaagtt ccacatcagccccaccggaatgatcatggaaggagctcagctccacattaagtgcaccattcaagtgactcacctggccc aggagtttccagaaatcataattcagaaggacaaggcgattgtggcccacaacagacatggcaacaaggctgtgtactca gtcatggccatggtggagcacagtggcaactacacgtgcaaagtggagtccagccgcatatccaaggtcagcagcatcgt ttcaccaagatagcctcaaagtcggacagtgggacgtatatctgcactgcaggtattgacaaagtggtcaagaaaagcaa cacagtccagatagtcgtatgtgaaatgctctcccagcccaggatttcttatgatgcccagtttgaggtcataaaaggac agaccatcgaagtccgttgcgaatcgatcagtggaactttgcctatttcttaccaacttttaaaaacaagtaaagttttg gagaatagtaccaagaactcaaatgatcctgcggtattcaaagacaaccccactgaagacgtcgaataccagtgtgttgc 55 caagcagaaggctagcaaggaacaggaggagagtattactgcacagccttcaacagagccaaccacgcctccagtgtcc ccagaagcaaaatactgacagtcagagtcattettgccccatggaagaaaggacttattgcagtggttatcatcggagtg 60 atcattgctctcttgatcattgcggccaaatgttattttctgaggaaagccaaggccaagcagatgccagtggaaatgtc caggccagcagtaccacttctgaactccaacaacgagaaaatgtcagatcccaatatggaagctaacagtcattacggtc acaatgacgatgtcagaaaccatgcaatgaaaccaataaatgataataaagagcctctgaactcagacgtgcagtacacg gaagttcaagtgtcctcagctgagtctcacaaagatctaggaaagaaggacacagagacagtgtacagtgaagtccggaa agctgtccctgatgccgtggaaagcagatactctagaacggaaggctcccttgatggaacttagacagcaaggccagatg gggtagaaagagatacagagggcccgggttcaagcgattctcctgcctcagcctcttgggtagctgggattataggcgt gtgccaccgtgcctggctaatttttgtatttttattggagacagggtttcaccatgttggccaggctggtctgaaactcc tgacctcaggcaatcctcctacctcagcctctcaaagtgctgggattaccggcatgagccacgactcccggccccaaagg 70 tcaatcttaaagctacaaggtatcttttaaaaggagtaggaataacgtattttgaggcttaaaggagtaggaatagtgta tttttagatttgaagccatcttctaaagggtacgatatttggttaacatgtcactccttatcgccatggaagaagttaat tctattctttttttttttgagatggagtctcactctgttgcccaggctggagtacaatggtggatctcagctca atgcctgtctaatttttttttttttttagtagaggtggagtttcaccatgttggtcaggctggtctcaaaccccta 75 cgccaagggtgctctttgccccctacttcctctgctattctcgcctcagttccgctgcattccaagctcagcctgcccca gcagcaggtctctttgacaaacctgcaattttggggaaaagtcagcccaagaaaggcagggggcccagacttatgctgt gcgttcggtggcccctcaggaaggccggtcatttcctgaggagatatcaggccagcccaggcccattgttcccggtttc

cagccatggctgccattacctgaccagcgccacagccggtctctctgcaggcgccgggagaagtgaccagagcaatttctgcttctcacagggcgggtttctcaacggtgacttgtgggcagtgccttctgctgagcgagtcatggccgaaggcagaac taactgtgcctgcagtcttcactctcaggatgcagccgaggtgggcccaaggggccacgatgtggcttggagtcctgctg accettetgetetgtgagtgtttactetgtttccacatcactttaactccatgagcatcgaaggaattccggagagaagtg accagagcaatttctgcttttcacagggcggtttctcaacggtgacttgtgggcagtgccttctgctgagcgagtcatg gcccgaaggcagaactaactgtgcctgcagtcttcactctcaggatgcagccgaggtgggcccaaggggccacgatgtgg cttggagtcctgctgacccttctgctctgttcaagccttgagggtcaagaaactcttttcacaatcaacagtgttgacat gaagagcctgccggactggacggtgcaaaatgggaagaacctgaccctgcagtgcttcgcggatgtcagcaccacctctc acgtcaagcctcagcaccagatgctgttctataaggatgacgtgctgttttacaacatctcctccatgaagagcacagag 10 agttattttattcctgaagtccggatctatgactcagggacatataaatgtactgtgattgtgaacaacaaagagaaaac cactgcagagtaccagctgttggtggaaggagtgcccagtcccagggtgacactggacaagaagaggccatccaaggtg ggatcgtgagggtcaactgttctgtcccagaggaaaaggccccaatacacttcacaattgaaaaacttgaactaaatgaa aaaatggtcaagctgaaaagagagaagaattctcgagaccagaattttgtgatactggaattccccgttgaggaacagga ccgcgttttatccttccgatgtcaagctaggatcatttctgggatccatatgcagacctcagaatctaccaagagtgaac 15 tggtcaccgtgacggaatccttctctacacccaagttccacatcagcccaccggaatgatcatggaaggagctcagctc cacattaagtgcaccattcaagtgactcacctggcccaggagtttccagaaatcataattcagaaggacaaggcgattgt ggcccacaacagacatggcaacaaggctgtgtactcagtcatggccatggtggagcacagtggcaactacacgtgcaaag tggagtccagccgcatatccaaggtcagcatcgtggtcaacataacagaactattttccaagcccgaactggaatct tecticacacatetggaccaaggigaaagactgaacetgteetgeteeateeeaggageaceteeageeaacticaceat 20 ${\tt ccagaaggaagatacgattgtgtcacagactcaagatttcaccaagatagcctcaaagtcggacagtgtgtatatct}$ gcactgcaggtattgacaaagtggtcaagaaagcaacacagtccagatagtcgtatgtgaaatgctctcccagcccagg atttcttatgatgcccagtttgaggtcataaaaggacagaccatcgaagtccgttgcgaatcgatcagtggaactttgcc tatttcttaccaacttttaaaaacaagtaaagttttggagaatagtaccaagaactcaaatgatcctgcggtattcaaag acaaccccactgaagacgtcgaataccagtgtgttgcagataattgccattcccatgccaaaatgttaagtgaggttctgagggtgaaggtgatagccccggtggatgaggtccagatttctatcctgtcaagtgaggtggtggagtcggaggtcgagaggacat tgtgctgcaatgtgctgtgaatgaaggatctggtcccatcacctataagttttacagagaaaaagagggcaaacccttct atcaaatgacctcaaatgccacccaggcattttggaccaagcaggaaggctagcaaggaacaggaggaggagtattactgc acageetteaacagagecaaceaegeetecagtgteeccagaageaaaataetgacagteagagteattettgeeccatggaagaaaggacttattgcagtggttateateggagtgateattgeetettgateattgeggeeaaatgttatttetga 30 35 ctgccggttcttaaatccatcctgctaagttaatgttgggtagaaagagatacagaggggtcttttggttttgctattgc ttaagetageetaegeeaagggtgetetttgeeeeetaetteetetgetattetegeeteagtteegetgeatteeaage tcagcctgccccagcagcaggtctctttgacaaacctgcaattttggggaaaagtcagcccaagaaaggcagggggcca gacttatgctgtgtggcaaaagccctctttgatggggcaagggtaggactggaaaagcagagagatctttctggatgtcc 40 tgggagagcagccctttgggtggtgggtggaggctggaggcagggaatcccctcacagtgagaaagggcccccaaacc caggcgagacagagggagggtcaagaacgccaaggcaaatgtcacttgtgccttgttttttccctaaagaaactaaacaa agggccgccgttcggttggcccctcaggaaggccggtcatttcctgaggagatatcaggccagcccaggccccattgttcccggtttccagccatggctgccattacctgaccagcgccacagccggtctctctgcagggcgccgggagaagtgaccagagc aatttetgetttteacagggegggttteteaaeggtgaettgtgggeagtgeettetgetgagegagteatggeeegaag gcagaactaactgtgcctgcagtcttcactctcaggatgcagccgaggtgggcccaaggggccacgatgtggcttggagtcctgctgacccttctgctctgtgagtgtttactctgtttcacactcttaactccatgagcatcgaagcttctggaat caacatgtttcttatgtttcttgcaggttcaagccttgagggtcaagaaaactgtaagtctgatgtttccactgtaacag atgtttctacctggcttcctcctttctctgtgatgcctaaaacgcacattaaattgctggggtttgatacttctaac auttacadetggetetetetetetetetetetadaggetetadaggetettadattgggggtttggattetetade auttaaggaanaagaatccaattgagaactaaagtttatcccatggtgggcattttaaatggcgttagatctaagccaagt tctggtcagtgtgttttagaagtagcacacgtttccttggctggtctgaaagtagtgggttatcttgatgaattgtttg tcagttacagatcaaactccatgttcttttctctgttctcacgactactcttgactagtctaaaaatatattaggttgtt gaaaagtaattgtggtttttgccattactttttaaaagatggcaaaaaacacaattataagtagcacacattttcttttt 50 tttttccttttttttttgagacagagtctctgttacccaggctggagtgcagtggtgcaatccggctctctgcaaactccgcctccagggttcaagggttcaagggttctctgtctcagcctcctgggtcgctggaattagaggttggcaggctggtccaaactc 55 ctgacctcaggtgatccgctggcctccacctcccaaagtgctgggattacaggtgtgagccaccacgcccggcctcacat ttttgttgttttaccataatggcttatttgaatattgtaaggtatccccaactgtttttatttgcaaatgagatataatt gattigtiagacatatgaagacagatcctagtttaaattgtigctactttttttactcctaaaigataaaaatcacacac tegagetegetgteecacageccaceetteateacaatagteetgaaaetttttgggtteagtaaggaaatetgtgggee 60 ggggctgtgtcccccaggttgtgaacagtcactctgtgtaaatagtgagacctacaggcagtaattcagtttggctgtgc ttggctggtttatttagaaagatgataatgtttgagctctccaagggcagacactgccagcctcactgttctctgaaccc ccagtatgggacagtgcttggcacagaaaaacccccttaaatgtttgctatgaatggtgctaaggaagaaggcagagaa gtcaaccagaggccaggcactggcaatatatacacggccccataccttggctcactgcaacctctgcctcccaggttcaa gcagtteteetgeeteagteteecaagtagetgggattacaggegeecaccaccaceceggetaattttgtatttttag tagagatgaggtttcaccatgttggccaggctggtcttgaactcctgacctcaagtgatccacccgcctcggcctcccaa agigotgggattacaggcataaaccaccgigoccggctggtccagagctcatccagcaggcttcttaaatcaggagcttg 70 cgcaaattgtagtactcgttttaaaattgaagattaaattttaaattacccaacaaaggcctaactttgttaaaaggaat cgtaaattgtagtactegttttaaattgaagattaaattttaaattatattaaatgaaaaggttaatggaagtt tctaccgaccagcctatggttactggatataagccaattctgttctgtggctgttttgaggcttgtaacagattg acccacagcctagttcctagcagagattggatagatggattgtgagctgttttgaggctgttttgaggcttgaccagattg ccgttggcagaggggaatctgtagtctttgcttcttggtagcaggtgaggctgaaaacgcaagtagcaggctaaaaactg gtttcaagtcctcaccatctggtgaaacctcagagcccatcagatagaaaatgccagctgggactgtgctaattcggtaa ggcctgggtggagaaaggagggcctgggcacgaccatctggtttcggaatggaggtagcagtcatttattaagtacttaat 75 gtatatcgggcactgtacaggagacgttctggctgttctcctgtacatttcctgcaaagacctaatgagatatgattact ccatcctacaggtaaggaaactgaggtcagagagtctagctgcccagggtcacacagtaaatgatgagccaggacttgaa ttgtcttttgagacagtctcactctgttgcccaggctggagtgcagtggtgagatctcacctcactgcaacccccgcctc 80 ggteteceaaagtgetgggattataggegtgageeaceatacetagetetacatetttateactetgtteetttgeettg

gtgggaaaagttgcagcttagtaccaactgcctcctgcttgagccactgtgcacagttactatcagcctggccctgtagg cacgtagaacccctggactcaatactgcataggatgggataagaccacatctgatgtggtgaaggtcaccgggatgatgt thatteetgaagteeggatetatgaeteaggacatataaatgtaetgtgattgtgaacaacaaagagaaaaccactgca gagtaecagetgttggtggaaggtgagteettggaactgagcacaggcaggaaggagtggagcatagcacagtggcgtga ataacagetgtgaatgaatagtgacactggacttaactetccacccatcaccetctcattcatctgcetggcattttect 10 ccttccttccttccttccttccttccttcctttctttctttgatggagtctcactctgtcacccagtctggagtgcagtg ggtgatctcggctcactgcaacctctgcctcccaggttcaagcgattctcctgcctcagcctcccaagtaattgggatta caggtgtgtgtgcaccacacctggctaattttgtatttttagtagagatggggtttcactgtgtttggtcaggctggtctcg aactotgacotcaagtgatccacotgcotcccaaaatgottottcatotogctctataaattacaatttotttottcaag 15 caggcaatggtatttgtgtgtataaaggccacagcggtgtgttaagacacctcgttctgcagtcactctgcctgggtttc aatcttqqqtcaaqtccttaacatqctctaaacttcaaaatcctcaccagtaaaaqgaaqataacaacgatacccatttc aggcaattattgagagggttaaaagtgtcatgtgggtagagtgcttagcaaaatttccagcacctagtgagttcctaata aatagaaatgtatttatttatttagagacagagtcttcctctgtcacccaggctaaagagcaatggcgcgaccttggctca ctgcaacctctgtctcctgggttcaagcgattctcctgtctcagcctcccaagaaactgggattacaggcacgcgccact 20 gtgcctggctaattttttgtatttttagtaaggatggggttttaccatgttggccagcctggtctcgaactcctaacttc aagtgatttacccaccttggcctcccagagtgtcaggattacaggtgtgagccaccatgcccggtccacaaatattctat ttcactcagtattggcatccgttcttacacatctgtctgctcttctggatagtgaaattgtaaagacagagatggtgttt gggtttattcttatatcttgaacaatgaatctggctcatagtaggcattcagtcaatgttcatggaataaattaaagtca gtcctagcctgtgggtgcattcaataaagggtaacaacaatcacagtgacactgacaaatactgggttacctttcccctc 25 taagcatcatctgttgggaatctgattgtcctcttcccaataggattataaaccattgaaaacaccaagtacatcttg 30 35 tqqtctccaactcctqqqctcaaqaqatccacccacctcaqcctccaqattttatatatttcaaaqtqcctagtactgtg ctgggcacatacctgttcatttattacctggtaggtcgcactgggtgttcagagaacaaaaaagagccctctcatgggat caactacagtcactcagcggaggggagggcttgtgtctctcaatcaggctgatactgacagactttcttcttcaatcagg aggtgggatcgtgagggtcaactgttctgtcccagaggaaaaggccccaatacacttcacaattgaaaaacttgaactaa 40 atgaaaaaatggtcaagctgaaaagagagaagaattctcgagaccagaattttgtgatactggaattccccgttgaggaa caggacegegttttateetteegatgteaagetaggateatttetgggateetatgeagaeeteagaatetaceaagag tgaactggtcaccgtgacgggtcagcatctgctcccttcctcatcgttctttgtggtttcttggtgttctagagaagaaag gttgaattttaaagttagttaggaacaatagaaaagtttgaaaaggggaagcagcaaaaagagcagaagaggctcctcttgccaggtttgcacctgagtccaaccaggttgtcttcctctttgcagaatccttcttacacccaagttccacatcagc cccaccggaatgatcatggaaggagctcagctccacattaagtgcaccattcaagtgactcacctggcccaggagtttcc agaaatcataattoagaaggacaaggogattgtgggccacaacagacatggcaacaaggctgtgtactcagtcatggcca tggtggagcacagtggcaactacacgtgcaaagtggagtccagccgcatatccaaggtcagcagcatcgtggtcaacata acaggtagggctgctgctgctgcggagggtgttggcatatggcgggctcaagaggccaccatgctgcaatccagcatggcca actgcagagcgagttaacagtctactgtgcgtgttgagggtacaggctccggcaccaaagcttaaccctgccgctcactg cttctgtgaccttgggtgagttattgaacgtgccgagcgctgtgagattggtgataatgaccttttaggactgctataat gattaatgagataactatactgtaagcatgagctgagagatttgtacagagtaagactctgaaacactggttaatgtttt cattactctgttatatttctccatcccctgtgacaagcactatgctagatcgaattccggcctgtgaatccatctggttc ttggactttttttggttggtaagctattgattattgccacaatttcagatcccgttattggtctattcagagattcaact 55 tcttcctggtttagtcttgggagagtgtgtgtgttgaggaatttatccatttctcctagatttctcagtttatttgcgta gcgtgtatttgattcttctctcttttttttctttattaggcttgctagcggtctatcaattttgttgatcctttcaaaaaa ccagctcctggattcattaatttttttgaagggttttttgtgtctctatttccttcagttctgctctgattttagttattt cttgccttctgctagcttaaggagtttcattcttgttgcccaggctggagtgcagtggagcaatctcggctcactgcaat 60 ctctgtctcctgggttcaagggattctcttgcctcagcctcccgagtatctgggattacaggcgcccaccaccatgctgg ctaattttatattttagtagagatggggtttcaccatgttgcccaggctggtctcaactcctgacctcaggtgatccac ccacctctgcctccaaagtgctgggattacaggcatgagccaccacacctggccacaagttgcaaaacttttctaatcc ttgtcattgaaataaattggattaacaagaaaggaaaacctgccattggaatcctaggcaaagaatgaaccctagctcct tactggggtgatcgttaggtacatgagaagcaaaggaaaactttttgctggaagttggaagttggttctgccaagagcac 65 agaactattttccaagcccgaactggaatcttccttcacacatctggaccaaggtgaaagactgaacctgtcctgctcca 75 aqqtgtggtgtgcacctatagtcccagctactcgggaggctgaggtaggaggattgcttgattctgggaggttgtagtga acacattttgttggctacttgttgtactttttctatgttttctgtgtctttgctcaacacaagaaaaqtatattatgtgt

ggctttggaggaggaacctcttgtgctggatgctttgtttttaccttcagtgccttttggattgttctccctctgttct agaaatgctctcccagcccaggatttcttatgatgcccagtttgaggtcataaaaggacagaccatcgaagtccgttgcg aatcgatcagtggaactttgcctatttcttaccaacttttaaaaacaagtaaagttttggagaatagtaccaagaactca aatgatcctgcggtattcaaagacaaccccactgaagacgtcgaataccagtgtgttgcagataattgccattcccacgc caaaatgttaagtgaggttctgagggtgaaggtgataggtaagttgctgtgctgtgagaagaaatcatgtgggcttgggg cattetttcacccccagggactgtggggacaataagagaagtaggggccaggtgcggtggctcatgcctgtaatcccag cactttaggaggccaaggccggtgaatcattgaggccaggagttcaagaccagcctggccaacatggtgaaaccccatct ctactaaaaatacaaaaattagctgggcatgatggcgtgcgcctataatcccagccactcgggaggctgaggcaggagaa ttgcttgaacccaggaagcacaggttgcactgagccaagttgcgccattgcactccagcctgagcaacaagagcgaaact 10 ccatctaaaaaaaaaaaaaaaagcgagagaagtagtgggtgcttatgcaaagtccatatactagatatgcaccaaagcagggcc aaggttcagtaaaggaggctggaaaatatttgggggctattgatgaggacaatataatctctttccagaacctttcaaca aactgctaaaagatgataagcatgaaagtgtcctgactgcaggaagcactgaagttgtgcatatgggcttcccttagcac tttctccttttcagatacactgttctgagaattgtagatcaggactctgctgttgtgactcctagccgggggaaccctgcc 15 ttgtgtgaattcgagattagcctggccaacatggtgaaatcctgtctctaataaaaatacaaaaattagctgggtgtgg tggtgggcacctttaatgccagctactcgggaggctgaggcacaagaatcatttgaacctgggaggcagaggctgcagtg tagactaagcacctaatggtgtgaggcatacaaaaaagaagacatattctttgtttcaatgctgtggtaagaaacacaag ctctcctaatgaaaatgatggacaaacatctgaatcatactaccaataagcatagaaaaaatgttgggggtcatgtttgg 20 ttgtcacgtgaactatatccttacagtgatggtgatagtaatttagggtatgccagacttcatctagcttaagtgggtaa acattgtgaaaaagctgggctaggtgccagggcttgagaatgggtggccagagaaggctgaagatggctgaacatctcca gcaaacacatgagccaaaaggtcccatggggcacttcaaaagactgtgcgcagccaggtgcggtggctcacgcctataat cccagcacttigggagaccgaatggggtggatcacttgagcccagaggttttgtgactagcttggccaacatggcaaaacc ccgtctctactaaaaatacaaaaattagcccagcgtggtggtggtgtcctgtagccccagctactcaggtggctgaggt 25 ggtagaatcacttgaatccaggaggcagaggttgcagtgagccaagatcgtgccactgcactccagcctgggtgacagag ctggagtttgggaatggagaatcaccggatatgagctgaaaaagtggctgagcctaagcgtgacaggtgtcaggtgccag tctcaggagtaggcaattgtcctgcatgcagtgaaaagccagaagatggaaggacaggatgcaaatgagttctcgg aacgatccacctggtggctgggtcagggagcaggcatggtgacttcagacctcatggtacgttagaggctaatgtgaagc 30 ccatgtgaagctgttggtttaaactgggtcgatatcagtggcacacatttactgaccatgtgtccagccctgtgtgaagt actgtagtaaattgctccaatggaaactcacaataaccacagaaggccagtaacagcattgtcgttattttatcatgacg ggatacaggaggtagccaagttctgcttggacctgcagggagtgaggctgggccgggctccaggtggaaatccccaaggtga aaagggagacttggagttcaggaaagtaacctggactggagccataggtttaggtgtcagtggctcagagacagaagctc 35 agcgtgtaggtgaaatcacccaggaggaaatggggatggaaaactgaggattgaattttgcaaaatgttcatacttccg gggaaaacaaagaataaccagtgaataagaaaggggtgccaggtaagaagggaagagaatcagagtcatgaggaacccca gaaccccagaaaaagctgagttccacgtaagacctgggcaacagtgaagtatggagagccaagattgggagcgtggagg 40 caaaacttgagagagagtgcagtgtcacaagattgtgactacaaaagagtgcagtcagatttcaggggtaacaagaaagt gtgaaataagggagtcaaagcataaaggaaaaaggagaaaaaatggccgatagctagagaaggcgtgggtcaagattgtc tgtggcctggcatggtggcttatgcctgtaatcccagcattttggaaggccgaggtgggcaaatcacctgaggtcaggaa ttcaagaccagcetggccaacagggcaaaaccccgtctctaaaacaacaacaacaacaaaaaatccaaaaagttagctg ggcctggtgggcgcacctgtcattccagctactcgggaggctgaggcaggagatttgcttgaacccaggaggcacacgtt ttgagcagtggctgtctcatgttcctcttcctctgcccttctttgctcagtgtgaatccttttcctgcttttcagccccg gtggatgaggtccagatttctatcctgtcaagtaaggtggtggagtctggagaggacattgtgctgcaatgtgctgtgaa tgaaggatctggtcccatcacctataagttttacagagaaaaagagggcaaacccttctatcaaatgacctcaaatgcca cccaggcattttggaccaagcagaaggctaacaaggaacaggaggagagtattactgcacagccttcaacagagccaac 50 cacgcctccagtgtccccagaagcaaaatactgacagtcagaggtgagtcaggggtctccatagcaagctgtgctgtgggcccccaaggggaagccagaacacccccttgtaagagggagtttgggggagtctagcttatgtgactgaaggctaggtagagaatcagatcagagactatgtcctccaggctcttggttgcaagtgacagaaacccactcaaattaagtaaaaaagagaaatcgattattat aaggaattgggagaatgtcacatcgttccaattacaaattgttggcagactcaccattgagtcatcttgggtcaaacatc 55 caaccacagaccacctgtagccaaggggattgggtcacgcagaacagacatgattggggaaccacttatgtgggtgtggg ggcggtttcctggagaagaagagggctgaaaacacatgccaaaaaggagtctactccacttgagccctggagttggagac cagcctgggcaacatggtgaaaccctgtctctacaaaaagtacaaaaataggctgggcgcagtggctcatacctgtaatc ccagctactcgggaggctgagacatgagaatcacttgaacccaggaggtagaggttgcagtgagcagagcttgctccact 60 cctgtagtcccagctactcgggaggctgaggtggaaggattgctcaagcccaggaagttgaggctgcagtgagctgtcat tgitccctccttgaggaccacagctgacctctatttgtagcagaaacaatcatttctgcaccagctctgagtgcagaacc ctgatattatttcttcctggcagaggaagagcctatatacaaaaaaattttttgttttgtttttttcagtcattctt gccccatggaagaaaggacttattgcagtggttatcatcggagtgatcattgctctcttgatcattgcggccaaatgtta Etttctgaggaaagccaagggtgagcatagttetttecttecatactgactggtegteettgccaggaaaccagccaggg atgcgtggtgcttttctgacccctggattcagctaggcaaaaatgaaagctattattttcctcattgggcaaaccagaaa agataaaatttgggggaaattacatctttgtgtggttagaagaagccatttctgtagatttgtccacacctagtcctgta 70 gggaagtccaaacgtagctgaaaagagtgttccttcacagcttactaggagtaaaacaaaaagaaaagaaaagtgttttc tätetättaggttägtgeaaaageeattggegttttggeeattatagtggtatggatgtgggtactgtataetgaetttg gtttttcgttttctgtttttaaagccaagcagatgccagtggaaatgtccaggtgagtgtatttgtaagaagggggcggc tgctctgtgagcacggtggacatgtctggagggagattctggtcattaggaagttttcagtggctcttggcaaacttaga gaaatctccctttcttatgaaattataatggtagtagataattttttaaaatttgacaaaatagagttggcctttaaaa aatggttttactacctttactgttgttgaaatcccaaatcaaaagtatagaaatgattgctctgttccagagagaaacag tagcgtgggataagaatttcagggggcttggtagtagcctgtgaaggactccggtattcatgtgtgctttggtctgatgt tatttaataggaaagttaaaaaaaaaaaagttttttacataatccttggagctgccaaaaaatatttgttttccaaat gagagagtaaagttttccttaccttggaaaactcttcctggttttctcatgatcttcccttgtttactttggtggtttgg ggttagaacaataacaacaacaatatatctatatattgttttctgtttttatatttcattttaaaggccagcagtacca

cttctqaactccaacaacgagaaaatgtcagatcccaatatggaagctaacagtcattacqgtaaagtcatgttctcctg ccattlataattccccccaacttgctacatacttccttacccctctcagaagcagaatatgtaagtggtgggattacagt aaggtaacatattttattctaactttgccaccttccaaactccccgtagaagaagatggagaataatcataatgccttc taaacatcttctcagatggaattattacaagcacaagacagttttacttcaaatttggcacaaaagggaaagcaatttcaa tatteteteagtaaaggeataaataaagtgtteeaactaagaaaatatetatteataaggeteateagtagetteagggt cageteagetgaatgagtaggeagteetaggagttettaateccaggttagtaagaaaattgeteaageattteageagg atgctacttacttcccagaggggggtattattacatcacaaaaagtcctgtcccagaccaaatttggggacactcttcct 10 cttataqccacqactcaaatatattgatcttaqaatctaaaaqacttaggtctqqqcqcqqtggctcacgcctgtaatct caacactttgggaggccgaggtaggtggatcacttgaggtcagcagttcaaaaaccacctggccaacatggtgtaaccct ggagaatacccttgaacctgggaggtggaggttgcatgacctgatggacctcaacatgcacaccagtccgagcaacaaga gcgaaactccatctcaaaaaagaaagaaagaaagaaactatattcaggccaggcatggtagttcatgcctataaccccag 15 ctctttgggaggctgaggtgggaggatcattgagcccaggagttggagaccagcctgtgcaacaaagcgagacatggaga atgtggaacgagggacccaggacccagagacagtgctggttgtcactacactgaataaatcaggcttgactttgttaggg Caatgacgatgtcagaaaccatgcaatgaaaccaataaatgataataaaggtaattatctaattacatgtttttattaga 20 gggaagtacctaaatcaaagtagggaagaactgggttatactcaaaaaaacaactatgtggttttctttaggcagagc ctctgaactcagacgtgcagtacacggaagttcaagtgtcctcagctgagtctcacaaaggtaagtgccactcgagtgag tccccaggcattcgctttggctttgggtttaaaccccagtggtggcgggggtgctgtgttcagtgagaagagtctgtgcac 25 gtctctgagctgtaaaatttcaataatttaaaagaaaaaagaaaaggccaggcactgtggctcacacctgtaatcctag cactttgggaggccaaggcgggtggatcacctgagatcatatattttatatattaatatataaatatataaaatacatatata tgagacggagtctactctctgcccaggctggggtgcagttgcgagatcttgcaaacctctgcctccgggttaaagcagca 30 aggtacgaaaaggggctttgtgggtacaaggctcagtggtgagtacatttgacctggtcttgaccaagccagttccctgc 35 tetcaagaetteeteeteetatggaggaggggttgggaaceacatecagetetgaccetagtggeaggegaccaagtggt cacttggggtggaggaggggcaggaaggaactcagtaaatcctggtttgctgcatgtttgctctgagactaattgctggg aaaaccccatgacgttggaagccatctccttctctgttatcacagagaaaaacagaagccaaaataaagccccatccgga aacateeetgacagcagagacaaagageetgeeageetggtttaeteattagcaagcagetgeteeetggagtgggtggg 40 agaagetecaccaagaagcagaaccccccaggcccaaacaccaagccctctccctttattectcacctgccccagc ccccactgtgggcctgggtgggagggtgagctggccgtgaccaccccaccatgcgcctggtatatggtgtttgatagcat ttgttgcagtgtctgcgttgtttgtgcacctgtctgcctcacagcctggagctcctgaaagctggggaccaggcccgatc caagcagagggtgtcttggggatgtgggaggatccccaatagggttggggatccctacagcttcccttgagggccccaca tctggtgccacagaaagagagtgaggggtgtgtggggcatctctgctgtcccagcagtgtgggtgccctggtagctcagcca ctctactgagttccaaatcctgtttgggtgccctgggggaagtcagtgtaagggcctagtcaaaggagggaaatccactt gaccatggcacaggaacccccttacccaatctgggccttccctttcccccatctgtaaaaggagaacagtgcccacacg acatcagcctcttttcctacagtgagccttcctggccctttgtgcagtagacaggagctgggaagtgcccaggttccatc ctgtttcctcagggttggtgggtatgtatgtgtgtgcacaccctgtgtgcatgagtgtgtgcacacccagattgcatgtt tgtacatacagtgtgtatacaatgtgtgtagacacatcctatacactgtatgagggtatacatagcatgtatacacattg 50 tgtgcatgagtgtgcgtgtgtatatgctgtgtgtgtatttttgtatacacatcctgtgcccataccccagtgtaaggtaa gagggtctagcccagaggatctcagccctgtctgcatattagggcccctgaggagatcctaaaaaaaccagcaccagggac 55 tgtaagagtteteagteecagetalteetagggteactgaeaaceecaggetetaaceeagaeeteaggalettgttet ggateceggggtetgggetetcaggtgattgggaggecatagcccaaccetgegttgagggacetggcagaatgtetgga caagggttacggtggcaggggaagaggagtgggggcagcagctgcaggctgcaggcccttgctggggggctctccatcc gtgggcccttcaggtccaggggttcctctggtgcatgtggcctgctccacaatggcctgctgacctcctattcccagac 60 ccaggctggagtgcagtggcgcaatcttggctcactgcaacctctgcatcctgggttcaagcgattctcgtcccttagct ctcgagtaactgggatcacagggacgcaccaccatgcccggttaattttttggaatttttagtagagacggggtttcggc atgttggccagaatggtctcaacctcctgacctcaagtgatcttgccccctcaacctcccaaagtgctgggattacaggt atgagecacettgeecagecaggatettetaacateagaaatgacaaggtetetgggtgettetggacetggttetggtg gggtgcagtggtggggtacagccttgcctgcagagcctcagaccttttcctatgactgcagtggactgacctcgttccca gaggcagetactaacttatgcctggtcctttttccagatctaggaaagaaggacacagagacagtgtacagtgaagtccg gaaagctgtccctggtgagtgagggtctccagtgccccagcctgggggatgccccctataatcactgatgggggcttggg agtgggcagagaaaagaagaagcaaagaagggcaaaaaaaggggtggcacctcttacaccagcgctgtggggcttcctctct cccaccattaaaaagtcacctcgggtcacatttactattcatgtagtcaacgagcgcttcttgaatgcttactgacc 70 ctgtcactcaggctggagtgcagtggtgcaatctcgactcactgcaacctccacttcccggatttaagtgattctcctgc agtttegetettgatgeceaggetggggtgeaatggagtgetgggattaceaagtgtgacceceggececagcateta 75 cacttogcttoccgtgacgacccactgcttactcatgaaagggcttoccccagagctgagcacagagcttaagcagaccc ggaactggggggagctcaacaagtccttttttcggtggggggtataataactgtattcaattcaggtgaaatgaaatac acaatgacaacttttaaattctgaaggtaagtcagcaatccgaaagacgtaaacattgtgggggaaatagtgactgtqtq agtatctcgctttgtacagcagacctctatttaagtgggttcttggaaagggaatcattaaaatggtccaggacatttct aaataaatataaaaggatgactcctccgagtacagtcgccaaaccagcagcagcaatctcgggcccagcccagaccaca aaactagtctctggaatctgaacttagccagcttcagatgtttctgatgctgccaatatttgagaagcactgtttgtgtt ttgttttgtttttttgtttgaaacagagtctcactctgtcacccagactggagtacagcagtgccatctcagctgactgc

aactccgtgcaacacccccagccctaaggcttaagcgatcctcccaagtagctagaaccacagacacaccaccatg cccagctaagtttttgtatttttggtagagatgaggttttaccatgttgcccagactggtgttgaattcctgagctcaag caatccaccccttcggcctccaaagtgctgggattacaagcgtgagccactgtgccaggcaaaaagcactgttttaga agaaccatccaattctctgaggaccctgctttttatctgaaatagcgatcacttcttaattcacttttaaaagttggtat atctacaagaagaatagaaactcaaccettgtgggaacttgaccetgaataatttttgaaaaaccaattetetggggaatt ggagacttccttctacatctgaaccagctcaaaacatccttatgccaaaggggcatattttgtggtggcatattcctgat ttcctttctttttttttttttgagacagggtcttcgctctgtcacccaggctggagtgcagtggcgcgatcgcagctca 10 ctgcaacctccagctcccgggttcaagtgattcttctgcctcagcctcctgagtagctgggaccacagctactgccacca ccccgggtaatttttttgtatttttagtagagacggtgtttcaccatattggtcaggctgatctcgaactccagacct caggtgatccacctgccttggcctcccaaagtgctgggataacaggtgtgagacaccacgcccggccagatcatatgatc ctatctacgggaaacatgaagagtaatattctactgtggcctgggtgaccctgggcaagtcatagagcctctcaagacct tggtcaccttctctgtgagatgaggtatgggctggaggcaggtcagtggtcctcgggctttattaaaacatcaatagttt ggcgcaccccactccctgtgaatttcccattcactaggtctggagcggtgccgaaaacgtgcatttctaacaggtgtcca cacgcagetgctegecgacacgctggggcccgggctttgagaaccactcttgatgcagcatgttcctttctgattgtgcc acgctaaggctctgcttcttgttggaaggagtagggtctttctcaccctccagaaatcctggagggatctttcagcattg gtgggcaggtaaaacccagaaacactgtgcttattagagggaaggttgtattgagtgaccccaataaaacagggggccc agggccgcgcgcgcagtggctcacgcctgtaatcccagcaatttgggaggctaaggcgggatcatgaggtcaggagatcggagaccatcctggctaacacggtggaaaccccatcttactaaaaatacaaaaattagctggacgtggtagataagcaa 20 gcagggatcctgtgtgtctcagtttccctattgactctctgtggcctagagatgtatggtagaattccacactatgcttt 25 cttaaaattgtggtaaaacacatatcacataaaatttaccattttaactctaagtatccagctcagtggcactaagacta 30 aacatgcgacaatgcacaggacagtcccctccccaccacaaacaccacccagcccaaaatttcaacagggccaccatgg agaaaccttggccagaggaattcacctcctgcaactcctccaacaggagagctggttttcctctccagtaccagcttgtg getgecetetgtettgggagggtgaettaagggeacateceacetgattaetgtgggetetggatgggtgetgagtettg gtctggggaacagaaattacccaggcatggtggtgtgcgcctgtagtcccaccaacttgggaggctgaggcaggagaatt 35 ccttgaatctgggaggcggagggtgcagtgagccgagatagtgccagctgaggcaggagaattccctggaggtagaggtt cctgaccctgtgatgttgttggggcagttgaactgggttatttgcgttgctcactgccatgtcatcctttgttttgtaga 40 tgccgtggaaagcagatactctgtaagtacacatttcatatacattatatttaaaagtactccactgaacagtgaaatat ttccagactcacccacgcctgcattcacacgaattcttccccgctccctagcctgttcagaccagaagccctgggcttct gattgggactctggggtgcttagcgccaaacaagcaaagcacacatttcgtttaacgccaaagtctaggctctggaagtg aggcagatctagggtgtatgcttggaggagtggagcagctgacagctcattgcaatttagccgatactaattaccccta 45 cacaccaggccatcagctgcaggaggacacccaagcttcttgacctcagttcaccttctgatgagggaatcagacatgtg caaggaatcatttggaatggcccatgaagaatgaatggagtgatgatgccagcattgagggagaaagatcagcaggagca caagggtgagggatgaccagtttcaagcagtgtgggatgggaaagaagagtgtgacagtgacaagtgacgggagaaagat aagtcagggettaaatccaaaggatttacatcccttgttaagaagcttcattctgtaggaaatggagttaggaatctgca 50 tttggcagatgggagggtttatgaaagacacagaggcccacgttcaacttttgcaaagacgtgtcttccaatcccaacct ttttgtgagctacccagcaatgcaggagttaactgggcagctaatatctgaagaaatgaggcatttgccgcataaacttc ttttaggtctgggaagaactttcagcaaagatttcaggtagctcttccagtggcccctggcttcctttgttttgcccatg tcaggactcttgtaaaacagagctcgagctccagctttccagctgtcttttgggtgagcctgtcttcctcaagctcaagc ttccttatctataaagtggagatggtgatgacaatgatgataagagcaacctattaggattitaaggatgaaatgagcaa ctgcaaccaccatataaaagctgcaagctgcaaaccaccatataaaagctggttgatctcaagctcttttcatcacttgg gcaatagtaggtgtggatgggggacttaacttgatttggccatgaaatgaccctgccacatalggagaatgtagcagtlg cttacccaaggcataggattcaaccaaggccaggctttgacttaggaatcagagacccacattaacatttgacttcccgc ttettagecatgteaccatgggeaaatttettggeeteteaagacetetgetteetaatetgtaaaetgggaateataaa 60 actetcattgcccctccagcaacccctagcacccactgtctactttctgtctctattgtggttgtctatttgagggacat cacataagtggagtcatatatttgtcctttcatgtctcccttatttcatttagcataacgttttcaagggtttcctgtgt tgtgaatatatcagaatttcattctcttttaaggtagaatcatatcattttaaaacatttcagttggaccatctaagttcagttctcattttcacattaaaaaacagccctcaaccgggtgcatctcacgttagctagagacagaactggagctag 65 cagagcaggcatggagagaaggagaaatacatacgggcaggagccaggagaggggagggtgtagtgagcagagaccgcgcc actgcactccagcctgagtgacagagtgagaatccatctaaaaaattgcttactaaagaagtggtctcctgaggtcttaa gacgttcctggcaatgtcttgagtgggtgggagagagctccagtcattgagctgtggaatttcagaggtgagaaccaca 70 tgacctttattctttgcagatctgtgaaatgttgtcttctgaggggccacgtgtatctgtagtgctgaggactccttggg ctgtcattttgcatttctctccaccaggggaatcttcaatcttgagaggtgtgtgatcataacttgccttgtttcttgtcgc tacagagaacggaaggctcccttgatggaacttagacagcaaggccagatgcacatccctggaaggacatccatgttccg 75 ttcctcaggctaagctgccggttcttaaatccatcctgctaagttaatgttgggtagaaagagatacagaggggctgttg ttcaaaggcttgtagttttgggtagtccttgttctttggaaatacacagtgctgaccagacagcctccccctgtcccctc tatgacctcgccctccacaatgggaaaaccagactacttgggagcaccgcctgtgaaataccaacctgaagacacggtt cattcaggcaacgcacaaaacagaaaatgaaggtggaacaagcacatatgttcttcaactgtttttgtctacactctttc

tcttttcctctacatgctgaaggctgaaagacaggaaagatggtgccatcagcaaatattattcttaattgaaaacttga cttcaggaggctgaggtgggcggatcgaattccgggagaagtgaccagagcaatttctgcttttcacagggcgggtttct tctcaggatgcagccgaggtgggcccaaggggccacgatgtggcttggagtcctgctgacccttctgctctgttcaagcc ttgagggtcaagaaactctttcacaatcaacagtgttgacatgaagagcctgccggactggacggtgcaaaatgggaag aacctgaccctgcagtgcttcgcggatgtcagcaccacctctcacgtcaagcctcagcaccagatgctgttctataagga tgacgtgctgttttacaacatctcctccatgaagagcacagaggttattttattcctgaagtccggatctatgactcag ggacatataaatgtactgtgattgtgaacaacaaagagaaaaaccactgcagagtaccagctgttggtggaaggagtgccc agtcccagggtgacactggacaagaaagaggccatccaaggtgggatcgtgagggtcaactgttctgtcccagaggaaaa ggccccaatacacttcacaattgaaaaacttgaactaaatgaaaaaatggtcaagctgaaaagagagaagaattctcgag accagaattttgtgatactggaattccccgttgaggaacaggaccgcgttttatccttccgatgtcaagctaggatcatt tetgggatecatatgcagacetcagaatetaccaagagtgaactggtcaccgtgacggaatecttetetacacccaagtt ccacatcagccccaccggaatgatcatggaaggagctcagctccacattaagtgcaccattcaagtgactcacctggccc aggagtttccagaaatcataattcagaaggacaaggcgattgtggcccacaacagacatggcaacaaggctgtgtactca 20 agaccatcgaagtccgttgcgaatcgatcagtggaactttgcctatttcttaccaacttttaaaaacaagtaaagttttg gagaatagtaccaagaactcaaatgatcctgcggtattcaaagacaaccccactgaagacgtcgaataccagtgtgttgc agataattgccattcccatgccaaaatgttaagtgaggttctgagggtgaaggtgatagcccggtggatgaaggtgcaga 25 atcacctataagttttacagagaaaaagagggcaaacccttctatcaaatgacctcaaatgccacccaggcattttggac caagcagaaggctagcaaggaacaggaggagagtattactgcacagccttcaacagagccaaccacgcctccagtgtcc ccagaagcaaaatactgacagtcagagtcattcttgccccatggaagaaaggacttattgcagtggttatcatcggagtg atcattgctctcttgatcattgcggccaaatgttattttctgaggaaagccaaggccaagcagatgccagtggaaatgtc caggccagcagtaccacttctgaactccaacacgagaaaatgtcagatcccaatatggaagctaacagtcattacggtc 30 acaatgacgatgtcagaaaccatgcaatgaaaccaataaatgataataaagagcctctgaactcagacgtgcagtacacg gaagttcaagtgtcctcagctgagtctcacaaagatctaggaaagaaggacacagagacagtgtacagtgaagtccggaa agctgtccctgatgccgtggaaagcagatactctagaacggaaggctcccttgatggaacttagacagcaaggccagatg tggtcatctcagtttcttttctcaccttgactgcaagatgaaactccttgtgctagctgtgctgctcacagtggccgccgccgcgacagcggcatcagccctcgggccgtgtggcagttccgcaaaatgatcaagtgcgtgatcccggggagtgaccccttc atteatactegtgetetggeteggeaateacetgtageageaaaaaeaaagagtgtgaggeetteatttgeaactgegae cqcaacqctqccatctqcttttcaaaaqctccatataacaaqqcacacaaqaacctqqacaccaaqaaqtattqtcaqaq ttgaatatcacctctcaaaagcatcacctctatctgcctcatctcacactgtactctccaataaagcaccttgttgaaag aa (SEQ ID NO:12158) ctgcagaggctcaatcactgttcattgcagccttgacctccctggctcacgagatcctcccatctcagcctcctgagttg gctgcacttccttcttgtctcccttatcccagcgtccgactgaactgacggctttgctttccccaaccagcccgtgaagc tgggctgagtacaaagtggtgggtatgagggtcaagattgtaagatctgaaaactccagaaaccatccctttggttaaca tataagactatacctgagactggtcatctcagttcttttctcaccttgactgcaagatgaaactccttgtgctagctgtg ctgctcacaggtaggcaagtctccccggctccacccgcctttctctccccaagtgagctaagatctcactcctctggaatg ggggccacacacagcaaacagggatggccagcccgcagtctcaattcgaggttcccagtgggcttaagggctcctctat tggggttccctcaaggctggcactttttcaacctgcaagtctgaactcagattgcctgagctaagaaagcttgcctttat tttetttttcagacagggtcttgctctataacccaggctggagttcagtggcatgatcatagctcaccacagcttcca 60 cttatacactttattattattattattattattattgagacagagtcttgctttgtgcccaaggctggagtacagtggtgcga tctcggctcactgcaagctccacctgctgggttcacgccattctcccgcctcagcctccccagtagctggactaaagcg cctgccaccacgccccgctaattttttgtattttaataaagacggggtttcatcgtgttagccaggatggtctcgatc tcatgaccttgtgatccgcctgcctcggcctcccaaatgctggattacaggcatgagccaccgtgcccggccttatcaca tttattatttattgtttttctctcccactaggttgtaagctccatgaggttagagattattattattattattattattatt 65 ttattattattattattattattatatetgttcactgctgtatctctagctcctaggacagagcctggcacatagtaagt gctcaataaatattcactggataaacagtgcagatagtttaaaactatctgacctagggaggctgaggcaggagaatggc gtgaacccgggaagcagagtttgcagtgagctgaaatcgtgtcactgcactccaacctgggcaacagagcaagactccat ctcaaaaaaaaaaaaaaactatcaggcctagctgggtggcacatgcctgtaatcctagctgaggcggtagggtcccaga 70 tcattaaaaaaaaaaaaacctctacccactttcactttaccaggttcctgggtccaacggtcttcagaggaggcagctg ctctggctatgtcttcttgcagtggccgccgccgacagcggcatcagccctcgggccgtgtggcagttccgcaaaatgat caagtigegtgatcccgggggagtgaccccttcttggaatacaactacggctgctactgtggcttggggggctcaggca ccccdfygatchacacgaggcatacagragagacttcactcyctagaaaacaggatcacacttttccagcagtgcaaacagtgggc cgccaaggatchcaacgaggcatacaaaggggacttgcatatctgctaaggataacattgaccgacgtgcaaaacagtgggc gatgctgccctccagtggcagaatgtagcaacattaaacatcaagcacctatccacgtgtcattttctagcagtggttg 75 aaaaaaaaaatgctttcaataaatatatgataaaaggacttatattttttcaagccataggatcatttctcctgaagca

cccttccttgaccta (SEQ ID NO:12159) gcccactccaccgccagctggaaccctggggactacgacgtccctcaaaccttgcttctaggagataaaaagaacatcc agtcatggataaaaatgagctggttcagaaggccaaactggccgagcaggctgagcgatatgatgacatggcagcctgca ggagccogłaggtcatcttggagggtcgtctcaagtattgaacaaaagacggaaggtgclgagaaaaaaacagcagatggc togagaatacagagagaaaattgagacggagotaagagatatotgcaatgatgtactgtototottttggaaaagttottga 10 tccccaatgcttcacaagcagagagcaaagtcttctatttgaaaatgaaaaggagattactaccgttacttggctgaggtt gccgctggtgatgacaagaaagggattgtcgatcagtcacaacaagcataccaagaagcttttgaaatcagcaaaaagga aatgcaaccaacatcctatcagactgggtctggcccttaacttctctgtgttctattatgagattctgaactccccag agaaagcetgetetettgeaaagacagettttgatgaageeattgetgaaettgatacattaagtgaagagteatacaaa gacagcacgctaataatgcaattactgagagacaacttgacattgtggaatatcggatacccaaggagacgaagctgaagc gagagaaggaggggaaaattaatggcattccaacttttgtctgcctcattctaaaatttacacagtagaccatttgtca 15 tccatgctgtcccacaaatagttttttgtttacgatttatgacaggtttatgttacttctatttgaatttctatatttcc catgtggtttttatgtttaatattaggggagtagagccagttaacatttagggagttatctgttttcatcttgaggtggc Caatatggggatgtggaatttttatacaagttataagtgtttggcatagtacttttggtacattgtggcttcaaaaagggc cagtgtaaaactgcttccatgtctaagcaaagaaaactgcctacatactggtttgtcctggcggggaataaaagggatca 20 ttggttccagtcacaggtgtagtaattgtgggtactttaaggtttggagcacttacaaggctgtggtagaatcataccc atggataccacatattaaaccatgtatatctgtggaatactcaatgtgtacacctttgactacagctgcagaagtgttcc tttagacaaagttgtgacccattttactctggataagggcagaaacggttcacattccattatttgtaaagttacctgct gttagettteattatttttgetaeacteattttatttgtatttaaatgttttaggeaacetaagaacaaatgtaaaagta aagatgcaggaaaaatgaattgcttggtattcattacttcatgtatatcaagcacagcagtaaaacaaaaacccatgtat 25 aatagttaacagggaaataacttgagatgatggctagctttgtttaatgtcttatgaaattttcatgaacaatccaagca taattgttaagaacacgtgtattaaattcatgtaagtggaataaaagttttatgaatggacttttcaactactttctcta cagcttttcatgtaaattagtcttggttctgaaacttctctaaaggaaattgtacattctttgaaatttattccttattc 30 ttccatgtcccatgatcccctctctccccccccctgaaaaaaatgagttcctatttttctgggagagggggggatt gattagaaaaaatgtagtgtgttecatttaaaatttttggcatatggcattttetaaettaggaagecaeaatgttettg gcccatcatgacattgggtagcattaactgtaagttttgtgcttccaaatcactttttggtttttaagaatttcttgata tctgtcttgtcaccaaccattcttacttggtggccatgtacttggaaaaaggccgcatgatctttctggctccactcagt 35 gtctaaggcaccctgcttcctttgcttgcatcccacagactatttccctcatcctatttactgcagcaaatctctcctta

45

50

55

60

70

80

tgggggccacacacagcaaacagggatggccagcccgcagtctcaattcgaggttcccagtgggcttaagggctcctct attggggttccctcaaggctggcactttttcaacctgcaagtctgaactcagattgcctgagctaagaaagcttgccttt

ccaacatggtgaaaccctgtctctactaaaaaatacaaaaattagccggacatggtggcgagcgctgtaaccccagcta cttgggagactgagttggaggtttcatgagccaaggtcgtgtcactgctgtccagcctgggtaacagagcaactctgtct caaaaaaaaaaaaatgctttcaataaatatatgataaaaggacttatattttttcaagccataggatcatttctcctgaag catcttggcgaagtcatccccacctgttcctgagagtgggcaggtgaggctgacctattgctctgcacttactcctatc teagetgteecteecactttecaggtgetgeeagacacatgacaactgetacgaccaggeeaagaagetggacagetgta aatttetgetggacaacccgtacacccaccctattcatactcgtgctetggctcggcaatcacctgtagcagtaggttt atcocttocttgacctagcccactcccaccgccagctggaaccctggggactacgacgtccctcaaaccttgcttctagg agataaaaagaacatccagtcatggataaaaatgagctggttcagaaggccaaaactggccgagcaggctgagcgatatga tgacatggcagcctgcatgaagtctgtaactgagcaaggagctgaattatccaatgaggagaggaatcttctctcagttg cttataaaaatgttgtaggagcccgtaggtcatcttggagggtcgtctcaagtattgaacaaaagacggaaggtgctgag aaaaaacagcagatggctcgagaatacagagagaaaattgagacggagctaagagatatctgcaatgatgtactgtctct tttggaaaagttettgateecaatgetteacaageagagageaaagtettetatttgaaaatgaaaggagattaetaec gttacttggctgaggttgccgctggtgatgacaagaaagggattgtcgatcagtcacaacaagcataccaagaagctttt gaaatcagcaaaaaaggaaatgcaaccaacacatcctatcagactgggtctggcccttaacttctctgtgttctattatga gattetgaactecccagagaaageetgetetettgcaaagacagettttgatgaageeattgetgaacttgatacattaa gtgaagagtcatacaaagacagcagctaataatgcaattactgagagacaacttgacattgtggacatcggatacccaa ggagacgaagctgaagcaggagagggggaaaattaaccggcttccaacttttgtctgcctcattctaaaatttaca cagtagaccatttgtcatccatgctgtcccacaaatagttttttgtttacgatttatgacaggtttatgttacttctatt tgaatttctatatttcccatgtggtttttatgtttaatattaggggagtagagccagttaacatttagggagttatctgt tttcatcttgaggtggccaatatggggatgtggaatttttatcatacaagttataagtgttttggcatagtacttttggtacat 20 tgtggcttcaaaagggccagtgtaaaactgcttccatgtctaagcaaagaaaactgcctacatactggtttgtcctggcg gggaataaaagggatcattggttccagtcacaggtgtagtaattgtgggtactttaaggtttggagcacttacaaggctg tggtagaatcataccccatggataccacatattaaaccatgtatatctgtggaatactcaatgtgtacacctttgactac 25 agctgcagaagtgttcctttagacaaagttgtgacccattttactctggataagggcagaaacggttcacattccattat gaacaaatgtaaaagtaaagatgcaggaaaaatgaattgcttggtattcattacttcatgtatatcaagcacagcagtaa catgcatgtgctgtaaaaatagttaacagggaaataacttgagatgatggctagctttgtttaatgtcttatgaaatttt 30 catgaacaatccaagcataattgttaagaacacgtgtattaaattcatgtaagtggaataaaagttttatgaatggactt ttcaactactttctctacagettttcatgtaaattagtettggttctgaaacttctctaaaggaaattgtacattetttg aaatttatteettatteeetettggeagetaatgggetettäeeaagtttaaacacaaatttateataacaaaaataet actaatataactactgtttccatgtcccatgatcccctctcttcctcccccaccctgaaaaaaatgagttcctatttttc tgggagagggggggattgattagaaaaaaatgtagtgttccatttaaaatttttggcatatggcattttctaacttagg aagccacaatgttcttggcccatcatgacattgggtagcattaactgtaagttttgtgcttccaaatcactttttggttt ttaagaatttettgataetettatageetgeetteaattttgateetttattettettettetattegteaggtgeacaagatta ccttcctgttttagccttctgtcttgtcaccaaccattcttacttggtggccatgtacttggaaaaaggccgcatgatct 40 gatgatgggaggcagtgagtcttgatgataagggtgagaaactgaaatccc (SEQ ID NO:12161) gctgtgcaacctcggcgccatgcgcaacctctatgcgatgcaccggcgctgcagcggcacccgcgctcctgcaccaggg actgtgccgagccgcgcggacgggagggaagcgtccctcagcccttggaggagctggatcacctcctgctgctgcc ctgatgaccgtgctcttcactatgtgttctctgcccgtaatttatcgcgcttactatggagcatttaaggatgtcaagga gaanaacaggacctctgaagaagcagaagacctccgagccttgcgatttctatctgtgatttcaattgtggacccttgga tttttatcattttcagatctccagtatttcggatattttttcacaagatttttcattagacctcttaggtacaggagccgg tgcagcaattccactaacat<mark>ggaatc</mark>cagtctgtgacagtgttttttcactctgtggtaagctgaggaatatgtcacattt tcagtcaaagaacca (SEQ ID NO:12162) agetetteactggeetgeteegegetetteaatgeeagegeeaggegeteaecetgeagagegteeegeeteteaaagag gggtgtgacccgcgagtttagataggaggttcctgccgtggggaacaccccgccgccctcggagctttttctgtggcgca 55 60 ggccatggcactggagtgctggctctccctagggcaccctttcttctaccgacggcacatcaccctgcgcctgggcgcac tggtggccccggtggtgagcgccttctccctggctttctgcgcgctacctttcatgggcttcgggaagttcgtgcagtac tgccccggcacctggtgctttatccagatggtccacgaggagggctcgctgtcggtgctggggtactctgtgctctactc cagecteatggegetgetggteetegeeacegtgetgtgeaaceteggegeeatgegeaacetetatgegatgeacegge ggctgcagcggcacccgcgctcctgcaccagggactgtgccgagccgcgcggagggaagggaagcgtccctcagccc 65 ctggaggagctggatcacctcctgctgctggcgctgatgaccgtgctcttcactatgtgttctctctgcccgtaattgtgag tccccgggccccgagg (SEQ ID NO:12163) ctocageteteagaceetetteeteeeaggtaaaggeegggagagagggggegeatetetttteeaggeaceeeaceatgg gcaatgcetccaatgactcccagtetgaggactgcgagacgcgacagtggettecccccaggcgaaagcccagccatcage 70 tccgtcatgttetcggccggggtgctggggaacetcatagcactggcgctgctggcgcgctggcgggggggacgtggg gtgcagcgccgccaggagctccctctcttgttccacgtgctggtgaccgagctggtgttcaccgacctgctcggga cctgcctcatcagcccagtggtactggcttcgtacgcgcggaaccagaccctggtggcactggcgccgagagccgcgcg cttcagtgtcattctcaacctcatccgcatgcaccgccgaagccggaagccgctgcggaccttccctgggcagtggcc atgggacctccaagctcttaggtttttatcaattaattcaataattgacccttgggtctttgccatccttaggcctcctg ttctgagactaatgcgttcagtcctctgttgtcggatttcattaagaacacaagatgcaacacaaacttcctgttctaca caqtcagatgccagtaaacaggctgacctttgaggtcagtagtttaaaaagttcttagttatatagcatctggaagatcat

tttgaaattgttccctggagaaatgaaaacagtgtgtaaacaaaatgaagctgccctaataaaaaggagtatacaaacat ttaagctgtggtcaaggctacagatgtgctgacaaggcacttcatgtaaagtgtcagaaggagctacaaaacctaccctc aatgagcatggtacttggcctttggaggaacaatcggctgcattgaagatccagctgcctattgatttaagctttcctgt tgaatgacaaagtatgtggttttgtaatttgtttgaaaccccaaacagtgactgtactttctattttaatcttgctacta ccgttatacacatatagtgtacagccagaccagattaaacttcatatgtaatctctaggaagtcaatatgtggaagcaac caagcctgctgtcttgtgatcacttagcgaaccctttatttgaacaatgaagttgaaaatcataggcaccttttactgtg atgtttgtgtatgtgggagtactctcatcactacagtattactcttacaagagtggactcagtgggttaacatcagtttt aagactttaggaatggttctctcaacaagaaataatagaaatgtctcaaggcagttaattctcattaatactcttattat cctatttctgggggaggatgtacgtggccatgtatgaagccaaatattaggcttaaaaactgaaaaatctggttcattct tcagatatactggaacccttttaaagttgatattggggccatgagtaaaatagattttataagatgactgtgttgtacca aaattcatctgtctatattttatttaggggaacatggtttgactcatcttatatgggaaaccatgtagcagtgagtcata tottaatatatetetaaatgtttggcatgtaaatgtaaactcagcatcaaaatatttcagtgaatttgcactgtttaatc atagttactgtgtaaactcatctgaaatgttacaaaaataaactataaaaca (SEQ ID NO:12164) ctgccccctcccgctgcggctctctggacgccatcccctcctcacctcgaagccaacatgaaggagacccggggctacgg aggggatgccccttctgcacccgcctcaaccactcctacacaggcatgtgggcgcccgagcgttccgccgaggcgcggg gcaacctcacgcgccctccagggtctggcgaggattgcggatcggtgtccgtggccttcccgatcaccatgctgctcact ggtttcgtgggcaacgcactggccatgctgctgttgtcgcgcagctaccggcgcgggagagcaagcgcaagaagtcctt 20 cctgctgtgcatcggctggctggcgctcaccgacctggtcgggcagcttctcaccaccccggtcgtcatcgtcgtgtacc tgtccaagcagcgttgggagcacatcgacccgtcggggcggtcttgcacctttttcgggctgaccatgactgttttcgg ctctcctcgttgttcatcgccagcgccatggccgtcgacggcgctctgccatcagggcgccaccatgatgtattcgg catgaagacgcgtgccaccgcgctgtgctggctggcgtggccatcagggcgctctgccctgctgccggtatgccg 25 gcgtgggccagtacaccgtccagtggcccgggacgtggtgcttcatcagcaccgggcgaggggcaaccgggactagctct togcataactggggcaacctttcttctcgcctctgcctttgccttcctggggctcttqqcqctqacaqtcaccttttcctq caacctggccaccattaaggccctggtgtcccgctgccgggccaaggccacggcatctcagtccagtgccagtggggc 30 gaaagttttgccaggtagcaaatgctgtctccagctgctctaatgatggacagaaagggcagcctatctcattatctaat gaaataatacagacagaagcatgaaagaaaacacttaacttgcatgtgcacagcttctggtaacaaatatcgctaaacct tactgtgaatttaggcatctctggcatgccactgtttatgcattgaagtggaatttttggtataaagctaaatggtctta gttgagtctgccattcgtagctgaatatgtgattaattatgtgatgaaaacttttttataaatgatcttggtctattgg gg (SEQ ID NO:12165) cccgggccagtgagccctggcgccgcgcgggccgcgggtcccagcagcggagtagggcggcggctgcgccccgcaccatgg 40 cgcctcaaccactcatcacaggcatgtgggcqccqaaggttccgaaggggcagggggaaacctcacggggcctcaagggttcgggggaatgcgggggaacgcactgggctcactgg gcgctcaccgacctggtcgggcagcttctcaccacccggtcgtcatcgtcgtgtacctgtccaagcagcgttgggagca catcgacccgtcggggcggctctgcacctttttcgggctgaccatgactgttttcgggctctcctcgttgttcatcgcca gcgccatggccgtcgagcggcgctggccatcagggcgccgcactggtatgcgagccacatgaagacgcgtgccacccgc gtggcccgggacgtggtgcttcatcagcaccgggcgagggggcaacgggactagctcttcgcataactggggcaaccttt tcttcgcctctgcctttgccttcctggggctcttggcgctgacagtcaccttttcctgcaacctggccaccattaaggcc ctggtgtcccgctgccgggccaaggccaaggcatctcagtccagtgcccagtggggccgcatcacgaccgagacggccat tcagcttatggggatcatgtgcgtgctgtcggtctgctggtctccgctcctgataatgatgttgaaaatgatcttcaatc $\verb|ccaccacaaacaactatgcatccagctccatccttaccctgccagtgttcctcaaccttgatgtggagcgaccatttgg|$ aaagataatgaaagaacggagttggacattttattgcaattcctgcttccctgaatttgcatatttcttcccacctgaga 55 aggataattatatattttaatttggattatttcttcatttttatctttattttattttaatgattgttttgtcagtaataccc atggagatcaactttattattataatccatgcctctgaatattagattggtttcttggatgggattttgaatatgcattt tgaaaaatcagtataagcttatgatggtgaaaagtcaacatattgagagtgataattcaattaataggatatgaacttaa 60 cgatataaaagcaaatgagggcaggagggg (SEQ ID NO:12166) ctgcccctcccgctgcggctctctggacgccatccctcctcacctcgaagccaacatgaaggagacccgqqqctacqq aggggatgccccttctgcacccgcctcaaccactcctacacaggcatgtgggcgcccgagcgttccgccgaggcgcggg 65 gcaacctcacgcgccctccagggtctggcgaggattgcggtgtccgtggccttcccgatcaccatgctqctcact ggtttcgtgggcaacgcactggccatgctcgctgctcgcgcagctaccggcgccgggagagcaagcgcaagaagtcctt cctgctgtgcatcggctggctggcgctcaccgacctggtcgggcagcttctcaccaccccggtcgtcatcgtcgtqtacc tgtccaagcagcgttgggagcacatcgacccgtcggggcgctctgcacctttttcgggctgaccatgactgttttcggg ctctcctcgttgttcatcgccagcgccatggccgtcgagcggcgctggccatcagggggcgcactggtatgcgagcca 70 gcgtgggccagtacaccgtccagtggcccgggacgtggtgcttcatcagcaccgggcgagggggcaacgggactagctct tcgcataactggggcaaccttttcttcgcctctgcctttgccttcctggggctcttggcgctgacagtcaccttttcctg caacctggccaccattaaggccctggtgtcccgctgccgggccaaggccacggcatctcagtccagtgcccagtggggcc 75 gaaagttttgccaggtagcaaatgctgtctccagctgctctaatgatggacagaaagggcagcctatctcattatctaat gaaataatacagacagaagcatgaaagaaaacacttaacttgcatgtgcacagcttctggtaacaaatatcgctaaacct tactgtgaatttaggcatctctggcatgccactgtttatgcattgaagtggaatttttggtataaagctaaatggtctta gttgagtctgccattcgtagctgaatatgtgattaattatgtgatgaaaactttttttataaatgatcttggtctattgg gg (SEQ ID NO:12167)

agagaggaaggcgtggctccctcccgggccagtgagccctggcgccgcggggccgcgggtcccagcagcggagtaggag geggetgegeecegeaceatggggggeageecageeceageeggtaaacgeegaceteegeegeegeegeegegetg ctgcccctcccgctgcggctctctggacgccatcccctcctcacctcgaagccaacatgaaggagacccggggctacgg aggggatgccccttctgcacccgcctcaaccactcctacacaggcatgtgggcgcccgagcgttccgccgaggcgcggg gcaacctcacgcgccctccagggtctggcgaggattgcggatcggtgtccgtggccttcccgatcaccatgctgctcact ggtttcgtgggcaacgcactggccatgctgctcgtgtcgcgcagctaccggcgccgggagagcaagcgcaagaagtcctt cctgctgttgcatcggctggctggcgctcaccgacctggtcgggcagcttctcaccaccccggtcgtcatcgtcgtgtacc tgtccaagcagcgttgggagcacatcgacccgtcggggcgctctgcacctttttcgggctgaccatgactgttttcggg ctctcctcgttgttcatcgccagcgccatggccgtcgagcggcgctggccatcagggcgcactggtatgcgagcca gcgtgggccagtacaccgtccagtggcccgggacgtggtgcttcatcagcaccgggcgaggggcaacgggactagctct tegealaactggggcaacettttettegeetetgeetttgeetteetggggetettggegetgaeagteacetttteetg caacctggccaccattaaggccctggtgtcccgctgccgggccaaggccaccgcatctcagtccagtgcccagtggggcc atgttgaaaatgatetteaateagacateagttgageaetgcaagacacaceggagaagcagaaagaatgcaaettett gaaagttttgccaggaggaattttggggaaattaaaacctgcctttctgccaggatcacatcactggaagctccatgact ctctttttgtaaaagaaaa (SEQ ID NO:12168) gtgcgcggaggggacgagcggctggaccacagccggcgcccgatcaggatctccgcgctgggatcggtggaacttgaggc ageggeggegegggggegeeatggeacaeegageggeteegtettetgeteeteagagageeeggetggeggeetgggatg tttgctgttttcatagctttgctgcccatccttggacatcgagactataaaaattcaggcgtcgaggacctggtgtttcta caacacagaagacatcaaagactgggaagatagattttatcttctacttttttcttttcttggggctcttagcccttggtg 30 tttcattgttgtgcaatgcaatcacaggaattacacttttaagagttaaatttaaaagtcagcagcacagacaaggcaga tetcateattiggaaatggtaateeageteetggegataatgigigteteetgtattigtiggageeeatttetggtiae aatggccaacattggaataaatggaaatcattctctggaaacctgtgaaacaacatttttgctctccgaatggcaacat ggaatcaaatcttagatccttgggtatatattcttctacgaaaggctgtccttaagaatctctataaagcttgccagtcaa tgctgtggagtgcatgtcatcagcttacatatttgggagcttagttccattaaaaattccttaaaggttgctgctatttc tgagtcaccagttgcagagaaatcagcaagcacctagcttaataggacagtaaatctgtgtggggctagaacaaaaatta agacatgtttggcaatatttcagttagttaaatacctgtagcctaactggaaaattcaggcttcatcatgtagtttgaag atactattgtcagattcaggtttttgaaatttgtcaaataaacaggataactgtacatttttcaacttgttttttgccaatgg atgccaatgataggtgcaaagaatattggcaaaaggtgctttaccttgagccattatttgtgtcagagaacaaaagaaac agaatcaatatataaattcaaagactatctgcagctagtgtgtttcttctttacacacatatacacacagacatcagaaa attetgttgagageaggtteattaaatttgtaagatggeatattetaaageetgtgetaceagtaetaagaggggaagae tggcaatttggcaagcacttggggattattataacaattaactaggagatcaagagataataatctctccccaaattttc caataataattgag (SEQ ID NO:12169) ggcacagacgcacgggacaggagagcotgggcaagactggagagcccagacctgggatggcggattcgtgcaggaacctc acctacgtgcggggctcggtggggccggccaccagcaccctgatgttcgtggccggtgtggtgggcaacgggctggccct gggcatcctgagcgcacggcgaccggcgcccctcggccttcgcggtgctggtcaccggactggcggccaccgacctgc gccgtgtggtcccctgcctctcacgatcgttcacccaggctgtcgccctgatcctgctggccctcatgacagtggtcatcg 60 ccttgccttccgcttctacgccttcaaccccatcctggacccctgggtcttcatccttttccgcaaggctgtcttccagc gactcaagctctgggtctgctgcctgtgcctcgggcctgcccacggagactcgcagacacccctttcccagctcgcctcc gcaggtggagcccttgcctcccacacagcagtccagcggcagcgcgtgggaacgtcgtccaaagcagaagccagcgtcg cctgctccctctgctgacatttcaagctgaccctgtgatctctgccctgtcttcgggcgacaggagccagaaaatcaggg acatggctgatggctgcggatgctggaaccttggcccccaaactctggggccgatcagctgctgtttctctgcggcaggg cagtcgctgctgctctgggaagagagtgagggacagaggaaacgtttatcctggag (SEQ ID NO:12170) gctgtgcaacctcggcgccatgcgcaacctctatgcgatgcaccggcggctgcagcggcacccgcgctcctgcaccaggg 70 actgtgccgagccgcgcgcggacgggaagcgtcccctcagcccctggaggagctggatcacctcctgctgctgcg ctgatgaccgtgctcttcactatgtgttctctgcccgtaatttatcgcgcttactatggagcatttaaggatgtcaagga gaaaaacaggacctctgaagaagcagaagacctccgagccttgcgatttctatctgtgatttcaattgtggacccttgga

 $\tt ctgegggtgettgegeeegeattggaeaactegttgtgeeaageettegeettetteatgteettetttgggeteteete$ gacactgcaactcctggccatggcactggagtgctggctctccctagggcaccctttcttctaccgacggcacatcaccc tgcgcctgggcgcactggtggccccggtggtgagcgcttctccctggctttctgcgcgctacctttcatgggcttcggg aagttcgggtactggcgcggcacctggtgctttatccagatggtcaccgaggagggctcgctgtcggtgctggcggg ctctgtgctotactccagcctcatggcgctgctggtcctcgccaccgtgctgtgtgcaccggcgccatgcgcaacctct gcgtcccctcagcccctggaggagctggatcacctcctgctgctggcgctgatgaccgtgctcttcactatgtgttctct gcccgtaattgtgagtccccgggccccgaggggccgccgtcggcgcgctgggtgcgggaaggggctctggatttcggt ccctcccctttttcctctgagtctcggaacgctctcagccctcttcctcccaggtaaaggccgggagaggagg gegeatetettttecaggcaceceaceatggcaatgceteeaatgacteccagtetgaggactgcgagacgcgacagtg gcttcccccaggcgaaagcccagccatcagctccgtcatgttctcggccggggtgctggggaacctcatagcactggcgc accgagetggtgttcaccgacctgctcgggacctgctcatcagcccagtggtactggctcgtacgcgcggaaccagac cctggtggcactggcgccgagagccgcgtgcacctacttcgctttcgccatgaccttcttcagcctggccacgatgc tcatgctcttcgccatggccctggagcgctacctctcgatcgggcacccctacttctaccagcgccgcgtctcggcctcc gggggcctggccgtgctgcctgtcatctatgcagtctccctgctcttctgctcgctgccgctgctggactatgggcagta cgtecagtactgccccgggacctggtgcttcatccggcacgggcacgcttacctgcagctgtacgccaccctgctgc tgetteteattgteteggtgetegeetgeaactteagtgteatteteaaceteateegeatgeacegeegaageeggaga agccgctgcggaccttccctgggcagtggccggggcggcccgggggcccgcaggagaggggaaagggtgtccatggcga ggagacggaccacctcattctcctggctatcatgaccatcaccttcgccgtctgctccttgcctttcacgatttttgcat ccttgggtetttgccatccttaggcctcctgttetgagactaatgcgttcagtcctctgttgtcggatttcattaagaac acaagatgcaacacaaacttcctgttctacacagtcagatgccagtaaacaggctgacctttgaggtcagtagtttaaaa gttcttagttatatagcatctggaagatcattttgaaattgttccctggagaaatgaaaacagtgtgtaaacaaatgaa gctgccctaataaaaaggagtatacaaacatttaagctgtggtcaaggctacagatgtgctgacaaggcacttcatgtaa aatctctaggaagtcaatatgtggaagcaaccaagcctgctgtcttgtgatcacttagcgaaccctttatttgaacaatg 30 ttataatgtccatatgctaatagtgatcaagaagactttaggaatggttctctcaacaagaaataatagaaatgtctcaa ggcagttaattctcattaatactcttattatcctatttctgggggaggatgtacgtggccatgtatgaagccaaatatta ggcttaaaaactgaaaaatctggttcattcttcagatatactggaacccttttaaagttgatattggggccatgagtaaa tatatgggaaaccatgtagcagtgagtcatatcttaatatatttctaaatgtttggcatgtaaatgtaaactcagcatca aaatatttcagtgaatttgcactgtttaatcatagttactgtgtaaactcatctgaaatgttacaaaaataaactataaa cgtctgcccctcccgctgcggctctctggacgccatcccctcacctcgaagccaacatgaaggagacccggggcta ggggcaacctcacgcgccctccagggtctggcgaggattgcggatcggtgtccgtggccttcccgatcaccatgctgctc acctgtccaagcagcgttgggagcacatcgacccgtcggggggctctgcacctttttcgggctgaccatgactgtttc tgggcgtgggccagtacaccgtccagtggccgggacgtggtgcttcatcagcaccgggcgaggggcaacgggactagc tettegeataactggggcaacettttettegeetetgeetttgeetteggggetettggegetgacagteacetttte ctgcaacctggccaccattaaggccctggtgtcccgctgccgggccaaggccacggcatctcagtccagtgcccagtggg ttcgaaagttttgccaggtagcaaatgctgtctccagctgctctaatgatggacagaaagggcagcctatctcattatct 55 aatgaaataatacagacagaagcatgaaagaaacacttaacttgcatgtgcacagcttctggtaacaaatatcgctaaa ccttactgtgaatttaggcatctctggcatgccactgtttatgcattgaagtggaatttttggtataaagctaaatggtc tggggcccgggccagtgagccctggcgccgcgcgggtcccagcagcggagtagggcggcggctgcgcccgcac ggctctctggacgccatccctcctcacctcgaagccaacatgaaggagacccggggctacggaggggatgcccccttct gcaccegcetcaaccactcetacaaggcatgggggcgccgatggttccgccgagggggcaacctcacgggccctcactggtttcgtgggcaacctcccagggtctgggatggtcgtggggcaacgc gtccagtggccogggacgtggtgctcatcagcaccgggcgaggggcaacgggactagctcttcgcataactggggcacccttttcttcttcgcatcacctggccaccatta 70 aggooctggtgtcccgctgccgggccaaggccacggcatctcagtccagtgcccagtggggccgcatcacgaccgagacg gccattcagcttatggggatcatgtgcgtgctgtcggtctgctggtctccgctcctgataatgatgttgaaaatgatctt aggtaccacacaaacaactatgcatccagctccacctccttaccctgccagtgttcctcaaccttgatgtggagcgacca tttggaaagataatgaaagaacggagttggacattttattgcaattcctgcttccctgaatttgcatatttcttcccacc tacccatggagatcaactttattattataatccatgcctctgaatattagattggtttcttggatgggattttgaatatg

cgccgcggccgcggtcccagcagcggagtagggcggctgcgccccaccatggggggcagcccagcccagccgca gtaaacgccgacctccgccgcccgcccgcgcgtctgccccctcccgctgcggctctctggacgccatccctcctcac ctcgaagccaacatgaaggagacccggggctacggagggatgccccttctgcacccgcctcaaccactcctacacagg catgtgggggceegagggttccgccgaggegcgggggcaacctcacgcgccctccagggtctggcgaggattgcggatcgg tgtccgtggccttcccgatcaccatgctgctcactggtttcgtgggcaacgcactggccatgctgctcgtgtcgcgcagc getteteaceaceceggtegteategtegtgtacetgtecaageagegttgggageacategacecgteggggeggetet gcacctttttcgggctgaccatgactgttttcgggctctcctcgttgttcatcgccagcgccatggccgtcgagcgggcg ctggccatcagggcgccgcactggtatgcgagccacatgaagacgcgtgccacccgggctgtgctgctcggcgtgtggct ggccgtgctcgccttcgccctgctgccggtgctggggccagtacaccgtccagtggcccgggacgtggttca tcagcaccgggcgagggggcaacgggactagctcttcgcataactggggcaaccttttcttcgcctctgcctttgccttcctggggctcttggcgtgacagtcaccttttcctgcaacctggccaccattaaggccctggtgtcccgctggcgggccaa ggccacggcatctcagtccagtgcccagtggggccgcatcacgaccgagacggccattcagcttatggggatcatgtgcg ttgggtttacctgctgttaagaaagatccttcttcgaaagttttgccaggtagcaaatgctgtctccagctgctctaatg aagtggaatttttggtataaagctaaatggtcttagaagcatagaaaatccctatgtgccaaaagtagtgaaacacaaac 20 cggtaaacgccgacctccgccgccgccgccgcgcgcgcgtctgccccctcccgctgcggctctctctggacgccatcccctcctc acctcgaagccaacatgaaggagacccggggctacggaggggatgccccttctgcacccgcctcaaccactcctacaca 25 ggcatgtgggcgcccgagcgttccgccgaggggcgcgggggcaacctcacgcgccctccagggtctggcgaggattgcggatc ggtgtccgtggccttcccgatcaccatgctgctcactggtttcgtgggcaacgcactggccatgctgctcgtgtcgcgca cagetteteaceaceceggtegteategtegtgtacetgtecaageagegttgggageaeategacecgteggggegget ctgcacctttttcgggctgaccatgactgttttcgggctctcctcgttgttcatcgccagcgccatggccgtcgagcggg 30 cgctggccatcagggcgccgcactggtatgcgagccacatgaagacgcgtgccacccgcgctgtgctgctcggcgtgtgg ctggccgtgctcgccttcgccctgctgcggtgctgggccagtacaccgtccagtggcccgggacgtggtgctt catcagcaccgggcgagggggcaacgggactagctettcgcataactggggcaaccttttcttcgcctctgcctttgcct tectggggetettggegetgacagteacettttcctgcaacetggccaccattaaggecetggtgteeegetgeegggee aaggccacggcatctcagtcccagtgcccagtggggccgcatcacgaccgagacggccattcagcttatggggatcatgtg cgtgctgtcggtctgctggtctccgctcctgataatgatgttgaaaatgatcttcaatcagacatcagttgagcactgca gaccacagccggcgcccgatcaggatctccgcgctgggatcggtggaacttgaggcagcggcgcggggggcgccatggc 40 acaccgagcggctccgtcttctgctcctcagagagcccggctgggctctgggatgacaagatgtctggactgcaatcct gcacagttttgagagggagatgacttgagttggcttttatctccacaacaatgtccatgaacaattccaaacagcta catgacagtgggaatcttgtcaaacagccttgccatcgccattctcatgaaggcatatcagagatttagacagaagtcca aggcategtttttggccagcagcagcaggcctggtaatcactgatttctttggccatctcatcaatggagccatagcagta 45 tttgtatatgcttctgataaagaatggatccgctttgaccaatcaaatgtcctttgcagtattttttggtatctgcatggt gttttctggtctgtgcccacttcttctaggcagtgtgatggccattgagcggtgtattggagtcacaaaaccaatatttc cccatccttggacatcgagactataaaattcaggcgtcgaggacctggtgtttctacaacacagaagacatcaaagactg ggaagatagattttatettetaettttttetttetggggetettageetttggtgttteattgttgtgcaatgeaatea caggaattacacttttaagagttaaatttaaaagtcagcagcacagacaaggcagatctcatcatttggaaatggtaatc cagctcctggcgataatgtgtgtctcctgtatttgttggagcccatttctggttacaatggccaacattggaataaatggaaatcattctctggtaaccattggaatcacatttttgctctccgaatggcaacatggaatcaaatcttagatccttggg tatatattottotacgaaaggotgtoottaagaatototataagottgooagtoaatgotgtggagtgoatgtcatcago ttacatatttgggagcttagttccattaaaaattccttaaaggttgctgctatttctgagtcaccagttgcagagaaatc agcaagcacctagcttaataggacagtaaatctgtgtggggctagaacaaaaattaagacatgtttggcaatatttcagt tagttaaatacctgtagcctaactggaaaattcaggcttcatcatgtágtttgaagatactattgtcagattcaggtttt 55 gaaatttgtcaaataaacaggataactgtacattttcaacttgtttttgccaatgggaggtagacacaataaaataatgc cctctacttggcctatttgccagagaacatcttaatgcagcctgcatagtgaaatggttattttgagatcaccgctctgt 60 agctaacccttataaactaggctcagtaaaataaagcactcttattttttgatctggcctattttgcccctcattgtgta gcctcaattaacacatgcatggtcatgacacccagaattcatgatggtttgttataacaacctctgcatattccaggtct ggcagacaggttgcctgaccctgcaalcctatctagaatgggcccattcttgtcacatttgacaaataggactgcctaca tttattattatgaaggtcgattgttgttggaagtgttttttcatgtcatagattagcaattttcaaataattatttttc tctgaaaattttgtgtgtgattgcacaataaatatttttagagaaacaaaggctctttctcagcacattgatgggcaac 65 tagaattacagcagtttcaaactctaccatggataatgcaaaccaaaccgaagctacatgccaatgataggtgcaaagaat attggcaaaaggtgctttaccttgagccattatttgtgtcagagaacaaaagaaacagaatcaatatataaattcaaaga ctatctgcagctagtgtgtttcttctttacacacatatacacacagacatcagaaaattctgttgagagcaggttcatta aatttgtaagatggcatattotaaagcotgtgctacoagtaotaagaggggaagactggcaatttgccaagcacttgggg attattataacaattaactaggagatcaagagataataatctctccccaaattttccaataataattgagggcacagacg cacgggacaggagacctgggcaagactggagagcccagacctgggatggcggattcgtgcaggaacctcacctacgtgc ggggctcggtggggccggccaccagcaccctgatgttcgtggccggtgtgggcaacgggctggccctggcatcctg agcgcacggcgaccggcgcccctcggccttcgcggtgctggtcaccggactggcggccaccgacctgctgggcaccag cttcctgagcccggccgtgttcgtggcctatgcgcgcaacagctccctgctgggcctggcccgaggcggccccgccctgt 75 cgcttctacgccttcaaccccatcctggacccctgggtcttcatccttttccgcaaggctgtcttccagcgactcaagct ctgggtctgctgcctgtgcctcgggcctgccacggagactcgcagacacccctttcccagctcgcctccgggaggaggagg

acccaagggccccctctgctcctgtgggaaaggagggagctgcgtgcctttgtcggcttggggcgaggggcaggtggag cccttgcctcccacacagcagtccagcggcagcgccgtgggaacgtcgtccaaagcagaagccagcgtcgcctgctccct gcggcagcaaatcgcctgcatcgggggtccactccacaatgggctcgaccagcttcagaactgctttacactattggcag aaagtettttecaactgagaaggcaattggagaaactagaggggcaatetaccaaaatgacatatgaaggtgatcccatt CCaatgcaaagaactcacatgctagaaagagtcaccttcttgatctacaaccttttcaagaactcatttgtggttgagcg acagccatgtatgccaacccaccctcagaggccgttggtacttaaaaccctaattcagttcactgtaaaactaaggctac taataaaattgccagaactaaactatcaggtaaaggttaaggcatcaattgacaagaatgtttcaactctaagcaaccga agatttgtactttgtgggaactaatgtcaaagccatgtctattgaagaatcttccaatgggagtctctcagtagaatttcg acatttgcaaccaaaggaaatgaagtccagtgctggaggtaaaggaaatgagggctgtcacatggtgactgaagaacttc attocataacgtttgaaacacagatotgoototatggootgacoatagatttggagaccagotoattgcotgtggtgatg ggttttctttaataatcctccacctgccacattgagtcaactactggaggtgatgagctggcagttttcatcgtacgttg gtcgtggtcttaactcagatcaactccatatgctggcagagaagcttacagtccaatctagctacagtgatggtcacctc acctgggccaagttctgcaaggaacatttacctggtaaatcatttaccttttggacatggcttgaagcaatattggatct aattaagaaacacattcttcccctttggattgatgggtatgtcatgggctttgttagcaaagagaaggaacggctgttgc dattaagaadcacattetteeeetttygattyatgygtatgteatgggettegttageaaagagaagyaagyaagygtytegtaaaggataaaattaagataacatteteactgggtggaccattetgaaagtggggaagatacatteteactgggtggaccattetgaaagtggggaagatacaattetgagatgaaaccetacaataaaggccggttgtetgctgccattetgetgacatteccaagaccattetgagagactacaaaggtattetatggetgaaaacattectgaaaaccetetgaagataccaataatcccaaggttattetteecatagttetttetteeatgttetttettteecatgtettttattetggetgaaaacctgaagtgatteaacagagccaattetccaatgaagttattetcaatgtgttattgtgttatgggtgtttgagagaaaacctgaagtcccacaacaattgtaaacgaagtgttttattetg 30 Ctgaatgacaggataaactctgacgcaccaagaaaggaagcaaatgaaaaagtttaaagactgttctttgcccaataacc acattttatttetteagetttgtaaataccaggttetaggaaatgtttgacatetgaagetetetteacaetecegtgge actcctcaattgggagtgttgtgactgaaatgcttgaaaccaaagcttcagataaacttgcaagataagacaactttaag aaaccagtgttaataacaatattaacag (SEQ ID NO:12172) getttetectagggactgtgagggggettetgactttggacttgagcactgcetgggacctgtgctgagagagcgctag catgtctcagtggaatcaagtccaacagttagaaatcaagtttttggagcaggtggatcaattctatgatgacaactttc ccatggaaattcggcatctgttggcccaatggattgaaaatcaagactgggaggcagcttctaacaatgaaaccatggca acgattettetteaaaaettgttaatacaaetggatgaacagttaggtegtgttteeaaagagaaaaaeetaetettgat acacaatctaaaaagaattaggaaggtccttcagggaaaatttcatggaaatccaatgcatgtagctgtggttatttcaa actgtttaagggaagagagagaatattggctgcagccaacatgcctgtccaggggcctctagagaaatccttacaaagt taccaaatacttagaagatctgcaagacgaatttgactacaggtataaaacaattcagacaatggatcagagtgacaaga atagtgccatggtgaatcaggaagttttgacactgcaggaaatgcttaacagcctcgatttcaagagaaaggaggctctc 50 agatttgtactttgtggaactaatgtcaaagccatgtctattgaagaatcttccaatgggagtctctcagtagaatttcg 55 acatttgcaaccaaaggaaatgaagtccagtgctggaggtaaaggaaatgagggctgtcacatggtgactgaagaacttc attocataacgtttgaaacacagatctgcctctatggcctgaccatagatttggagaccagctcattgcctgtggtgatg ggttttctttaataatcctccacctgccacattgagtcaactactggaggtgatgagctggcagttttcatcgtacgttg gtcgtggtcttaactcagatcaactccatatgctggcagagaagcttacagtccaatctagctacagtgatggtcacctc acctgggccaagttctgcaaggaacatttacctggtaaatcatttaccttttggacatggcttgaagcaatattggatct aattaagaaacacattetteeeetttggattgatggtatgteatgggetttgttagcaaagagaaggaaeggetgttge taaaggataaaatgcctggcacctttttattaagattcagtgaaagccatctcggaggaataactttcacctgggtggac cattctgaaagtggggaagtgagattccactctgtagaaccctacaataaaggccggttgtctgctctgccattcgctga catcctgcgagactacaaagttattatggctgaaaacattcctgaaaaccctctgaagtacctatatcctgacattccca aagacaaagccttcggtaaacactacagctctcagccttgcgaagtttcaagaccaacagaaaggggtgacaaaggttat gttccttctgttttatccccatctcaacaatccgaagtgattcaacagagccacattctccatcagaccttcttcccat gtctccaagtgtgtatgcggtgttgagagaaaacctgagtcccacaacaattgaaactgcaatgaagtctccttattctg ctgaatgacaggataaactctgacgcaccaagaaaggaagcaaatgaaaaagtttaaagactgttctttgcccaataacc acattttatttettcagctttgtaaataccaggttctaggaaatgtttgacatctgaagctctcttcacactcccgtggc 70 actcctcaattgggagtgttgtgactgaaatgcttgaaaccaaagcttcagataaacttgcaagataagacaactttaagaaaccagtgttaataacaatattaacag (SEQ ID NO:12173) 75 aacacatcagcacccttgagagcatatatcagagggaccccctgaagctggtggcactttcaagacaaatacttcaagga gagaaaaaagctgttatggaacagttccgccacttgccaatgcctttccactggaagcaggaagaactcaagtttaagac aggettgcggaggetgcagcaccgagtaggggagatccaccttctccgagaagccctgcagaagggggctgaggctgag aagtgtctctgcacagcttgatagaaactcctgctaatgggactgggccaagtgaggccctggccatgctactgcaggag accactggagagctagaggcagccaaagccctagtgctgaagaggatccagatttggaaacggcagcagcagctggcagg

gaatggcgcaccgtttgaggagagcctggcccactccaggagaggtgtgaaagcctggtggacatttattcccagctac

agcaggaggtaggggggctggtgggagcttgagcccaagacccgggcatcgctgactggccggctggatgaagtcctgagaaccclcgtcaccagttgcttcctggtggagaagcagccccccaggtactgaagactcagaccaagttccaggctgg agttcgattcctgttgggcttgaggttcctgggggccccagccaagcctccgctggtcagggccgacatggtgacagaga agcaggcgcgggagctgagtgtgcctcagggtcctggggctggagcagaaagcactggagaaatcatcaacaacactgtg ccettggagaacagcattcctgggaactgctgctctgccctgttcaagaacctgcttctcaagaagatcaagcggtgtga gcggaagggcactgagtctgtcacagaggagaagtgcgctgtgctcttctctgccagcttcacacttggccccggcaaac tececatecagetecaggeeetgtetetgeeeetggtggteategteeatggeaaceaagaeaacaatgeeaaageeaet tgaaactctgaacctgaagttcatggctgaggtggggaccaaccgggggctgctcccagagcacttcctcttcctggccc agaagatetteaatgacaacageeteagtatggaggeettecageacegttetgtgteetggtegeagtteaacaaggag atcctgctgggccgtggcttcaccttttggcagtggtttgatggtgtcctggacctcaccaaacgctgtctccggagcta etggtetgaceggetgateattggetteateageaaacagtaegttaetageettetteteaatgageeegaeggaacet tteteeteegetteagegaeteagagattgggggeateaceattgeeeatgteateeggggeeaggatggeteteeacag atagagaacatccagccattctctgccaaagacctgtccattcgctcactgggggaccgaatccgggatcttgctcagct 15 caaaaatctctatcccaagaagcccaaggatgaggctttccggagccactacaagcctgaacagatgggtaaggatggca atggtgccttcttatgaccttggaatggcccctgattcctccatgagcatgcagcttggcccagatatggtgccccaggt gtacccaccactctcactccatcccccgtatcaaggcctctccccagaagaatcagtcaacgtgttgtcagccttcc aacaggacetcactaagcttetcetggaggggaaggggtegggggagggteettggggggacaageceteeteetgcag coctcccactatgggcaatetgggatetcaatgtcocacatggacetaagggccaaceccagttggtgateccagetgga gggagaacccaaagagacagctcttctactacccccacagacctgctctggacacttgctcatgccctgccaagcagcag 25 agcagg (SEQ ID NO:12174) gctttctcctagggactgtgagggggcttctgactttggacttgagcactgcctgggacctgtgctgagagagcgctag 30 catgteteagtggaatcaagtccaacagttagaaatcaagtttttggagcaggtggatcaattetatgatgacaacttte ccatggaaattcggcatctgttggcccaatggattgaaaatcaagactgggaggcagcttctaacaatgaaaccatggca acgattcttcttcaaaacttgttaatacaactggatgaacagttaggtcgtgtttccaaagagaaaaacctactcttgat acacaatctaaaaagaattaggaaggtccttcagggaaaatttcatggaaatccaatgcatgtagctgtggttatttcaa actytttaagggaagaggagaatattggctgcagccaacatgcctgtccaggggcctctagagaaatccttacaaagt tcttcagtttcagaaagacagaggaatgtggagcacaaagtggctgccattaaaaacagtgtgcagatgacagaacaaga taccaaatacttagaagatctgcaagacgaatttgactacaggtataaaacaattcagacaatggatcagagtgacaaga atagtgccatggtgaatcaggaagttttgacactgcaggaaatgcttaacagcctcgatttcaagagaaaggaggctctc agtaaaatgacccaaatcatccatgagacagacctgttaatgaacaccatgctcatagaagagctgcaagactggaagcg gcggcagcaaatcgcctgcatcgggggtccactccacaatgggctcgaccagcttcagaactgctttacactattggcag aaagtottttocaactgagaaggcaattggagaaactagaggagcaatotaccaaaatgacatagaaggtgatcccatt ccaatgcaaagaactcacatgctagaaaggtcaccttcttgatctacaaccttttcaagaactcatttgtggttgagcg agatttgtactttgtggaactaatgtcaaagccatgtctattgaagaatcttccaatgggagtctctcagtagaatttcg acatttgcaaccaaaggaaatgaagtccagtgctggaggtaaaggaaatgagggctgtcacatggtgactgaagaacttcattccataacgtttgaaacacagatctgcctctatggcctgaccatagatttggagaccagctcattgcctgtggtgatg ggttttctttaataatcctccacctgccacattgagtcaactactggagtgatgagctggcagttttcatcgtacgttg gtcgtggtcttaactcagatcaactccatatgctggcagagaagcttacagtccaatctagctacagtgatggtcacctc 50 acctgggccaagttctgcaaggaacatttacctggtaaatcatttaccttttggacatggcttgaagcaatattggatct aattaagaaacacttcttcccctttggattgatgggtatgtcatgggctttgttagcaaagagaaggaacggctgttgc taaaggataaaatgcctggcacctttttattaagattcagtgaaagccatctcggaggaataactttcacctgggtggac cattctgaaagtggggaagtgagattccactctgtagaaccctacaataaaggccggttgtctgctctgccattcgctga catcctgcgagactacaaagttattatggctgaaaacattcctgaaaaccctctgaagtacctatatcctgacattccca aagacaaagccttcggtaaacactacagctctcagccttgcgaagtttcaagaccaacagaaaggggtgacaaaggttat gttccttctgtttttatccccatctcaacaatccgaagtgattcaacagagccacattctccatcagaccttcttcccat gtctccaagtgtgtatgcggtgttgagagaaaacctgagtcccacaacaattgaaactgcaatgaagtctccttattctg ctgaatgacaggataaactctgacgcaccaagaaaggaagcaaatgaaaaagtttaaagactgttctttgcccaataacc acattttatttcttcagctttgtaaataccaggttctaggaaatgtttgacatctgaagctctcttcacactcccgtggc 60 actcctcaattgggagtgttgtgactgaaatgcttgaaaccaaagcttcagataaacttgcaagataagacaactttaag acaccagtgttaataacaatattaacaggctttctgaaaccagtgtcggagcgcttctggcttctggactttgagcactg cctgggacctgtgctgaggagcgctagcatgtctcagtggaatcaagtccaacagttagaaatcaagttttgagcactg gtggatcaattctatgatgacaactttcccatggaaattcggcatctgttggcccaatggattgaaaatcaagactggga ggcagcttctaacaatgaaaccatggcaacgattcttcttcaaaacttgttaatacaactggatgaacagttaggc tttccaaagagaaaaacctactcttgatacacaatctaaaaagaattaggaaggtccttcagggaaaatttcatggaaat ggggctctagagaaatccttacaaagttcttcagtttcagaaagacagaggaatgtggagcacaaagtggctgccatta aaaacagtgtgcagatgacagaacaagataccaaatacttagaagatctgcaagacgaatttgactacaggtataaaaca attcagacaatggatcagagtgacaagaatagtgccatggtgaatcaggaagttttgacactgcaggaaatgcttaacag 70 tcatagaagagctgcaagactggaagcggcggcagcaaatcgcctgcatcgggggtccactccacaatgggctcgaccag cttcagaactgctttacactattggcagaaagtcttttccaactgagaaggcaattggagaaactagaggagcaatctac caaaatgacatatgaaggtgatcccattccaatgcaaagaactcacatgctagaaagagtcaccttcttgatctacaacc 75 attcagttcactgtaaaactaaggctactaataaaattgccagaactaaactatcaggtaaaggttaaggcatcaattga caagaatgtttcaactctaagcaaccgaagatttgtactttgtgggaactaatgtcaaagccatgtctattgaagaatctt ccaatgggagteteteagtagaatttegacatttgcaaccaaaggaaatgaagtccagtgctggaggtaaaggaaatgag ggctgtcacatggtgactgaagaacttcattccataacgtttgaaacacagatctgcctctatggcctgaccatagattt

ggacatggcttgaagcaatattggatctaattaagaaacacattcttccccctttggattgatggtatgtcatgggcttt gttagcaaagagaaaggaacggctgttgctaaaggataaaatgcctggcacctttttattaagattcagtgaaagccatct cggaggaataactttcacctgggtggaccattctgaaagtggggaagtgagattccactctgtagaaccctacaataaag gccggttgtctgctctgccattcgctgacatcctgcgagactacaaagttattatggctgaaaacattcctgaaaaccct ctgaagtacctatatcctgacattcccaaagacaaagccttcggtaaacactacagctctcagccttgcgaagtttcaag accaacagaaaggggtgacaaaggttatgttccttctgtttttatccccatctcaacaatccgaagtgattcaacagagc cacattctccatcagaccttcttcccatgtctccaagtgtgtatgcggtgttgagagaaaacctgagtcccacaacaatt gaaactgcaatgaagtctccttattctgctgaatgacaggataaactctgacgcaccaagaaaggaagcaaatgaaaaag tttaaagactgttctttgcccaataaccacattttatttcttcagctttgtaaataccaggttctaggaaatgtttgaca tctgaagctctcttcacactcccgtggcactcctcaattgggagtgttgtgactgaaatgcttgaaaccaaagcttCaga taaacttgcaagataagacaactttaagaaaccagtgttaataacaatattaacagatcttatttttcttttttggtggtg gtggtggaagggggaggtgctagcagggccagccttgaactcgctggacagagctacagacctatggggcctggaagtg cccgctgagaaagggagaagacagcagaggggttgccgaggcaacctccaagtcccagatcatqtctctgtggggtctgg tctccaagatgcccccagaaaaagtgcagcggctctatgtcgactttccccaacacctgcggcatcttctgggtgactgg ctggagagccagccctgggagttcctggtcggctccgacgccttctgctgcaacttggctagtgccctactttcagacac tgtccagcaccttcaggcctcggtgggagagcagggggaggggagcaccatcttgcaacacatcagcacccttgagagca tatatcagagggaccccctgaagctggtggccactttcagacaaatacttcaaggagagaaaaaaagctgttatggaacag ttccgccacttgccaatgcctttccactggaagcaggaagaactcaagtttaagacaggcttgcggaggctgcagcaccg agtaggggagatccaccttctccgagaagccctgcagaagggggctgaggctggccaagtgtctctgcacagcttgatag 20 aaactcctgctaatgggactgggccaagtgaggccctggccatgctactgcaggagaccactggagagacagcagcagc aaagccctagtgctgaagaggatccagatttggaaacggcagcagcagctggcagggaatggcgcaccgtttgaggagag cctggccccactccaggagaggtgtgaaagcctggtggacatttattcccagctacagcaggaggtagggcggctggtg gggagcttgagcccaagacccgggcatcgctgactggccggctggatgaagtcctgagaaccctcgtcaccagttgcttc ctggtggagaagcagccccccaggtactgaagactcagaccaagttccaggctggagttcgattcctgttgggcttgag 25 agaggagaagtgegetgtgetettetetgeeagetteacaettggeeceggeaaaetececatecageteeaggeeetgt ctctgccctggtggtcatcgtccatggcaaccaagacaacaatgccaaagccactatcctgtgggacaatgccttctct 30 gagatggaccgcgtgccctttgtgggtggctgagcgggtgccctggggagaagatgtgtgaaaactctgaaactgaagttcat ggctgaggtggggaccaaccgggggctgctcccagagcacttcctcttcctggcccagaagatcttcaatgacaacagcc tcagtatggaggcettccagcaccgttctgtgtcctggtcgcagttcaacaaggagatcctgctgggccgtggcttcacc ttttggcagtggtttgatggtgtcctggacctcaccaaacgctgtctccggagctactggtctgaccggctgatcattgg cttcatcagcaaacagtacgttactagccttcttctcaatgagcccgacggaacctttctcctccgcttcagcgactcag 35 agattgggggcatcaccattgcccatgtcatccggggccaggatggctctccacagatagagaacatccagccattctct gccaaagacctgtccattcgctcactgggggaccgaatccgggatcttgctcagctcaaaaatctctatcccaagaagcc caaggatgaggctttccggagccactacaagcctgaacagatgggtaaggatggcaggggttatgtcccagctaccatca agatgaccgtggaaagggaccaaccacttcctaccccagagctccagatgcctaccatggtgccttcttatgaccttgga atggcccctgattcctccatgagcatgcagcttggcccagatatggtgccccaggtgtacccaccaccactctcactccat ccagcetgggccagatgagcctgccctttgaccagcctcacccccagggcctgctgccgtgccagcctcaggagcatgct tggaggggaaagggggagtcgggggggggtccttggggggcacagccctcctgcagccctccactatgggcaatctggg atctcaatgtcccacatggacctaagggccaaccccagttggtgatcccagctggaggaggagaacccaaagagacagctct tetaetaececeacagaeetgetetggaeaettgeteatgecetgeeaageageagatggggagggtgeeeteetateee cagcgcgcacacgcacgcacacacacatacagagctctctgagggtgatggggctgagcagg (SBQ ID NO:12175) 50 tttatttttaatttaatcacttaatttttaatttttaagatggagtctcactctgttgcccaggctgaagtgcaagggtg taatctcagetcactgcagcctctgcetcccggattccagtgattttcctgcttcagcttcccaggtagctgggattgca ggcacatgccactgtgcccagataatttttttgtattttttagtagagacggggcttcaccatgttggccaggctggtctt gaactcctaacctcagatgatccgcacacctcggcctcccaaagtgctaggattacaggcatgagcctctgcgcctggcc 55 tgtagagatgggatcttgctatgttgcccaggctggtctcgaactcctggcctccagcaatcctcctgcctcagcctccc agagtattgggattacaggtgtgagccattgtgcttgatcaagatgctgttatgggctgagttgtgttcctcaaaaattc tettgaagteetaateteaagtaetteaggaegtgaeettattttgaaggaeeeettatagggtetttaeagaggtaat taagttaaaatgaggccattaggatggggcctaatgcaatatgactggtatccttgaaaaaaggggaaacttggagactg 60 tgtttaagtcatgcaatatgtagtactttgttacagcagccctagcaaactgatacactcaccaaatcgattttgtgact tgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgacggagtcttgttctgtcaccaggctggagtgcagtggcttgat ctcggctcactataatcacagccttccagattcaagtgatttccctgcctcagcctcctgagtagctgggactacaggcg 65 cgcaccaccacgccgactaattttttgtatttttagtagagacggggtttcaccatgttggccaggatggtctcaatct cctgaccttgtgatctgcctgcctcagcctcccaaagtgctgggattacaggcgtgagcctctcttgtgcaatctttacc accactcaatgggatgtcaaggtccaggggagggtgatacagtcaccctcacagtcatgcaggtgcagatgtcattaatg aaggtotgacagaccotgcaattgtacaatotgaagatgagtatotoottaaatttcatactotaggcactttaccotag cctagactctgttgaagtaggtataactattattctcatttgagggattgacacctgattgtgaacctcctaaatggagt 70 catacccaagccagatttgcctctaaattctgttttttccccttacatcacagtgttcccattggtatagtcagttacag agggagtaatatatactatttttctaccagtacttgctcctcgccttcctacccctaaaaggagccaaagtcagagatc acatttactcttttccctcctcctcccaagtctttggggacttgtagctctgacacccttagatggtgaaacctggctt cacctactgtctgtggatgtctgcaggcagagtgggcactcaggagcacatacaaagcacgtgtgccgtgaacacgtatg tgcacacacettgateetagcatggettgttggacaageeaatggacagagteeetgeetgeeaceteeaceetgetet cccttctcttccattcactgtcctgcagacacagcaaacacatacgcacatacaccttcaatatccttttggcagtaaca tgacccccaaatctggggacttctatgtaggatggagacccttctcctttcctcatacctggtttattatgaaccataaa aatagtgcctgacagttactgtgtgtcaggcattgttctaagccttcagatgttttactgcattttattctcacattatg ctgctgcctggctgggtcacacacgtgcactcatgcacagacctgcggggtagcaagggatggaggaggaggaggagtggt tctggaaatcaattcaggcaccaggggcagcataggcctagctttggcccctcagcccagcccctgctatgggaggag gaggggagtagaaacttcctcccaccgccctcagacaccacctcttccacacaccggggctctcaggtgtccgggagta

aaggootototggatocottggtotoctocagotoctococcagoaaaaactgcagaaccotccactagttatgttgatg agttgtgcatgtgtgtgtttgtttcttggcgtgtctcagtgtttaccccagaaacatataggaacttggcagataggaac caggaggggtgccctgtgaggagagagcaaagaccagcttcagtccaagggactcctagagtcttccagaattctgagct gagggttcccctccccactcccgtcagtggtcacgagaccgacetctaaggcgttccctgccggaagggagggg ttacttttcctgaggccctggggagcccagtcccttgtgggtccaaaccccagcccttggcagagtttgagtttgggagc ${\tt caggcagttaggggtggcaaatctctgtttgatattgggtgactttctggagaaaagctgatgcttttgagggggacaga}$ gtaagtgggggtcagcctcccccaagcctggctccaaggcctggaccccagtcctgatcccccacgtgttcccccactc ggcacaggaggcacacatattcaccccactttcttcctcttcctcctccagcccactttctctcttctgtgtcagag ggtgttggaagggggaggtgctagcagggccagccttgaactcgctggacagagctacagacctatggggcctggaagt actoccctecccatgggtcacgttttcacagcotcaccctgcaccccaagggcccatggaaagtcagggaaaggagg ttgttaaacccctatcctgccctcactaaaggttcctgttcaagggtgtggcgtgggcaagcccagatgtag acctcatggtggcgcagacgaggggaatttccccctcaaaactgctccacgcttggctcgtgtagacgctgagatttcc cagoggoggoggaattaaccetectogtgetgaactggetecaecteccegecttgeccecaecgecacatteacgea ttgggcaactcagagaagatgttttaactttcgatcctgtggtccacaatgagaggactcgggcagataggggttgagat aagcgagtttaggccaccaagcgggcggacgaggatcccagaccttgcgcttcccttctgagtttgggaggtaacactgg ccccgccctcacgccgtggctcctcccttcccttcacttcaaggggctgaagacaaaaggtgcccctgtcctggtcaag ccaatcgacccagccttgttatgggttggggtggggaaaaatgagtcctcctgatggctggggaagaagaggggttggat gacctttctcttcttgggctagagaaaggcctattggaggaacctgagcaggaggggtaaggattctgccttgaggagaa cattttccatcctctgagaggcctgggagaggtgagaggctgaacgtgcaacaggaggacttggggttactgggtttgg ggagacctggggagttgtcatcccatcctctccctcatctctgggagagggatattatgagaaacgtgaactgagaggcc cctgggaaaccactggttacccagtcctccctgaacctggaaatggggatgcaacccctcttctacttccctgtcccct $\verb|ctagcttactaaacccgccttttttccagtctcttccatcctttagttctctctactttccttttccacctctcc|\\$ tecttcaagtctcctccaccttctccagtccctcttaggatgatcagatttgccctggaagggatcctaacaacacagtg cgatggttaatccccactcagattcaaagcctgctttccaaactcacttactgagtggccttgggagagtagagagaact ccttaagcctcagtttcttcatctataaaatgggatattatatattttaaaaagtgtcgtgaggcctgaaggagataatacacctgagtgtaatgcctcatacacagtaagtgcttaacaaatagcagctgttattactctcccatcctcttcatcatcta ggagtgcagtggctcgatctctgctcactgcaagctccgcccccaggttcacgccattctgtcacctcagcctccccag tagetgggagtacaggegetegeeaceacgeeetgetaattttgtttttgtatttttagtagagatggggttteactgtg ttagccaggatggtcttgatctcctgacctcgtgatctgcccgcctcggcctcccaaagcgctgggattacaggcatgag ccactgcgcctggccgagccttgtggttttcaaattatctcatggagtcctagaattttgagaggtttgtctagggatgc ttcggtttcgtaccttttatgtaattgagattccacagattaaaagctgacattgcctaccgctttaaaaagtttggaaa gttttccactcatctaacactcatattttatagatgagaagatcgaagcccacaaagggaaggctctttgcccacagaac cagagccaggtctagagctgcaactaaatcctctgccactctaagagagctctcgctctactgccctgtctccctttgcc tccccatccctctggctacagctcagctcttcccacccctgtgtctatcactgaaggagttacccccatctcaggcattg teccetggetgeeeeaggagatagggetaggtetttaggeaccecteagagtgggettatttttteeeceaggaagg
teccaagteceaggataggeeaagtttetttgggeaccecteagagtggeettattttttteeceaggeacet
tecaagteceagateatetetgtggggtetggteteaagatgeeeecagaaaaagtgeageggetetatgtegaett
tecceaacacetgeggeatettetgggtgaetggetggagageeageeetggtgagteetggetgeteeetggtggteee
ceaagtettecctaacteatetteetteteettagattttteteeeeteacecatggatteagaacttgagacetgttat ctccgacgccttctgctgcaacttggctagtgccctactttcagacactgtccagcaccttcaggcctcggtgggagagc aactgctagctagcaggcaaattagattttaaaagcatgcaaatgcacaaaaacttctggagtctacagttgtgcttcct tatagtatatgtgtgaatgcaggcctggggattggagggattgaaggacatgggtaagagcaaagctcactgtttaccac cctcatttctgtagagcatatatcagagggaccccctgaagctggtggccactttcagacaaatacttcaaggagagaaa aaagctgttatggaacaggtattgtgatattccacctcccaccccaactcaatcccctgagactttggcctgagccatga caaactagaaagaatttgatcctcagaaaaggctcagtgttctaggcccaggaatgaccaaaggaggttcctagggtcag agtgaaccccaagtcaagctcagggaatctttctatgagggactgaaggtaagaggccggggagaacagagcaagggata aggagotgattotgotaggagoaaggtottatotocacgatattocaaaaggtoaggaagaactgocaaaggggagaggg gaacaagaaaacgctatatgcagagcagagtggaggccaggtatagagggatgagcagagtgtttgagttcttggcat ctgtccttcctgtgtagttccgccacttgccaatgcctttccactggaagcaggaagaactcaagtttaagacaggcttgcggaggctgcagcaccgagtagggagatccaccttctccgacaagccctgcagaagggggctgaggctggccaaggtgg gggccagggtggttctggggagtgtgtaagagtggttgcctcttggatctcaaccttatctgaacctctaatctgctgc
accttgatttctgcccccaaccctcagtgtctctgcacagcttgatagaaactcctgctaatgggactgggccaagtga
ggtgagtaatgggctgacaggtggagaccttggtcaaagtgcaggtgagggagtggagctgggcaagctgggcaagctggccacagctggagtgaggcaccccccagaggcctggtggaggccctggccatagccctagccacaggccctctctgccataggccctggcatgcacctgcaggagaccactgggaggcagccaaaag
ccctagtgctgaagaggatccagatttggaaacggcagcagcagctggcagggaatggcgcaccgtttgaggaggcct
gccccactccaggagaggttgggctagggctgatgggaagagggcagctggcaaggtgagagagctggcacagttccaaggcgggaggccttggcacagtggaggagagctggcacagttccaaggcgggaggccttggcacactgtggaggggagagccaagctgggagggcacacctgtcgtaaa tgccacaaagcactgtaagtggtggcagttgttcttgggtgcaagaaccgtcggggagaggcagctgggtttccacaggg

ggtgtaggcaactgataatgaacctcccaccacaccctaggccaacagatcacagaaccccttcagcccaggtgccttg cagccacaccactacccacccacttctccacacatgatagcctttctccctgggtataggggaaggggtctggggcg gagcaagcagccttaatcctgtgccccctgaccactgtcctggccccaggtgtgaaagcctggtggacatttattcccag ctacagcaggaggtagggggctggtggggagcttgagcccaagacccgggcatcgctgactggccggctggatgaagt cctgagaaccctcgtcaccaggtattccccgggagctcccagtctggcctagaacagacctcgggaagaaaagagggg ctagagctgtggggagggcaccagcagggacctagccccaactcccttgtgtcctcctcactcccagttgcttcctgg ${\tt tggagaagcagccccccaggtactgaagactcagaccaagttccaggctggagttcgattcctgttgggcttgaggttc}$ ctgggggccccagccaagcctccgctggtcagggccgacatggtgacagagaagcaggcgcgggagctgagtgtgcctca 10 20 tgcacatgcgtgccagcacacacgtctggttttcacaataacattatgaggtaggcagtattatcagcctcattttat agcatgaggacattgagacagagagittaagtagtttgtcccagtcacccagctaagtgitggagctggtatctgaaacc tggaagtctggttccatagcgattatagtaaccacttctctacggtgaggccctgattgagcttcaaaacgcatttaata acatgg (SEQ ID NO:12176) 25 ggaaagaaagaaagaaagaaaccctgtcctcaccctacttcaggccctgtctctgcccctggtggtcatcgtccatggc aaccaagacaacaatgccaaagccactatcctgtgggacaatgccttctctgagatggtgaggaaagtccttggtagttg gagggaacagggtgcagggtggggttctaacatgggcagtggtgcaggcctgctgatggggtggtggcatgtcggatggg tgtgacettaacaettetteatgggcetgetttegtgettetgacetettttcaceccagtettaacaaetatcaggcca cagcactgtaacctagaaaaaacagcatgtttgtgagcgatatcaggggctgtgggagggttaggccacaggcatgtggga 30 $\verb|cggatgaaggccgggcccgaggaataacaagacggtagcctgcagtgctctcttcttcccccttctccccaggaccgcgtg|\\$ aaaatagccaggatggtcgtttgcgtctgtaatcccagctactcggctgaggcaggaggtgaacccaggaggtaaaggct 40 aacatggtgaaaccccgtctctactaaaaatacaaaaattacctgggcatggtggcgcatgcctgtattcccaactactc gggaggctgaggcatgaaaatcacttgaacctgggaggcagaggttgcaggcgagccaagattgtgccactgcactccag cctgccaacaaaaatgagattctgtc (SEQ ID NO:12178) ggttaccttccctttgggcgtcaacttctgccacacctccttagggagagggtgtagcatagtagttaagaggggtccag ggccagaatgcctgggtttaaatcctagctctgcctcttaccagctatgtagacctgggcaagtcattcgacgtttttgg aaaggettgaaatagtggetggeacgtgtaageattaggattggtegttgteattgatggagteteaggtteggtetgat 50 55 gccccaccctaggtcctctccccttgccttggtggagtgagaacaggtcttatggtaggggttggggaaggggaagaaa tccggacagagggatctcagggtctccttcctaccataggctctccacagatagagaacatccagccattctctgccaaa gacctgtccattcgctcactgggggaccgaatccgggatcttgctcagctcaaaaatctctatcccaagaagcccaagga tgaggettteeggageeactacaagegtgagetggaactggeagetetgatteetteetgteaceeactteetgeeatge tccccgctgccatcctctccccagcccgtgagttatcctgaggtcactccgaatttccatagctgtgcttttcttacttc ccggatgatccatgcccaccttttccacctcccttcctccctaacccgagagcaatccatggcagtcttttccatctcac aacagctgaacagctgaacagatgggtaaggatggcaggggttatgtcccagctaccatcaagatgaccgtggaaaggtg ttatgaccttggaatggcccctgattcctccatgagcatgcagcttggcccagatatggtgtaaggagċtggaaagacag gaatgggagtggtctgtgcagatgggctaatcttagcatgggcagctgggagagctggcactgggggctgaacagggaat 70 taaatgagttcataacacttaaaaagctcgagcatagtgcatggctcatagcaaaagctgtgtaagtccagtcgtggatcacttaatgaaggagcattttctgtctttggcagtttcataattatgcggaataccattgagtataattacacaaaacctag atggtatagactactatacactgaggctatattgtgtagcctattgatcctagctttaaacccgagcagcatgatactgt 75 ttttgagacagggtotcactcactggagtgcagtggtgcgatcttagctcccctgcaacctccgcctcttgggctcgagc aatcctcctgctgtagtgcaccacgacactcggctaattctttttttaagatttttctgcagacaaggtctcacttactgc ccaagetggteteaaaeteetgggettaagtgateeteecaeeteggeeteecaaagegttaggattaeaggegtgagte actctgcctggccttgattataatcttatgggaccactgtggtctgtagttgacagaaatgtcgttaatgtggtgcatga ctgttattattatttetgtcctgcccctgagagccactgtcacttctctgctgtattggtttttgtttactcatctgtt ttggccttgaaatggcctagacatttttcttcccgaagtatgacactcgggtgcttattaacttagtcaagacacaacat ctcccttcccagaaagtgaggcgggagtgaggacttggggacttaagaactaccaaagttcagagtccaaagggaaacatt

agaaattgggtaatccacccccataacacgcacattttacagatgagaagactgagctcagagcatagaaatagcttgcc gcetagectgcettectetaactgtgctetecetaettecaggcetcacetgcagatgcececcagectgggccagatga acctgccctttgaccagcctcaccccaggtgaatgacaaaagcccctcctgacccatgtgcctcttctttcctgggcct tgcccgctctccttatttccattgctggttcctggcagggcctgccgtgccagcctcaggagcatgctgtgtccagc cacttggtgagtggcagcttgggagtggagtgggcatctaggggagtgggcatgcctactccactgcttctc ccatctccttgcaggattggtgaagacatattccttcttgctgctcccactgaacaggacctcactaagcttctcct ggagggcaaggggagtcggggggggggtccttgggggcacagccctcctgcagccctcccactatgggcaatctggga ctactacccccacagacctgctctggacacttgctcatgccctgccaagcagaagaggtgggggtgccctcctatcccc agcgcgcacacgcacgcacacacacatacagagctctctgagggtgatggggctgagcaggagggggggtggggtaagagc acaggttagggcatggaaggcttctccgcccattctgacccagggcctaggacggataggcaggaacatacagacacatt gcataggaggagtctggacatgtggttactagtacaggttttgccctgattaaaaaatctcccaaagccccaaattcctg ttagccaggtggaggcttctgatacgtgtatgagactatgcaaaagtacaagggctgagattcttcgtgtatagctgtgt gaacgtgtatgtacctaggatatgttaaatatatagctggcaccttagttgcatgaccacatagaacatgtgtctatctgcttttgcctacgtgacaacacaaattttgggagggtgagacactgcacagaagacagcagcaagtgtgctgcctctctga catatgctaacccccaaatactctgaatttggagtctggccaagtgggtccaagtggccttgtgacatctacgtat ggctccacacctccaatgctgcctgggagccagggtgagagtctgggtccaggcctggccatgtggccctccagtgtatg agagggccctgcctgctgcatcttttctgttgccccatccaccgccagcttcccttcactcccctatcccattctccctc tctgaaaagaaagacgctctaactgctcagataggtgctgcggtccagcccccagctggaggagaccctgagtccaaccc aggeetcccgagggggccagtgaagggatcccacacccaccgcectatgtagggcagggaagaaattgcaaaggacttg gaaggagaagggagaaggagcaggtccagtgttccaggccccaattctgggggcaaatgtgcca (SEQ ID NO:12179) aaatttattttattgcttaggatctatgacccctgccttgagagggagaatggggataggggagtgaagggaagctggcgg tggatggggcaacagaaaagatgcagcaggggccctctcatacactggagggccacatggccaggcctggacccaga ctctcaccctggctcccaggcagcattggaggtgtggagccatacgtagatgtcacagccacttggaccacttgaccactt agtcagactccaaattcagagtatttgggggttagcatatgtcagagaggccagcacacttgctgctgtcttctgtgcag tgtctcaccctcccaaatttgtgttgtcacgtaggcaaaagcagatagacacatgttctatgtggtcatgcaactaaggt gccagctatacatttaacatatcctaggtacatacacgttcacacgctatacacgaagaatctcagcccttgtactttt gcatagteteatacaegtateagaageeteeaeetggetaaeaggaattttggggetttgggagattttttaateagggea aaacctgtactagtaaccacatgtccagacccctcctatgctccacccagggtcccttgagctgcttcccattccccta gggetgagacccaatatectetatecetggcetetagtgtaaatgtgtetgtatgtteetgeetatecgteetaggeeet gggteagaatgggeggagaagcetteeatgeeetaaeetgtgetettaeeeageeeeeteetgeteageeeateaeee agaggagggaatatgtetteaccaateetgcaaggagatgggagaageagtggagtaggeatggegeccaeteeectaga tgccacccagcctccactcccaagctgccactcac (SEQ ID NO:12180) tttatttttaatttaatcacttaatttttaatttttaagatggagtctcactctgttgcccaggctgaagtgcaagggtg taatctcagctcactgcagcctctgcctcccggattccagtgattttcctgcttcagcttcccaggtagctgggattgca ggcacatgccactgtgcccagataattttttgtattttttagtagagacggggcttcaccatgttggccaggctggtctt gaactcctaacctcagatgatccgcacacctcggcctcccaaagtgctaggattacaggcatgagectctgcgcctggcc tgtagagatgggatettgetatgttgeceaggetggtetegaaeteetggeetecageaateeteetgeeteageeteee agagtattgggattacaggtgtgagccattgtgcttgatcaagatgctgttatgggctgagttgtgttcctcaaaaattc tettgaagteetaateteaagtaetteaggaegtgaeettattttgaaggaeeeeettatagggtetttacagaggtaat taagttaaaatgaggccattaggatggggcctaatgcaatatgactggtatccttgaaaaaaggggaaacttggagactg ctgagaaggaatcaatcatctgctcaggttaaccttgatcttggacttctagcctccagcatcttgagagatttctgt cgcaccaccacgcccgactaattttttgtatttttagtagagacggggtttcaccatgttggccaggatggtctcaatctctgaccttgtgatctgcctcagcctcccaaagtgctgggattacaggcgtgagcctctcttgtgcaatctttaccaccatcaatgggatgtcaaggtccaggggagggtgatacagtcaccctcacagtcatgcaggtgcagatgtcattaatg aaggtctgacagaccctgcaattgtacaatctgaagatgagtatctccttaaatttcatactctaaggcactttaccctag cctagactctgttgaagtaggtataactattattctcatttgagggattgacacctgattgtgaacctcctaaatggagt catacccaagccagatttgcctctaaattctgttttttccccttacatcacagtgttcccattggtatagtcagttacag agggagtaatatatatatttttctaccaqtacttgctcctcgccttcctaccccctaaaaggagccaaagtcagagatc 70 acatttactcttttccctcctctccaagtctttggggacttgtagctctgacacccttagatggtgaaacctggctt cacctactgtctgtggatgtctgcaggcagagtgggcactcaggagcacatacaaagcacgtgtgccgtgaacacgtatg tgcacacacttgatectagcatggcttgttggacaagccaatggacagagtecetgectgccacetecaeeeetgetet cccttctcttccattcactgtcctgcagacacagcaaacacatacgcacatacaccctcaatatccttttggcagtaaca tgacccccaaatctggggacttctatgtaggatggagaccttctcctttcctcatacctggtttattatgaaccataaa 75 aatagtgcctgacagttactgtgtgtcaggcattgttctaagccttcagatgttttactgcattttattctcacattatg cattagcaggatttgaacccaagcagcctgtatccacagtccagtcttttaactgctatattttgctgtgttcaaaccct gaggggagtagaaacttcctcccaccgccctcagacaccacctcttccacacaccggggctctcaggtgtccgggagta aaggcctctctggatcccttggtctcctccagctcctcccccagcaaaaactgcagaaccctccactagttatgttgatg

agttgtgcatgtgtgtgtttttttttggcgtgtctcagtgtttaccccagaaacatataggaacttggcagataggaac caggaggggtgccctgtgaggagagagcaaagaccagcttcagtccaagggactcctagagtcttccagaatttctgagct ttacttttcctgaggccctggggagcccagtcccttgtgggtccaaaccccagcccttggcagagtttgagtttgggagc caggcagttaggggtggcaaatctctgtttgatattgggtgactttctggagaaaagctgatgcttttgagggggacaga gtaagtgggggtcagcctcccccaagcctggctccaaggcctggacccagtcctgatccccaagtgttcccccactc ctccagggagggacctgggtagaaggagaagccggaaacagcgggctggggcagccactgcttacactgaagaggagga ggtgttggaagggggggggggggctagcagggcaggcttgaactcgctggacagagctacagacctatggggcctggaagt cagctantgttggtggctggtggcactgggttttancagtttcgaactcctggaggaactgggagggtccaggcctcant actecectececatgggtcaegttttcaeagectcaeectgeacececaagggeceatggaaagtcagggaaaggagg tgaaggagtgcccctctgccctgagtcgggggaagtggccgccctccttggaaggttgatcgcagagggcagtggatcc
ttgttaaacccctatcctgccctccactaaaggttcctgttcaagggtgtggctggggcgtgagcaagccccagatgtag acctcatggtggcccagacgagggggaatttccccctcaaaactgctccacqcttggctcgtgtagacgctgagatttcccagggggggcgcgaattaaccctcctgtgtgaactggctcacctccccgccttgccccaccacctcaccacctccccgcacacttcacgca 20 ttgggcaactcagagaagatgttttaactttcgatcctgtggtccacaatgagaggactcgggcagataggggttgagat aagcgagtttaggccaccaagcgggcggacgaggatcccagaccttgcgcttcccttctgagtttgggaggtaacactgg ccaatcgacccagccttgttatgggttggggtggggaaaaatgagtcctcctgatggctggggaagaagaagaggggttggat gacctttctcttcttgggctagagaaaggcctattggaggaacctgagcaggagggtaaggattctgccttgaggagaa aagagetggggtaagtgggcaetggaggaaagagggcatgaaggtettggagcagaaacgtecagagaaagggaeetete cattttccatccctctgagaggcctgggagaggtgagaggctgaacgtgcaacaggaggacttggggttactgggtttgg ggagacetggggagttgtcatcccatcctctccctcatctctgggagagagggatattatgagaaacgtgaactgagaggcc cctgggaaaccactggttacccagtcctccctgaacctggaaatggggatgcaacccctcttctacttccctgtcccct ctagcttactacacccgccttttttccagtctcttccatcctcttccttagttctctactttccttttccacctctcc tectteaagteteeteetaectteeceacttettaggatgateagatttgeeectggaagggateetaacaacaeagtg cgatggttaatccccactcagattcaaagcctgctttccaaactcacttactgagtggccttgggcagagtagagaaact ggagtgcagtggctcgatctctgctcactgcaagctccgcccccaggttcacgccattctgtcacctcagcctccccag tagctgggagtacaggcgctcgccaccacgccctgctaattttgtttttgtatttttagtagagatggggtttcactgtg ttagccaggatggtcttgatctcctgacctcgtgatctgcccgcctcggcctcccaaagcgctgggattacaggcatgag ccactgcgcctggccgagccttgtggttttcaaattatctcatggagtcctagaattttgagaggtttgtctagggatgc ttcggtttcgtaccttttatgtaattgagattccacagattaaaagctgacattgcctaccgctttaaaaagtttggaaa gttttccactcatctaacactcatattttatagatgagaagatcgaagaccacaaagggaaggctctttgcccacagaac cagagecaggtetagagetgeaactaaateetetgecactetaagagagetetegetetactgeeetgteteeetttgee tecceatectetggetacageteagetetteceaeceetgtgtetateaetgaaggagttaceeeateteaggeattg teccetggetgecceaggagataggecaagtttetttgggeaccecteagagtggeettattttttteeteeaggeaacc 50 tccaagtcccagatcatgtctctgtggggtctggtctccaagatgcccccagaaaaagtgcagcggctctatgtcgacttgccacagatgcccccagaaaaagtgcagcggctctatgtcgacttgccacagatgcccccagaaaaagtgcagcggctctatgtcgacttgccacagatgcccccagaaaaagtgcagcggctctatgtcgacttgccacagatgcccccagaaaaagtgcagcggctctatgtcgacttgcacagatgcccccagaaaaaagtgcagcggctctatgtcgacttgcacagatgcccccagaaaaaagtgcagcggctctatgtcgacttgcacagatgcacagtocccaacacetgcggcatettetgggtgaetggetggagagccagecetggtgagtectggetgetecetgctggtece tccatgtgtagtgacctagatttagcagggagtctgtgccccatcaagaccaggctatgaatgttgacagatggagaccc ccatctcttaggaggctgagccgaagaggggggtttgggctgggacaaaggcacttctcataacagctagaagactg ggaaacaaggcgcatgggtgaaagctacagagggcctagatggagaataaggagcgagaaaaggaatgctgacttttggct ggunacaaggtcaggaaactgaagaagcctggcctgaagtacctctcctgatcttcctgcaagggagttcctggtcg ctcgacgccttctgctgcaacttggctagtgccctactttcagacactgtccagcaccttcaggcctggtggagagc aactgctagctagcaggcaaattagattttaaaaqcatgcaaatgcacaaaaaacttctggagtctacagttgtgcttcct tatagtatatgtgtgaatgcaggcctggggattggagggattgaaggacatgggtaagagcaaagctcactgtttaccac cctcatttctgtagagcatatatcagagggaccccctgaagctggtggccactttcagacaaatacttcaaggagagaaa aaagetgttatggaacaggtattgtgatattecaceteccaceccaactcaateccetgagactttggcetgagecatga caaactagaaagaatttgatcctcagaaaaggctcagtgttctaggcccaggaatgaccaaaggaggttcctagggtcag agtgaaccccaagtcaagctcagggaatctttctatgagggactgaaggtaagaggccgggggagaacagagcaagggata aggagetgattetgetaggageaaggtettatetecaegatattecaaaaggteaggaagaactgecaaaggggagaggg gaacaagaaaacgctatatgcagagcagagagtggaggccaggtatagagggatgagcagagtgtttgagttcttggcat ctgtccttcctgtgtagttccgccacttgccaatgcctttccactggaagcaggaagaactcaagtttaagacaggcttg cggaggctgcagcaccgagtaggggagatccaccttctccgacaagccctgcagaaagggggctgaggctggccaaggtgg 70 accettgatttetgeccccaacceteagtgtetetgeacagettgatagaaacteetgetaatgggactgggecaagtga ggtgagtaatgggctgacaggtggagaccttggtcaaagtgcagctggagggatggaagctagacctcagaaagacacag gctgaagtatgggcaagggaatgccagaggagtgagaaaaagacgtatccaggagctgggtgtggaggcagcgtgaggc cctggctcaggcccctctctgcccataggccttggccatgctactgcaggagaccactggagagctagaggcagccaaaag gctctataggtgsatatatagatccaggtggagggtctgtagtaggagggctataggagggcacaaagcggggactcatccaaccag gcttctctcctcaagcccatgcctagaggaattagtaggagggcttttcattggtttattggtgaggggacacttcatccaaccag gctggagaacctgtaagtggtggcagttgttcttgggtgaagaaccgtcggggagaggcaggtgggtttccacaggg ggtgtaggcaactgataatgaacctccaccacaccctaggccaacagatcacagaaccccttcagcccaggtgccttg cagccacacccactacccaccccacttctccacacatgatagcctttctccctgggtataggggaaggggtctgggccg

gageaageageettaateetgtgeeeeetgaeeactgteetggeeeeaggtgtgaaageetggtggaeatttatteeeag 10 gatgagetegtteacaetetgaceteecetgggcagagaaagcaetggagaaateateaacaacaetgtgeeettggaga acagcattectgggaactgctgctctgccctgttcaagaacctggtgaggggctttggggtgcagtgaggggggcaccac taggagactgtgggactctccttggagaggatgtcaggaagcccaggaggagcggtctctgtcctcatgacctcgccctt gctctccctcacccacccacagcttctcaagaagatcaagcggtgtgagcggaagggcactgagtctgtcacagaggag aagtgcgctgtgctcttctctgccagcttcacacttggccccggcaaactccccatccagctccaggtgaaccgtggccc agccetgcccaatctgggaccccgagtcctcctccaatgccacgcacaagggccctggaccctcacctcttgtgactgc cccataccccatgtgtctgggattcatgcacactggggcccgggtgagtggggtgagcaagagcatggagtgcacaggg tgcacatgcgtgccagcacacacgtctggttttcacaataacattatgaggtaggcagtattatcagcctcattttat agcatgaggacattgagacagagagtttaagtagtttgtcccagtcacccagctaagtgttggagctggtatctgaaacc tggaagtctggttccatagcgattatagtaaccacttctctacggtgaggccctgattgagcttcaaaacgcatttaata acatggggaaagaaagaaagaaaccctgtcctcaccctacttcaggccctgtctctgcccctggtggtcatcgtc catggcaaccaagacaacaatgccaaagccactatcctgtgggacaatgccttctctgagatggtgaggaaagtccttgg gtgggacggatgaaggccggccgaggaataacaagacggtagcctgcagtgctctcttcttcccccttctcccccaggac 30 tttgggaggctgaggcgggcggatcacaaggtcaagaaatcgagaccatcctgaccaacatggtgaaaccccgtctctac taaaaatacaaaaattacctgggcatggtggcgcatgcctgtattcccaactactcgggaggctgaggcatgaaaatcac ttgaacctgggaggcagaggttgcaggcgagccaagattgtgccactgcactccagcctgcaacaacaaaatgagattctg teggttacettegetttaggegtcaaettetgccacacctecttagggagagggtgtagcatagtagttaagaggggtcc agggccagaatgcctgggtttaaatcctagctctgcctcttaccagctatgtagacctgggcaagtcattcgacgttttt ggaaaggcttgaaatagtggctggcacgtgtaagcattaggattggtcgttgtcattgatggagtctcaggttcggtctg atcetcagecetgtgattetgtegtgagggeacteaeageteaetgeetgeetaaeaggeteeagetetggeeetee gtcctggacctcaccaaacgctgtctccggagctactggtctgaccggtgagtccccaccctgggtagtttgagcagccatacacgtcaccatactcactgcccatgcccatactcctctccttcatccggccaggctgatcattggcttcatcagcaacagtacgttactagccttcttctcaatgagccgacggaaccttttctccccgcttcagcgactcagagattgggg 50 aagacctgtccattcgctcactgggggaccgaatccgggatcttgctcagctcaaaaatctctatcccaagaagcccaag 55 geteccegetgecatectetecceagecogtgagttatectgaggteactecgaatttecatagetgtgettttettact teceggatgatecatgeecacettttecacetecetecetecetaaceegagageaatecatggeagtettttecatete acaacagctgaacagctgaacagatgggtaaggatggcaggggttatgtcccagctaccatcaagatgaccgtggaaagg tcagtcacatgtacctccttccctcctagggaccaaccacttcctaccccagagctccagatgcctaccatggtgcct tettatgaeettggaatggeeetgatteeteeatgageatgeagettggeeeagatatggtgtaaggagetggaaagaeaggaatgggagtggaatgggaatgggagetggaaegggaagetggagetgggagetggaaeagggagetgaateaggg tcagtcaacgtgttgtcagccttccaggagtaagtgaaaaacctcatggggataccatcccactctaagggggtgggcat ttgaattgttagaagaggctcttctgtgagaaaggagcagcaaatgctaacagcctgtcttcttctcttctgtccactct
aatgagggggtagtagttaagatctggactgcctaggtttgaattctagctccaccacttactggtttggggcaaattac 65 attaaatgagttcataacacttaaaaagctgggactagtgcatggctcatagcaaaagctgtgtaagtccagtcgtga tcacttaatgaaggagcattttctgtctttggcagtttcataattatgcggaataccattggagtataattacagaagca agatggtatagactactatatacactgaggctatattgtgtagcctattgatactatagctttaaacccgagcagcatgatact gttctgaatagtataaggaaatagtaacataatggtaaatatttgtgtgaggaattttcagcttgattataatttttt tttttgagacagggtctcactcactggagtgcagtggtgcgatcttagctcccctgcaacctccgcctcttgggctcga 70 gcaatcctcctgctgtagtgcaccacgacactcggctaattcttttttaagatttttctgcagacaaggtctcacttact gcccaagctggtctcaaactcctgggcttaagtgatcctcccacctcggcctcccaaagcgttaggattacaggcgtgag 75 tcactctgcctggccttgattataatcttatgggaccactgtggtctgtagttgacagaaatgtcgttaatgtggtgcat gactgttattattatttctgtcctgcccctgagagccactgtcacttctctgctgtattggtttttgtttactcatctq ttttggccttgaaatggcctagacatttttcttcccgaagtatgacactcgggtgcttattaacttagtcaagacacaac atctcccttcccagaaagtgaggcgggagtgaggacttggggacttaagaactaccaaagttcagagtccaaaggaaaca ttagaaattgggtaatccaccccataacacgcacattttacagatgagaagactgagctcagagcatagaaatagcttg ttgcctagcctgccttcctctaactgtgctctccctacttccaggcctcacctgcagatgccccccagcctgggccagat gaacctgccctttgaccagcctcacccccaggtgaatgacaaaagcccctcctgacccatgtgcctcttctttcctgggc

cttgcccgctctccttatttccattgctggttcctggcagggcctgctgccgtgccagcctcaggagcatgctgttcca ctggagggcaaggggagtcggggggggggggcacagccctcctgcagccctcccactatgggcaatctgg gatctcaatgtcccacatggacctaagggccaaccccagttggtgatcccagctggaggagaacccaaagagacagctc ttetactacceccacagacetgetetggacacttgeteatgccctgccaagcagcagatggggagggtgccctectatec cattcccctgcccacctccttccagcactgactggaagggaagttcaggctctgagacacgccccaacatgcctgcacct gcagogogcacacgcacacacacacacatacagagctctctctgagggtgatgggggctgagcaggaggggggctgggtaaga gcacaggttagggcatggaaggcttctccgcccattctgacccagggcctaggacggataggcaggaacatacagacaca tttacactagaggccagggatagaggatattgggtctcagccctaggggaatgggaagcagctgaagggaccctgggtgg gagcataggaggagtctggacatgtggttactagtacaggttttgccctgattaaaaaatctcccaaaaccccaaattcc tgttagccaggtggaggcttctgatacgtgtatgagactatgcaaaagtacaagggctgagattcttcgtgtatagctgt gtgaacgtgtatgtacctaggatatgttaaatatatagctggcaccttagttgcatgaccacatagaacatgtgtctatc tgcttttgcctacgtgacaacacaaatttgggagggtgagacactgcacagaagacagcagcaagtgtgctggcctctct gacatatgctaaccccaaatactctgaatttggagtctgactgtgcccaagtgggtccaagtgggtgtgacatctacgt atggeteeaeaeeteeaatgetgeetgggageeagggtgagagtetgggteeaggeetggeeatgtggeeeteeagtgta tgagagggccctgcctgctgcatcttttctgttgccccatccaccgccagcttcccttcactcccctatcccattctccc aatctgaaaagaagacgctctaactgctcagataggtgctgcggtccagccccagctggaggagaccctgagtccaac gcttaggatctatgacccctgccttgagagggagaatgggataggggagtgaaggggagctggcggtggatggggcaaca gaaaagatgcagcaggcaggccctctcatacactggagggccacatggccaggcctggacccagactctcaccctggct gaaaagatgcagcagggccctctcatacactggagggccactggccaggcctggacccagactctcaccctggct cccaggcagcattggaggtgtggagccatacgtagatgtcacagccacttggacccacttgggcacagtcagactccaa ttcagagtatttgggggttagcatatgtcagaagaggccagcacacttgctgctgtcttctgtgcagtgtctcaccctccc aaatttgtgttgtcacgtaggcaaaagcagatagacacatgttctatgtggtcatgcaactaaggtgccagctatacatt taacatatcctaggtacatacacgttcacacagctatacacgaagaatctcagcccttgtacttttgcatagtctcatac acgtatcagaagcctccacctggctaacaggaatttggggctttgggagatttttaatcagggcaaaacctgtactagt aaccacatgtccagaccctcctatgctccacccagggtcccttgagctgcttcccattcccctagggctgagaccaa tatcctctatccctggcctctagtgtaaatgtgtctgtatgttcctgcctatccgtcctaggccctgggtcagaatgggc ggagaagccttccatgccctaacctgtgctcttacccagccccctcctgctcagccccatcaccctcagagagctctgt atgtgtgtgtgcgtgcgtgtgcgcgctgcaggtgcaggcatgttgggggtgtgtctcagagcctgaacttcccttccagtc tetttteeteetgaeeeaggagtaggtggggataggagggeaeeeteeeeatetgetgettggeagggeatgageaagtg cccttaggtccatgtgggacattgagatcccagattgcccatagtgggagggctgcaggagggctgtgcccccaaggac gtottcaccaatcctgcaaggagatgggagaagcagtggagtaggcatggcgcccactcccttagatgccacccagcctccactcccaagctgccactcac (SEQ ID NO:12181) caccateceggetetaggactggagggecgggccaggacgagtetgegcagcgaggttececagegcccettge agecgegcgtaggcaggagcecgggccatgggccaggacgagtetgeggagccgagggagttececageggccettgeg agaagcageggagcacccgaageteceggcctgggcagaaaccgggagtggggcgggggagtgegggcatcccag gccggcccgaacgtccgccgcggtgggccgacttcccctctteccttettectttagcccgctggcgccgga cacgetgcgcctcatetettggggcgttettccccgttggccaaccgtcgcatcccgtgcaactttgggtagtggcgc ttagtttgaatgttccccaccgagagcgcatggcttgggaagcgaggcgcagaaccgggccccgaagccgccgtccgggagagcgcgtgatgctgttgctgttgctgggggtcccgaccggccgccctacaacgtggacactgagagcgcgctgctttac cagggcccccacaacacgctgttcggctactcggtcgtgctgcacagccacggggcgaaccgatggctcctagtgggtgc gcccactgccaactggctcgccaacgcttcagtgatcaatcccggggcgatttacagatgcaggatcggaaagaatcccg gccagacgtgcgaacagctccagctgggtagccctaatggagaaccttgtgggaaagacttgtEtggaagagagacaat cagtggttgggggtcacactttccagacagccaggagaaaatggatccatcgtgacttgtgggcatagatggaaaaatat 55 attttacataaagaatgaaaataagctccccactggtggttgctatggagtgccccctgatttacgaacagaactgagta aaagaatagctccgtgttatcaagattatgtgaaaaaatttggaagaaaattttgcatcatgtcaagctggaatatccagt ttttacacaaaggatttaattgtgatgggggcccaggatcatcttactggactggctctctttttgtctacaatataac tacaaataaatacaaggcttttttagacaaacaaaatcaagtaaaatttggaagttatttaggatattcagtcggagctg cagcagagaagctaactgtagaacacaatcaagcatttatgcggaaagatgtgcgggacatcctcaccccaattcagattg
aagctgcttaccaccttggtcctcatgtcatcagtaaacgaagtacagaggaattcccaccacttcagccaattcttcag 70 cagaagaaagaaaaagacataatgaaaaaaacaataaactttgcaaggttttgtgcccatgaaaattgttctgctgattt acaggittcigcaaagattgggtttttgaagccccatgaaaataaaacatatctigctgttgggagtatgaagacattga tgttgaatgtgteettgtttaatgetggagatgatgeatatgaaacgaetetaeatgteaaactaeccgtgggtetttat ttcattaagattttagagctggaaggaagcaaataaactgtgaagtcacagataactctggcgtggtacaacttgactg cggaagaggacctcagtatcacagtgcatgctacctgtgaaaatgaagaggaaatggacaatctaaagcacagcagagtg actgtagcaatacctttaaaatatgaggttaagctgactgttcatgggtttgtaaacccaacttcatttgtgtatggatc aaatgatgaaaatgagcctgaaacgtgcatggtggagaaaatgaacttaactttccatgttatcaacactggcaatagta tggctcccaatgttagtgtggaaataatggtaccaaattcttttagcccccaaactgataagctgttcaacatttttggat gtccagactactactggagaatgccactttgaaaattatcaaagagtgtgtgcattagagcagcaaaagagtgcaatgca gaccttgaaaggcatagtccagttcttgtccaagactgataagaggctattgtactgcataaaagctgatccacattgtt

taaatttettqtqtaatttttgggaaaatggaaagtggaaaagaagccagtgtteatatecaactggaaggecggecatee attittagaaatggatgagacttcagcactcaagtttgaaataagagcaacaggttttccagagccaaatccaagagtaat tgaactaaacaaggatgagaaatgttgcgcatgttctactggaaggactacatcatcaaagacccaaacgttatttcacca gaattccgggccgcttagtgttgaatgttccccaccgagagcgcatggcttgggaagcgaggcgcgaacccgggccccga agecgecgtccgggagacggtgatgctgttgctgttgcctgggggtcccgaccggcccctacaacggggcacccgacggtgcccga ctcctagtgggtggcccactgccaactggctcgccaacgcttcagtggtaatccagggggaatttacagatgcaggatcggaaagaatcccggccagacgtgcgaacagctccagctgggtagccctaatggagaaccttgtggaaagacttgtttgg aagagagacaatcagtggttggggtcacactttccagacagcagagaaaatggatccatcgtgacttgtgggca aagatggaaaaataattttacataagaatgaaataataaccccactggtggttgctatggagtgccccctgatttacg aacagaactgagtaaaagaatagctccgtgttatcaagattatgtgaaaaaatttggagaaaattttgcatcatgtcaag ctggaatatccaqtttttacacaaaggatttaattgtgatgggggccccaggatcatcttactggactggctctcttttt ttcagtcggagctggtcattttcggagccagcatactaccgaagtagtcggaggagctcctcaacatgagcagattggta aggcatatatattcagcattgatgaaaaagaactaaatatcttacatgaaatgaaaggtaaaaagcttggatcgtacttt ggagettetgtetgtgtgtgtggaceteaatgeagatggetteteagatetgetegtgggageaceeatgeagageaceat 20 gaagtgacaaatatgctgcaagatttggggaatctatagttaatcttggcgacattgacaatgatggctttgaagatgtt gctatcggagctccacaagaagatgacttgcaaggtgctatttatatttacaatggccgtgcagatgggatctcgtcaac cttctcacagagaattgaaggacttcagatcagcaaatcgttaagtatgtttggacagtctatatcaggacaaattgatg cagataataatggctatgtagatgtagcagttggtgcttttcggtctgattctgctgtcttgctaaggacaagacctgta 25 tgtgtgcatagatctaacactttgtttcccatataagggcaaggaagttccaggttacattgttttgttttataacatga gtttggatgtgaacagaaaggcagagtctccaccaagattctatttctcttctaatggaacttctgacgtgattacagga agcatacaggtgtccagcagagaagctaactgtagaacacatcaagcatttatgcggaaagatgtgcgggacatcctcac ${\tt cccaattcagattgaagctgcttaccaccttggtcctcatgtcatcagtaaacgaagtacagaggaattcccaccacttc}$ agccaattcttcagcagaagaaagaaaagacataatgaaaaaacaataaactttgcaaggttttgtgcccatgaaaat tgttctgctgatttacaggttctgcaaagattgggtttttgaagccccatgaaaacaataatacttgctgttgggag
tatgaagacattgatgttgaatgtgccttgtttaatgctggagatgatgatgcatatgaagccctacatgtcaaactac ctcactcagcagagcggaagaggacctcagtatcacagtgcatgctactgtgaaaatgaagagaaatggacatctaa agcacagcagagtgactgtagcaatacctttaaaaatatgaggttaagctgttcatgggtttgtaaacccaacttca tttgtgtatggatcaaatgatgaaaatgagcctgaaacgtgcatggtggagaaaatgaacttaactttccatgttatcaa cactggcaatagtatggctcccaatgttagtgtggaaataatggtaccaaattcttttagcccccaaactgataagctgt tcaacattttggatgtccagactactactggagaatgccactttgaaaattatcaaagagtgtgtgcattagagcagcaa aagagtgcaatgcagaccttgaaaggcatagtccggttcttgtccaagactgataagaggctattgtactgcataaaagc tgatccacattgtttaaatttcttgtgtaatttttgggaaaatggaaagtggaaaagaagccagtgttcatatccaactgg aaggccggccatccattttagaaatggatgagacttcagcactcaagtttgaaataagagcaacaggttttccagagcca aatccaagagtaattgaactaaacaaggatgagaatgttgcgcatgttctactggaaggactacatcatcaaagacccaa acgttatttcaccatagtgattatttcaagtagcttgctacttggacttattgtactctgttgatctcatatgttatgt ggaaggctggcttctttaaaagacaatacaaatctatcctacaagaagaaaacagaagagacagttggagttatatcaac agtaaaagcaatgatgattaaggacttctttcaaattgagagaatggaaaacagactcaggttgtagtaaagaaatttaa aagacactgtttacaagaaaaaatgaattttgtttggacttcttttactcatgatcttgtgacatattatgtcttcatgc aacatgtacactggtttgagcttagtgaaatgacttccggaatct (SEQ ID NO:12183) 55 cgccatcccgcgctctgcggactgggaggcccgggccaggacgcgagtctgcgcagccgaggttccccagcgcccctgc agecgegetaggeagagacggageceggeeetgegeeteegeaccaegeeegggacccaaccaageggeegtacecgg agaagcagcgcgagcacccgaagctcccggctcggcggcagaaaccgggagtggggccgggcgagtgcgcgcatcccag cacgctgcgcctcatctcttggggcgttcttccccgttggccaaccgtcgcatcccgtgcaactttggggtagtggccgc ttagtgttgaatgttccccaccgagagcgcatggcttgggaagcgaggcgcgaacccggggccccgaagccgccgtccggg agacggtgatgctgttgctgtgcctggggggtcccgaccggccgcccctacaacgtggacactgagagcgcgctgctttac cagggeeeccacacacacgetgtteggetacteggtegtgetgeacageeacggggegaacegatggeteetagtgggtge gcccactgccaactggctcgccaacgcttcagtgatcaatcccggggcgatttacagatgcaggatcggaaagaatcccg cagtggttgggggtcacactttccagacagccaggagaaaatggatccatcgtgacttgtgggcatagatggaaaaatat attttacataaagaatgaaaataageteeccactggtggttgctatggagtgeeccctgatttacgaacagaactgagta aaagaatagctccgtgttatcaagattatgtgaaaaaatttggagaaaattttgcatcatgtcaagctggaatatccagt ttt-acacaaaggatttaattgtgatgggggccccaggatcatcttactggactggctctcttttttgtctacaatataac tacaaataaatacaaggcttttttagacaaacaaaatcaagtaaaatttggaagttatttaggatattcagtcggagctg tatgttagatgtagcagcttggtgcttttcggtctgattctgctgtcttgctaaggacaagacctgtagtaattgttgacgcttctttaagccaccctgagtcagtaaatagaacgaaatttgatggtgtgtaaattggtgcattctgtgtgcatagatc taacactttgtttctcatataagggcaaggaagttccaggttacattgttttgttttataacatgagtttggatgtgaac agaaaggcagagtctccaccaagattctatttctcttctaatggaacttctgacgtgattacaggaagcatacaggtgtc cagcagagaagctaactgtagaacacatcaagcatttatgcggaaagatgtgcgggacatcctcaccccaattcagattg aagetgettaecaeettggteetcatgteatcagtaaacgaagtacagaggaatteecaecaetteagecaattetteag

cagaagaaagaaaaagacataatgaaaaaaacaataaactttgcaaggttttgtgcccatgaaaattgttctgctgattt acaggtttctgcaaagattgggtttttgaagccccatgaaaataaaacatatcttgctgttgggagtatgaagacattga tgttgaatgtgtccttgtttaatgctggagatgatgcatatgaaacgactctacatgtcaaactacccgtgggtctttat actytaggaatacctttaaaatatgaggttaagctgactgttcatgggttgtaacccaacttcatttgtgtatggatc aaatgatgaaaatgagcctgaaacgtgcatggtggagaaaatgaactttaactttccatgttatcaacatggcaatagta tggctcccaatgttagtgtaggaaataatggtaccaaattctttagcccccaaactgataagctgttcaacattttggat gtccagactactactggagaatgccactttgaaaattatcaaagagtgtgtgcattagagcagcaaaagagtgcaatgc attttagaaatggatgagacttcagcactcaagtttgaaataagagcaacaggttttccagagccaaatccaagagtaat tgaactaaacaaggatgagaatgttgcgcatgttctactggaaggactacatcatcaaagacccaaacgttatttcacca tttaaaagacaatacaaatctatcctacaagaagaaaacagaagagacagttggagttatatcaacagtaaaagcaatga accgagagcgcatggcttgggaagcgaggcgcgaacccgggccccgaagccgccgtccgggagacggtgatgctgttgct gtgcctgggggtcccgaccggccgccctacaacgtggacactgagagcgctgctttaccagggcccccacaacacgc tgtteggetacteggtegtgetgeacagecaeggggegaacegatggeteetagtgggtgegeeeactgeeaactggete gccaacgcttcagtgatcaatcccggggcgatttacagatgcaggatcggaaagaatcccggccagacgtgcgaacagct tttccagacagccaggagaaaatggatccatcgtgacttgtgggcatagatggaaaaatatattttacataaagaatgaa aataagctccccactggtggttgctatggagtgcccctgatttacgaacagaactgagtaaaagaatagctccgtgtta 25 tcaagattatgtgaaaaaattttggagaaaattttgcatcatgtcaagctggaatatccagtttttacacaaaggatttaa tttttagacaaacaaaatcaagtaaaatttggaagttatttaggatattcagtcggagctggtcattttcggagccagca gtgctttttcggtctgattctgctgtcttgctaaggacaagacctgtagtaattgttgacgcttctttaagccaccctgag taagggcaaggaagttccaggttacattgttttgttttataacatgagtttggatgtgaacagaaaggcagagtctccac caagattctatttctcttctaatggaacttctgacgtgattacaggaagcatacaggtgtccagcagagaagctaactgt agaacacatcaagcatttatgcggaaagatgtgcgggacatcctcaccccaattcagattgaagctgcttaccaccttgg taatgaaaaaaacaataaactttgcaaggttttgtgcccatgaaaattgttctgctgatttacaggtttctgcaaagatt gggtttttgaagccccatgaaaataaaacatatcttgctgttgggagtatgaagacattgatgttgaatgtgtccttgtt taatgetggagatgatgetatgaaaegaetetaeatgteaaaetaeeegtgggtetttattteattaagattttagage cacagtgcatgctacctgtgaaaatgaagaggaaatggacaatctaaagcacagcagagtgactgtagcaatacctttaa aatatgaggttaagctgactgttcatgggtttgtaaacccaacttcatttgtgtatggatcaaatgatgaaaatgagcct gaaacgtgcatggtggagaaaatgaacttaactttccatgttatcaacactggcaatagtatggctcccaatgttagtgt ggaaataatggtaccaaattcttttagcccccaaactgataagctgttcaacattttggatgtccagactactactggg ctatcctacaagaagaaaacagaagagacagttggagttatatcaacagtaaaagcaatgatgattaaggacttctttca aattgagagaatggaaaacagactcaggttgtagtaaagaaatttaaaagacactgtttacaagaaaaaatgaattttgt ttggacttettttactcatgatcttgtgacatattatgtettcatgeaaggggaaaateteagcaatgattactetttga gatagaagaactgcaaaggtaataatacagccaaagataatctctcagcttttaaatgggtagagaaacactaaagcatt caatttattcaagaaaagtaagcccttgaagatatcttgaaatgaaagtataactgagttaaattatatactggagaagtct acatetttgataettgtteaaaatatgttetttaaaaatatetttttagagagetgtteeeaaattttetaaegagtg ctatgaatattatagtattataggccaaactggcaaacttcagactgaacatgtacactggtttgagcttagtgaaatga cttccggaatct (SEQ ID NO:12184) cacttttttttttttggaattcaaaaaaagaaggacagtatttggggcacagatcttttggtgttctatacatttttttaaa gtttcattttacatttgtgtgtgtgtgtgtgtgtgtgtgagacagtcttgctctgttgcccaggctggagtgcagtgg cataatcattggctcactgtagcctcaaagtcctgggcccaagcgatcttcccacctcagccacccaaaatgctggggtt acaggtttatgccactctgtctgacctgaaagttttgggtttactttcccttcttctctttgctgaagtcagagatgat tgcgtttttgggggttcctggagtatcaatcatggatcaagaaactgtaggcaatgttgtcctgtttggccatcgtcaccct catcagcgtggtccagaatggattctttgcccataaagtggagcacgaaagcaggacccagaatgggaggagcttccaga ggaccggaacacttgcctttgagcgggtctacactgccaaccagaactgtgtagatgcgtaccccactttcctcgctgtg

ctttgtcggttacctaggagagagagagagcaccctggctacatatttgggaaacgcatcatactcttcctgttcctcatgtccgttgccggtgcatattcaactattacctcatctttttcggaagtgactttgaaaactacataaagacgatc tccaccaccatctcccctctacttctcatttcctaactctctgctgaatatggggttggt (SEQ ID NO:12186) atgccctcctacacggtcaccgtggccactggcagccagtggttcgccggcactgacgactacatctacctcagcctcgtgggctcggcgggctgcagcgagaagcacctgctggacaagcccttctacaacgacttcgagcgtggcgggtggattcat gtgagattcaccattgcaatcaacaccaaggcccgtgagcagctcatctgcgagtgtggcctctttgacaaggccaacgc cacaggggggggtggcacgtgcagatggtgcagagggccatgaaggacctgacctatgcctccctgtgctttcccgagg ccatcaaggcccggggcatggagagcaaagaagacatcccctactacttctaccgggacgacgggctcctggtgtgggaa gccatcaggacgttcacggccgaggtggtagacatctactacgagggcgaccaggtggtggaggaggacccggagctgca ggacttegtgaacgatgtetaegtgtaeggcatgegggcegeaagteeteaggetteeceaagteggteaagageeggg 25 agcagctgtcggagtacctgaccgtggtgatcttcaccgcctccgcccagcacgccgcggtcaacttcggccagtacgac tggtgctcctggatccccaatgcgccccaaccatgcgagccccgccaccgactgccaagggcgtggtgaccattgagca gategtggacaegetgeeegacegegeegeteetgetggcatetgggtgeagtgtgggegetgageeagtteeaggaaa aacctcgaggccattgtcagcgtgattgctgagcgcaacaagaagaagcagctgccatattactacttgtccccagaccggattccgaacagtgtggccatc (SEQ ID NO:12187) gggcccggcgctcgctgctcccgcggcccgcgccatgccctcctacacggtcaccgtggccactggcagccagtggttcg ccggcactgacgactacatctacctcagcctcgtgggctcggcgggctgcagcgagaagcacctgctggacaagcccttc tggactttgttctgaattactccaaagcgatggagaacctgttcatcaaccgcttcatgcacatgttccagtcttcttgg aatgacttegeegactttgagaaaatetttgteaagateageaacactatttetgagegggteatgaateactggeagga agacctgatgtttggctaccagttcctgaatggctgcaaccctgtgttgatccggcgctgcacagagctgcccgagaagc teccggtgaccacggagatggtagagtgcagcctggagcggcagctcagcttggagcaggaggtccagcaagggaacatt ttcatcgtggactttgagctgctggatggcatcgatgccaacaaaacagaccctgcacactccagttcctggccgctcc catctgcttgctgtataagaacctggccaacaagattgtccccattgccatccagctcaaccaaatcccgggagatgaga accetattttectecetteggatgeaaatacgaetggettttggeeaaaatetgggtgegtteeagtgaetteeaegte tgtgcaccccattttcaagctgctggtggcacacgtgagattcaccattgcaatcaacaccaaggcccgtgagcagctca tetgegagtgtggcetetttgacaaggccaacgccacagggggcggtgggcacgtgcagatggtgcagagggccatgaag gacctgacctatgcctccctgtgctttcccgaggccatcaaggcccggggcatggagagcaaagaagacatcccctacta cttctaccgggacgacgggctcctggtgtgggaagccatcaggacgttcacggccgaggtggtagacatctactacgagg gcgaccaggtggtggaggaggagccggagctgcaggacttcgtgaacgatgtctacgtgtacggcatgcggggccgcaag gcgaccaggtggtggaggaggaccagagctgaggacttcgtgaacgatgtctacgtgtacggatgactgtcgaggccgcaag tcctcaggcttccccaagtcggtcaagagccgggagcagctgttcgaggtacctgacgtggtgatcttcacggcctccgc 'ccagcacgccgcggtcaacttcggccagttggtgctcctggatccccaatgcgccgccaaccatgcgagccccgc caccgactgccaagggcgtggtgaccattgagcagatcgtggacacgctgcccgaccgcggccgctcctgctggcatctg ggtgcagtgtggggcgctgagccagttccaggaaaacgagctgttcctgggcatgtacccagaagagcattttatcgagaa gcctgtgaaggaagccatggcccgattccgcaagaacctgagccattgtcagcgtgattgctgagcgcaacaagaaga agcagctgccatattactacttgtccccagaccggattccgaacagtgtggccatctgagcacactgccagtctcactgt 55 ttcctccgaggccagtacctttccatttattctttgatcttcagggaactgcatagattgatcaaagtgtaaacaccata gggacccattctacacagagcaggactgcacagcgtcctgtccacacccagctcagcatttccacaccaagcagcaacag 60 čaaatcacgaccactgatagatgtctattcttgttggagacatggggatgattattttctgttctatttgtgcttagtcca atttaaaaaaaaaaaaaaa (SEQ ID NO:12188) gggcccggcgctcgctgctcccgcggcccgcgccatgccctcctacacggtcaccgtggccactggcagccagtggttcg ccggcactgacgactacatctacctcagcctcgtgggctcggcgggctgcagcgagaagcacctgctggacaagcccttc tacaacgaettegagegtggegegggtggatteataegaegtgaetgtggaegaggaaetgggegagateeagetggteag aatcgagaagcgcaagtactggctgaatgacgactggtacctgaagtacatcacgctgaagacgcccacggggactaca tcgagttcccctgctaccgctggatcaccggcgatgtcgaggttgtcctgagggatggacgcgaaagttggcccgagat ccctggcttccccttgagcatcgatgccaaatgccacaaggatttaccccgtgatatccagtttgatagtgaaaaaggag tggactttgttctgaattactccaaagcgatggagaacctgttcatcaaccgcttcatgcacatgttccagtcttcttgg catctgctgctgtataagaacctggccaacaagattgtccccattgccatccagctcaaccaaatcccgggagatgaga gcgaccaggtggtggaggaggacccggagctgcaggacttcgtgaacgatgtctacgtgtacggcatgcggggccgcaag

tectcaggettececaagteggteaagageegggageagetgteggagtacetgaeegtggtgatetteaeegeeteege ccagcacgccgcggtcaacttcggccagtacgactggtgctcctggatccccaatgcgcccccaaccatgcgagcccgc caccgactgccaagggcgtggtgaccattgagcagatcgtggacaegctgcccgaccgcggccgctcctgctggcatctg ggtgcagtgtggggcgctgagccagttccaggaaaacgagctgttcctgggcatgtacccagaagagcattttatcgagaa gcctgtgaaggaagccatggcccgattccgcaagaacctcgaggccattgtcagcgtgattgctgagcgcaacaagaaga agcagctgccatattactacttgtccccagaccggattccgaacagtgtggccatctgagcacactgccagtctcactgt ttectcogaggccagtacctttccatttattctttgatcttcagggaactgcatagattgatcaaagtgtaaacaccata gggacccattctacacagagcaggactgcacagcgtcctgtccacacccagctcagcatttccacaccaagcagcaacag caaatcacgaccactgatagatgtctattcttgttggagacatgggatgattattttctgttctatttgtgcttagtcca attt (SEQ ID NO:12189) cagtggttcgccggcactgacgactacatctacctcagcctcgtgggctcggcgggctgcagcgagaagcacctgctgga caagcccttctacaacgacttcgagcgtggcgcggtggattcatacgacgtgactgtggacgaggaactgggcgagatcc agctggtcagaatcgagaagcgcaagtactggctgaatgacgactggtacctgaagtacatcacgctgaagacgcccac ggggactacatcgagttcccctgctaccgctggatcaccggcgatgtcgaggttgtcctgagggatggacgcgcaaagtt ggcccgagatgaccaaattcacattctcaagcaacaccgacgtaaagaactggaaacacggcaaaaaacaatatcgatgga tggagtggaaccctggcttccccttgagcatcgatgccaaatgccacaaggatttaccccgtgatatccagtttgatagt gaaaaaggagtggactttgttctgaattactccaaagcgatggagaacctgttcatcaaccgcttcatgcacatgttcca gtottettggaatgacttcgccgactttgagaaaatctttgtcaagatcagcaacactatttctgagcgggtcatgaatcactgcagcaggaagacctgatgtttggctaccagttcctgaatggcagcagcagcagctgcacagagctg cccgagaagctcccggtgaccacggagatggtagagtgcagcctggagcggcagctcagcttggagcaggaggtccagca agggaacattttcatcgtggactttgagctgctggatggcatcgatgccaacaaaaacagacccctgcacactccagttcc tggccgctcccatctgcttgctgtataagaacctggccaacaagattgtccccattgccatccagctcaaccaaatcccg qqaqatqaqaaccctattttcctcccttcgqatgcaaaatacgactggcttttggccaaaatctgggtgcgttccagtga cttccacgtccaccagaccatcacccaccttctgcgaacacatctggtgtctgaggtttttggcattgcaatgtaccgcc agctgcctgctgtgcaccccattttcaagctgctggtggcacacgtgagattcaccattgcaatcaacaacgacccgt 30 ggccatgaaggacctgacctatgcctccctgtgctttcccgaggccatcaaggcccggggcatggagagcaaagaagaca tcccctactacttctaccgggacgacgggctcctggtgtgggaagccatcaggacgttcacggccgaggtggtagacatc tactacgagggcgaccaggtggtggaggaggacccggagctgcaggacttcgtgaacgatgtetacgtgtacggcatgcg gggccgcaagtcctcaggcttccccaagtcggtcaagagccgggagcagctgtcggagtacctgaccgtggtgatcttca ccgccLccgcccagcacgccgcggtcaacttcggccagtacgactggtgctcctggatccccaatgcgccccaaccatg cgagccccgccaccgactgccaagggcgtggtgaccattgagcagatcgtggacacgctgcccgaccgcgccgctcctg ctggcatctgggtgcagtgtgggcgctgagccagttccaggaaaacgagctgttcctgggcatgtacccagaagagcatt ttatcgagaagcctgtgaaggaagccatggcccgattccgcaagaacctcgaggccattgtcagcgtgattgctgagcgc aacaagaagaagcagctgccatattactacttgtccccagaccggattccgaacagtgtggccatctgagcacactgcca agtcacatctcttcctccgaggccagtacctttcattattctttgatctcagggaactgcagattgatcaaagg gtaaacaccatagggaccattctacacagagcaggactgcacaggcgtcctgtccacacccagctcagcatttccacac caagcagcaacagcaaatcacgaccactgatagatgtctattcttgttggagacatgggatgattattttctgttctatt aataaatcagttcattt (SEQ ID NO:12190) cagetytecetececactyccatttattecttectteatteaaacettatytygetyetaettaccytyttaaytytt cactttttttcttggaattcaaaaaaagaaggacagtatttggggcacagatctttttggtgttctatacatttttttaaa cataatcattggctcactgtagcctcaaagtcctgggcccaagcgatcttcccacctcagccacccaaaatgctggggtt 50 tcagggaagtttcccatgacaaggaaatgtaggagagtgtgctggctttgcgtgctcctctgccaagccctgcttctcct cactgtgtaattgtgccggggatcttcagaaattgtaatgatgaaagagtgcaagctctcacttccccttcctgtacagg gcaggttgtgcagctggaggcagagcagtcctctctggggagcctgaagcaaacatggatcaagaaactgtaggcaatgt tgtcctgttggccatcgtcaccctcatcagcgtggtccagaatggtaaggaaagcccttcactcagggaagaacagaagg ggagattttetttgatggttgtttggaagtcaggettaaacaattgtgtetgtgtgtgtgcgcatgcacaacacttttacc ttatctttattttcttcttttatttgaatgtatagggttgtgtgtatttctgtgtaaatttggggttttcctcctctta 60 atgggaggagcttccagaggaccggaacacttgcctttgagcgggtctacactgccaacagaactgtgtagatgcgtac cccactttcctcgctgtgctctggtctgcggggctactttgcagccaagttcctgctgcgtttgctggactgatgtactt qtttqtgcggcaaaagtactttgtcggttacctaggaqaqaqaqaacgcagagcacccctggctacatatttgggaaacgca tcatactcttcctgttcctcatgtccgttgctggcatattcaactattacctcatcttcttttcggaagtgactttgaa 65 aactacataaagacgatctccaccaccatctcccctctacttctcatttcctaactctctgctgaatatggggttggtat gccctcctacacggtcaccgtggccactggcagccagtggttcgccggcactgacgactacatctacctcagcctcgtgg gctcggcgggctgcagcgagaagcacctgctggacaagcccttctacaacgacttcgagcgtggcgcggtggattcatac gacgtgactgtggacgaggaactgggcgagatccagctggtcagaatcgagaagcgcaagtactggctgaatgacgactg gtacctgaagtacatcacgctgaagacgccccacggggactacatcgagttcccctgctaccgctggatcaccggcgatg 70 tcgaggttgtcctgagggatggacgcgcaaagttggcccgagatgaccaaattcacattctcaagcaacaccgacgtaaa gaactggaaacacggcaaaaacaatatcgatggatggaagtggaaccctggcttccccttgagcatcgatgccaaatgcca caaggatttaccccgtgatatccagtttgatagtgaaaaaggagtggactttgttctgaattactccaaagcgatggaga acctitteatcaaccgcttcatgcacatgttccagtcttcttggaatgacttcgccgactttgagaaaatctttgtcaag atcagcaacactattictgagcgggtcatgaatcactggcaggaagacctgatgtttggctaccagttcctgaatggctg 75 caaccetgtgttgatccggcgctgcacagagctgcccgagaagctcccggtgaccacggagatggtagagtgcagcctgg agcggcagctcagcttggagcaggaggtccagcaagggaacattttcatcgtggacttttgagctgctggattggcatcgat gccaacaaaacagacccctgcacactccagttcctggccgctcccatctgcttgtataagaacctggccaacaagat tgtccccattgccatccagctcaaccaaatcccgggagatgagaaccctattttcctcccttcggatgcaaaatacgact gagattcaccattgcaatcaacaccaaggcccgtgagcagctcatctgcgagtgtggcgctctttgacaaggccaacgcca cagggggcggtgggcacgtgcagatggtgcagagggccatgaaggacctgacctatgcctccctgtgacaaggccaacgcca

catcaggacgttcacggccgaggtggtagacatctactacgagggcgaccaggtggtggaggagcccggagctgcagg acttcgtgaacgatgtctacgtgtacggcatgcggggccgcaagtcctcaggcttccccaagtcggtcaagagccgggag cagetgteggagtacetgaecgtggtgatetteaecgcetecgceagcaegeeggteaactteggceagtacgaetg gtgctcctggatccccaatgcgcccccaaccatgcgagcccgccaccgactgccaagggcgtggtgaccattgagcaga tegtggacaegetgecegacegeggeegeteetgetggcatctgggtgcagtgtggggegetgagecagttccaggaaaac cctcgaggccattgtcagcgtgattgctgagcgcaacaagaagaagcagctgccatattactacttgtccccagaccgga ttccgaacagtgtggccatcgggcccggcgctcgctgctcccgcggcccgcgccatgccctcctacacggtcaccgtggc cactggcagccagtggttcgccggcactgacgactacatctacctcagcctcgtgggctcggcgggctgcagcgagaagc acctgctggacaagcccttctacaacgacttcgagcgtggcgcggtggattcatacgacgtgactgtggacgaggaactg ggcgagatccagctggtcagaatcgagaagcgcaagtactggctgaatgacgactggtacctgaagtacatcacgctgaa gacgccccacggggactacatogagttcccctgctaccgctggatcaccggcgatgtcgaggttgtcctgagggatggac gcgcaaagttggcccgagatgaccaaattcacattctcaagcaacaccgactgaaagaactggaaacacggcaaaaacaa tatogatggatggagtggaacootggottoccottgagcatogatgccaaatgccacaaggatttaccccgtgatatcca gtttgatagtgaaaaaggagtggactttgttctgaattactccaaagcgatggagaacctgttcatcaaccgcttcatgc acatgttccagtcttcttggaatgacttcgccgactttgagaaaatctttgtcaagatcagcaacactatttctgagcgggtcatgaatcactggcaggaagacctgatgtttggctaccagttcctgaatggctgcaaccctgtgttgatccggcgctg cacagagetgecegagaageteeeggtgaceaeggagatggtagagtgeageetggageggeageteagettggageagg 20 aggtccagcaagggaacattttcatcgtggactttgagctgctggatggcatcgatgccaacaacaacagacccctgcaca ctccagttcctggccgctcccatctgcttgctgtataagaacctggccaacaagattgtccccattgccatccagctcaa ccaaatcccgggagatgagaaccctattttcctcccttcggatgcaaaatacgactggcttttggccaaaatctgggtgc gttccagtgacttccacgtccaccagaccatcaccaccttctgcgaacacatctggtgtctgaggtttttggcattgca atgtaccgccagctgcctgctgtgcaccccattttcaagctgctggtggcacacgtgagattcaccattgcaatcaacac 25 caaggcccgtgagcagctcatctgcgagtgtggcctctttgacaaggccaacgccacagggggcggtgggcacgtgcaga tggtgcagagggccatgaaggacctgacctatgcctccctgtgctttcccgaggccatcaaggcccggggcatggagagc aaagaagacatcccctactacttctaccgggacgacgggctcctggtgtgggaagccatcaggacgttcacggccgaggt ggtagacatetactacgagggcgaccaggtggtggaggaggacccggagctgcaggacttcgtgaacgatgtctacgtgt acggcatgcggggccgcaagtcctcaggcttccccaagtcggtcaagagccgggagcagctgtcggagtacctgaccgtg 30 gtgatetteaeegeeteegeeeageaegeegeggteaaetteggeeagtaegaetggtgeteetggateeeeaatgegee cccaaccatgcgagooccgccaccgactgccaagggcgtggtgaccattgagcagatcgtggacacgctgcccgaccgcg gccgctcctgctggcatctgggtgcagtgtgggcgctgagccagttccaggaaaacgagctgttcctgggcatgtaccca gaagagcattttatcgagaagcctgtgaaggaagccatggcccgattccgcaagaacctcgaggccattgtcagcgtgat tgctgagcgcaacaagaagaagcagctgccatattactacttgtccccagaccggattccgaacagtgtggccatctgag tccacaccaagcagcaacagcaaatcacgaccactgatagatgtctattcttgttggagacatgggatgattattttctg 40 tectacacggtcaccgtggccactggcagccagtggttcgccggcactgacgactacatctacctcagcctcgtgggctc ggcgggctgcagcgagaagcacctgctggacaagcccttctacaacgacttcgagcgtggcgcggtggattcatacgacg tgactgtggacgaggaactgggcgagatccagctggtcagaatcgagaagcgcaagtactggctgaatgacgactggtac ctgaagtacatcacgctgaagacgccccacggggactacatcgagttcccctgctaccgctggatcaccggcgatgtcga 45 ggttgtcctgagggatggacgcgaaagttggccgagatgaccaaattcacattctcaagcaacaccgacgtaaagaac tggaaacacggcaaaaacaatatcgatggatggagtggaaccctggcttccccttgagcatcgatgccaaatgccacaag gatttaccccgtgatatccagtttgatagtgaaaaaggagtggactttgttctgaattactccaaagcgatggagaacct gttcatcaaccgcttcatgcacatgttccagtcttcttggaatgacttcgccgactttgagaaaatctttgtcaagatca gcaacactatttetgagegggteatgaateaetggeaggaagaeetgatgtttggetaeeagtteetgaatggetgeaae cctgtgttgatccggcgctgcacagagctgcccgagaagctcccggtgaccacggagatggtagagtgcagcctggagcg gcagctcagcttggagcaggaggtccagcaagggaacattttcatcgtggactttgagctgctggatggcatcgatgcca 55 ttcaccattgcaatcaacaccaaggcccgtgagcagctcatctgcgagtgtggcctctttgacaaggccaacgccacagg qqqcqqtqqqcacqtqcaqatqqtqcaqaqqqccatqaaqqacctqacctatqcctccctqtqctttcccqaqqccatca aggcccggggcatggagagcaaagaagacatcccctactacttctaccgggacgacgggctcctggtgtgggaagccatc aggacgttcacggccgaggtggtagacatctactacgagggcgaccaggtggtggaggaggacccggagctgcaggactt 60 cgtgaacgatgtctacgtgtacggcatgcggggcgcaagtcctcaggcttcccaagtcggtcaagagccgqgagcagc tgtcggagtacctgaccgtggtgatcttcaccgcctccgcccagcacgccgggtcaacttcggccagtacgactggtgc tcctggatccccaatgcgccccaaccatgcgagccccgccaccgactgccaagggcgtggtgaccattgagcagatcgt ggacacgetgeeegacegegeegeteetgetggeatetggtgagtgeagtgtgggegetgageeagtteeaggaaaaegage 65 gaggccattgtcagcgtgattgctgagcgcaacaagaagaagcagctgccatattactacttgtccccagaccggattcc ctggcaggtgtctggccaggcctcttggcagtcacatctcttcctccgaggccagtacctttccatttattctttgatct tcagggaactgcatagattgatcaaagtgtaaacaccatagggacccattctacacagagcaggactgcacagcgtcctg tccacacccageteageatttccacaccaageageaacageaaateaegaeeaetgatagatgtetattettgttggaga catgggatgattattttctgttctatttgtgcttagtccaattccttgcacatagtaggtacccaattcaattactattg cccgcgccatgccctcctacacggtcaccgtggccactggcagccagtggttcgccggcactgacgactacatctacctcagcctcgtgggctcggcgggctgcagcagcagctgcagctggagagcacctgctggacaagcccttctacaacgacttcgagcgtggcgcgggt ggattcatacgacgtgactgtggacgaggaactgggcgagatccagctggtcagaatcgagaagcgcaagtactggctgaatgactggtacctgaagtacatcacgctgaagacgcccacggggactacatcgagttcccctgctaccgctggatc 75 accggcgatgtcgaggttgtcctgagggatggacgcgcaaagttggcccgagatgaccaaattcacattctcaagcaaca ccaaatgccacaaggatttaccccgtgatatccagtttgatagtgaaaaaggagtggactttgttctgaattactccaag gcgatggagaacctgttcatcaaccgcttcatgcacatgttccagtcttcttggaatgacttcgccgactttgagaaaat ctttgtcaagatcagcaacactatttctgagcgggtcatgaatcactggcaggaagacctgatgtttggctaccaqttcc tgaatggctgcaaccctgtgttgatccggcgctgcacagagctgcccgagaagctcccggtgaccacggagatggtagag tgcagcctggagcggcagctcagcttggagcaggaggtccagcaagggaacattttcatcgtggactttgagctgctgga

ccaacaagattgtccccattgccatccagctcaaccaaatcccgggagatgagaaccctattttcctcccttcggatgca tggcacacgtgagattcaccattgcaatcaacacaaggcccgtgagcagctcatctgcgagtgtggcctctttgacaag gccaacgccacaggggggggggggcacgtgcagatggtgcagagggccatgaaggacctgacctatgcctccctgtgctt tcccgaggccatcaaggcccggggcatggagagcaaagaagacatcccctactacttctaccgggacgacgggctcctgg tgtgggaagccatcaggacgttcacggccgaggtggtagacatctactacgagggcgaccaggtggtggaggacccg gagetgeaggaettegtgaacgatgtetaegtgtaeggeatgeggggeegeaagteeteaggetteeceaagteggteaa gageegggageagetgteggagtaeetgaeegtggtgatetteaeegeeteegeeeageaegeegeggteaaetteggee gagccgggagcagctgtcggagtacctgaccgtggtgatcttcaccgcctccgcccagcacyccggccaacttcggccagctgcagctgtgaccagcttcggaccagctgcgagaccccaaccatgggcgagaccccgactgcacagggcggtggtgaccagttccagagagaccggatgtggagacagttccagagagacagctgtgaagacagttccagaaaacagagagatgttccagaagaaaccatggaaaaccatggaccagtttcagagaaaaccatggaagaccattttatcagagaagacctgtgaaggccagttgccagattccagaagaacctcgaagaccagttgccagattccaaacatctgagaagaccagatgccagatggaagaccagattccagaccagacttccagcagacctctgagaagaccagataccttcca tctattcttgttggagacatgggatgattattttctgttctatttgtgcttagtccaattccttgcacatagtaggtacc ggcacgaggctggctgagccatgatgctgctgccagaacccctgcagagggcctggtttcaggagactcagagtcctctg tgaaaaaagcccttggagaggcgccccagcagggctgcacttggctcctgtgaggaaggggctcagggtctgggcccctcc gcctgggccgggctgggagccaggcgggcggctggggctgcagcaatggaccgtgagctggcccagcccgcgtccgtgctg catectgggcaatgtgctggtgtgctgggccgtgtggetcaacagcaacetgcagaacgtcaecaactaetttgtggtgt cactggcggcggccgacatcgcagtgggtgtgctcgccatcccctttgccatcaccatcagcaccgggttctgcgctgcc tgccacggctgcctcttcattgcctgcttcgtcctggtcctcacgcagagctccatcttcagtctcctggccatcgccat tgaccgctacattgccatccgcatcccgctccggtacaatggcttggtgaccggcacgagggctaagggcatcattgcca tctgctgggtgctgtcgtttgccatcggcctgactcccatgctaggttggaacaactgcggtcagccaaaggagggcaag 30 aaccactcccagggctgcggggagggccaagtggcctgtctctttgaggatgtggtccccatgaactacatggtgtactt caacttetttgcctgtgtgctggtgcccctgctgctcatgctgggtgtctatttgcggatcttcctggcggcgcgacgac ttcaaggcagctggcaccagtgcccgggtcttggcagctcatggcagtgacggagagcaggtcagctccgtctcaacgg ccacccgccaggagtgtgggccaacggcagtgctocccaccctgagcggaggcccaatggctatgccctggggctggtga gtggaggagtgcccaagagtcccaggggaacacgggcctcccagacgtggagctccttagccatgagctcaagggagtg tgcccagagccccctggcctagatgaccccctggcccaggatggagcaggagtgtcctgatgattcatggagtttgccc 40 ctgagggcagccggttcctactttggactgagaagggagcccaggctggagcatgaggcccagcaagaagggct tgggttetgaggaageagatgttteatgetgtgaggeettgeaceaggtgggggeeacageaceageatetttgetg ggcagggcccagccctccactgcagaagcatctggaagcaccaccttgtctccacagagcagcttgggcacagcagactg geetggeeetgagaetggggagtggeteeaacageeteetgeeacccacacaceeteteeetagaeteteetagggtte aggagctgctggggcccagaggtgacatttgacttttttccaggaaaaatgtaagtgtgaggaaaccctttttattttatt acctttcactctctggctgctgggtctgccgtcggtcctgctgctaacctggcaccagagcctctgccggggagcctcag gcagtcctctcctgctgtcacagctgccatccacttctcagtcccagggccatctcttggagtgacaaagctgggatcaa 55 tgttgcccaagetggtettgcacttetgggetgaageaateetetegeettggeeteccagageettgggattacagaat catgggtgagaggtggcatggcccctagaggtcatttggggtccagctgcctcaccgtatcaatgaggaaactgaggcc agaaaagaaaagcatttttgcccagagtccttagaaaaaaacagaccacatctgatccttggccctgagtccagagtgg gaggcaccgtgacaacaatgcgcagagcagggaatgcagggagccatggatagtgctggggtgcctcaggaaccctgaag ctgggctgagccatgatgctgctgccagaacccctgcagagggcctggtttcaggagactcagagtcctctgtgaaaaag cccttggagagagccccagcagggctgcacttggctcctgtgaggaagggctcaggggtctgggcccctccgctggg cgggctgggagccaggcgggcggctgggctgcagcaatggaccgtgagctggcccagcccgcgtccgtgctgagcctgcc tgtcgtctgtggcatgcccatcatgggctcctcggtgtacatcacggtggagctggccattgctgtctggccatcctgg gcaatgtgctggtgtgctgggccgtgtggctcaacagcaacctgcagaacgtcaccaactactttgtgggtgtcactggcg ctgcctcttcattgcctgcttcgtcctggtcctcacgcagagctccatcttcagtctcctggccatcgccattgaccgct acattgccatccgcatcccggtacaatggcttggtgaccggcacgagggctaagggcatcattgccatctgctgggtgctgtcgtttgccatcggcctgaccccctgctaggttggaacaactgcggtcagccaaaggagggcaagaaccactc agctggaccagtgcccgggtcttggcagctcatggcagtgacggagagccaatggctagcctccgtctcaacggcacccgccaggagtgtggggccaacggccagtgtggggcagtgctccccgccaggagtgtggggccaacggcagtggtgagtggagggccaatggcctagtggtgagtggaggg ggaaggagatetttatettetetggttggettgaecagteacgttgggagaagagagagagtgecaggagaecetgaggge agccggttcctactttggactgagagaagggagcccaggctggagcatgaggagccagcaagaagaggcttgggttct gaggaagcagatgtttcatgctgtgaggccttgcaccaggtgggggccacagcagcagcagcatctttctgggcagg cccagccctccactgcagaagcatctggaagcaccaccttgtctccacagagcagcttgggcacagcagactggcctggc cctgagactggggagtggctccaacagcctcctgccaccacacaccactctccctagagttcaggagct

```
actetetggetgetgetgtetgeegteggteetgetgetaacetggeageagegeetetgeeeggggageeteaggeagte
    ctctcctgctgtcacagctgccatccacttctcagtcccagggccatctcttggagtgacaaagctgggatcaaggacag
    ggagttgtaacagagcagtgccagagcatgggcccaggtcccaggggagaggttgggcctggcaggccactggcatgtgc
    tgagtagcgcagagctacccagtgagaggccttgtctaactgcctttccttctaaagggaatgtttttttctgagataaa
ataaaaacgagccacatcgtgttttaag (SEQ ID NO:12193)
    ggcacgagcccagaaacaaagacttcacggacaaagtcccttggaaccagagagaagccgggatggaaactccaaacac
    acagaggactatgacacgaccacagagtttgactatggggatgcaactccgtgccagaaggtgaacgagagggcctttgg
    ggcccaactgctgccccctctgtactccttggtatttgtcattggcctggttggaaacatcctggtggtcctggtccttg
10
    tgcaatacaagaggctaaaaaacatgaccagcatctacctcctgaacctggccatttctgacctgctcttcctgttcacgcttccctcttcctgttcacgcttccctccttcttggatcgactacaagttgaaggatgactgggtttttggtgatgccatgtgtaagatcctctctgggtttta
    ttacacaggcttgtacagcgagatctttttcatcatcctgctgacgattgacaggtacctggccatcgtccacgccgtgt
ttgccttgcgggcacggaccgtcacttttggtgtcatcaccagcatcatcatttgggccctggccatcttggcttccatg
    agagyattataaagattotgotaagacgaccaaatgagaagaaatccaaagctgtccgtttgatttttttotatcatgatg
atcttttttctcttttggaccccctacaatttgactatacttatttctgttttccaagacttcctgttcacctatgatg
    tgagcagagcagacattttggaccttgcctgtgcaagtgacggagttgatcgctacacgcactgctgtgtcaacccagtga
tctacgccttcgttggtgagaggttccggaagtacctgcggcagttgttccacaggcgtgtggctgtgcacctggttaaa
    tggeteceetteeteteegtggacaggetggagagggteagetecaeateteeeteeacaggggageatgaaetetetete
20
    tgggttctgactcagaccataggaggccaacccaaaataagcaggcgtgacctgccaggcacactgagccagcagcctgg
    ctctcccagccaggttctgactcttggcacagcatggagtcacagccacttgggatagaqagggaatgtaatggtggcct
    25
    ttgtcaacaaagtcacccacttcccactattgcttgcacaaaccaattaaacccagtagtggtgactgtggggctccattc
    tcccactgccaagaacttggaaatagtgatttccacagtgactccactctgagtcccagagccaatcagtagccagcatc
    tgcctccccttcactcccaccgcaggatttgggctcttggaatcctggggaacatagaactcatgacggaagagttgaga
    aaaatcaaacaattcagggagtgggctaagcacgggccatatgaataacatggtgtgcttcttaaaatagccataaaggg
    gagggactcatcatttccatttacccttcttttctgactattttccagaatctctcttctttcagaatctc
    cttgggtaggagacaggcaggaggtcttcaattgtgtcacaattttcactgaggactcaagtgacctaagaagtaattgtgactgattgtcagagcagcttcacctactcaggagagtgcctacgcaatt
    tgacttgacagcttctagaagaaattagagcaacaggggtctcagcaggggtgtcttgggccaaacactgaaagcaggg
tgacttgacagcttctagaaagaaattagagcaacaggggtctcagcagggtgtctttgggccaaacactgaaagcaggc
aggcttaccctttcctcttctgccccttcaactttttcctgatgttcttacccacatccctcaccacaccacacccttt
    tgctctcggcactgacttagcagctgctcaagagctcactatgttggcttggattacactggtctcaccacatctccgg
    cagtttgtgggcaaacctcctgagcagccttgggtgatgaaacctttcatggtagcaggagaatgggactgtgaattctc
    aatcccctgtccccaccccttccttcttctctcagggccttaaagtctaggaggaggaagcacagcagc (SEQ ID NO:12195)
    tgggttcctatttctgctctcggcactgacttagcagctgctcaagagctcactatgttggcttggattacacggtctca
    gcaactgactgggcagcctttcaggaaagatgcagccactcctgcttctgctggcctttctcctacccactggggctgag
    gcaggtgagtgaccatccccaccctcagaggcctgacctcatcccatagattcttgagccaaattgccttggtatatcct
    aattetgtactgttgagcaagttatttgaatttgtgtttcctcatctataaaatgagaataatattaataeeggatettge
    55
    ccctctcctgcaccctctctcctgccgtccccatcttccagcctttctggagccaccaatctggtacccacattgcagqt
60
    tcagcaagcatagagctaagtgccaaatgcttccttccaggggagatcatcggaggccgggagagcaggcccactcccg
    cccctacatggcgtatcttcagatccagagtccagcaggtcagagcagatgtggagggttcctggtgcgagaagactttg
    gaacaggccagtgtaaatgaggaaggaaaggaggataagatcaaaaagagcaagaggaagagatggaagacacatattggg
    gctcaaaatataaactcaggctatttatcaacttaatctggggaagtaaacctgaaggcaagtaccaccctgtcatccct
    ageteagagetgetgagaaagaggataeagetgageeecagggeeeteeeateeeetegattetggttagetgeagtett
    geceteccegtgetgtetgcctaccetgcagagetggtggaccatagetectgcageccagacctacetettgcttttgc
    agcaatataaatgtcaccctgggcgcccacaatatccagagacgggaaaacacccagcaacaccatcactgcgcgcagagc
    catecgecaccetcaatataatcageggaccatecagaatgacatcatgttattgcaggtaccacctacctggccctctg
    gctccttcctagtgtgtccggggacaatggaggaggaagtgagggcaaggctccggggtggcgggggagggcatgggatg
    gtactgcaccagcgacccccgagccttggctggaggccccagctgagcgggaacgcctacattcttcctccagctgagca
    gtactgcaccagcgacccccqagccttggcttgagggccccagctgagcgggaacggctacattcttctctccagctgagca
gaagagtcagacggaatcgaaacgtaaacgtggaacccagtggctctggctaagagcccaggagggactgagacccgggaacgttgtg
actgtggccggctggggcagggtcagcagaggaggggaacagatcactccgagaggtgcagctgagagtgcagaggga
taggcagtgcctccgcatcttcggttcctacgacccccgaaggcagatttgtgtggggaccggcgggaacgggaacggaaggtc
ccttcaaggtaaggcatgggcattggccaacacaccccgggagagaggggcccgtgcagagccaggcagtgcgaacagat
tccatccccacagcctcagcctggcagccagaccagggtgggctggggattgttttccccatcaacctggtctctgggg
aataggagaagacccacaacacatacataggcaacattctcctggagaaggaggtaccttgacctagattgggttg
    ccacggcatcgtctcctatggaaagtcgtcaggggttcctccagaagtcttcaccaggggtctcaagtttcctgccctgga
```

tcacaggtctagaggctaagaagtctaagatcaagtcactagcagattcagtgtctaattagggcccattttctggttca cagacaaccatcctctccctgtgtccacatatggcaaaaggggcaagggaattctctgatgtctcttttacaagggacct agteteatteaaagageteagettttacgacetaateacateecaaaggeeccacetaatgecateacgacattggggat taggtctgggaaacatagggaaagagtgtctctacacaaaaattttaaaaattagccaggcatggtggcatgtgtctatag tcccagctacttgggaggctaaagtggaaggattagttgaacccacgaggttgaggcttcagtgaaccatgcactccagc 10 attagaaccaacctagatagatatttggaggggatggaaggtataattggatcc (SEQ ID NO:12196) agaagettttgeteetgggattaggttgatgggeetetaatgteaceagtgaaatgggatattagatatttteeagetag tgctctcggcactgacttagcagctgctcaagagctcactatgttggcttggattacactggtctcaccacatctccgg cagtttglgggcaaacctcctgagcagccttgggtgatgaaacctttcatggtagcaggagaatgggactgtgaattctc aatcccctgtccccaccccttccttcctctctcagggccttaaagtctaggaggaggaagcacagcagccttgctttgct ttetgeteteggeactgaettageagetgeteaagageteactatgttggettggattacaeggteteacceacatetee 25 ggcagtttgtgggcaaacctcctgagcagccttgggtgatgaaacctttcatggtagcaggagaatgggactgtgaattc ggcagcctttcaggaaagatgcagccactcctgcttctgctggcctttctcctacccactgggctgaggcaggtgagt accatecceaeceteagaggeetgaeeteateceatagattettgageeaaattgeettggtatateetaattetgtaet gttgagcaagttatttgaatttgtgtttcctcatctataaaatgagaataatattaataccgatcttgcagagttgccat gagagttaaataagttagagtatttaaatgtcttggaattgcccgcacactataagtgctataaaaacatgctttgtgta aataatttggcagcatgtgtcagaccctacctaggaggtaagaatacagcaataacagtaccatcagctcatgtctagat ttttaaacaccagtcccacgtggtcttgaattggactcagagggctctgggaagctccatgaggataaaagtataaggga acttcaggaacaatcctgtacttacagcaaagcattctcctcaatacctgaggctgaagctggccttgcctggaacaagg gttgttctccctcttttggagaggaggaggaggtgaggcctaggatggggaaaagggctcctttcaagacagtgtt tectgtagaaccetggageeeeeteeeaatetgetgeeeeatagaeteeaageeteageaeeateteeteeteetge tgtaaatgaggaggaaaggagataagatcaaaaagagcaagaggaagagatggaagacacatattggggctcaaaatataaactcaggctatttatcaacttaatctggggaagtaaacctgaaggcaagtaccaccctgtcatccctagctcagagct qctgaqaaagaggatacagctgagccccagggcctcccatccctcgattctggttagctgcagtcttgccctcccgt gtgtgtccggggacaatggaggaggaagtgagggcaaggctccggggtggcggggaggcatgggatgtgactgcacca gcgacccccgagccttggctggaggccccagctgagcgggaacgcctacattcttcctccagctgagcagaagagtcaga cggaatcgaaacgtgaacccagtggctctgcctagagcccaggagggactgagacccggggacgctgtgcactgtggccgg ctggggcagggtcagcatgaggagggaacagatacactccgagaggtgcagctgagagtgcagagggataggcagtgcc tecgeatetteggtteetacgaeceegaaggeagatttgtgtggggaecggegggaacggaaggetgeetteaaggta aggcatgggcattggccaacacaccccgggagagagggcccgtgcagagccaggcagtgcgaacagattccatccccac agcctcagcctggcagccagaccagggtgggctggggattgttttccccatcaacctggtctctgggggaataggaggaa gacccacaacacatacataggcaacattctcctggagaagggagaggtaccttgactcagattgggctggagacagtaat taaggcagagctgaagtccagcggaccgaaaagatccagaggcttggctcctgtaccccaccgatcttccatctcacacac tanggangangungangungananguntangung gaggctaagaagtctaagatcaagtcactagcagattcagtgtctaattagggcccattttctggttcacagacaaccat cctctccctgtgtccacatatggcaaaaggggcaagggaattctctgatgtctcttttacaagggacctagtctcattca aagageteagettttaegacetaateacateecaaaggeeecacetaatgeeateacgacattggggattaggtetggga aacatagggaaagagtgtctctacacaaaaattttaaaattagccaggcatggtggcatgtgtctatagtcccagctact tgggaggctaaagtggaaggattagttgaacccacgaggttgaggcttcagtgaaccatgcactccagcctgagcgacag cctagatagatatttggaggggatggaaggtataattggatcc (SEQ ID NO:12197) 70 ggcacgagcccagaaacaaagacttcacggacaaagtcccttggaaccagagagaagccgggatggaaactccaaacacc acagaggactatgacacgaccacagagtttgactatggggatgcaactccgtgccagaaggtgaacgagagggcctttgg tgcaatacaagaggetaaaaaacatgaceageatetacetectgaacetggeeatttetgacetgetetteetgtteacg cttcccttctggatcgactacaagttgaaggatgactgggtttttggtgatgccatgtgtaagatcctctctgggtttta ttacacaggcttgtacagcgagatctttttcatcatcctgctgacgattgacaggtacctggccatcgtccacgccgtgtttgccttgcgggcacggaccgtcacttttggtgtcatcaccagcatcatcattttgggccctggccatctttggcttccatg 75 ccaggcttatacttttccaaqacccaatgggaattcactacagcacctgcagccttcacttggcttccatg
ccaggcttatacttttccaaqacccaatgggaattcactcaccaccacctgcagccttcactttcctcacaagcctacg
agagtggaagctgtttcaggctctgaaactgaacctctttgggctggatttgcctttgttggtcatgatcatctgctaca
cagggattataaagattctgctaagacgaccaaatgagaagaaatccaaagctgtccgtttgatttttgtcatcatgatc
atctttttctctttttggaccccctacaatttgactatacttatttctgttttccaagacttcctgttcacccatgagtg tgagcagagcagacatttggacctggctgtgcaagtgacggaggtgatcgcctacacgcactgctgtgtcaacccagtga tctacgccttcgttggtgagaggttccggaagtacctgcggcagttgttccacaggcgtgtggctgtgcacctggttaaa

ctctcccagccaggttctgactcttggcacagcatggagtcacagccacttgggatagagagggaatgtaatggtggcct ttgtcaacaaagtcacccacttcccactattgcttgcacaaaccaattaaacccagtagtggtgactgtgggctccattc tcccactgccaagaacttggaaatagtgatttcacagtgactccactctgagtcccagagccaatcagtagccagcatc tgcctccccttcactcccaccgcaggatttgggctcttggaatcctggggaacatagaactcatgacggaagagttgaga cctaacgagaaatagaaatgggggaactactgctggcagtggaactaagaaagcccttaggaagaatttttatatccact aaaatcaaacaattcagggagtgggctaagcacgggccatatgaataacatggtgtgcttcttaaaatagccataaaggg gagggactcatcatttccatttacccttcttttctgactattttcagaatctctctttttcaggtgatatgt tggtagattotaatggctttattgcagogattaataacaggcaaaaggaagcagggttggtttoccittettttgttett gagagccccccccgagactgaaagttttggagattcaggggtcgggggaaagggttcaggaaatggtaattgagtttc caagggatagtgttacaagtggtatgggaggcccctatttctgatagtaatagagaatattttctttgttcattatgat agaacccgtgggataaagagggaaaataaatgttgggagtcccccaggggagaggagagaatccaacagggtgatttgct gatatttgtacgaggagggaaagaatttttcaaagacaaagttggagtgaggagtttttgtagagggaaccaggtggggt tteagacettattecaetateecagggeaateagatattaateatgtacaagttgaaateatgegtgteetttgaggtaa gaettacataateetatttageataacaggeececagatecagaaaggggagggtteegeeectateaetgaaggggate agggatatgaaagtggctcatggttgaccatcacgtttaacaggaatgggcaatcaggaggggtaggtccaattgtgaccaacagaccaaacttccattaatgcttgcggttcttgtggcaaagccagtctgtgagggtttgatgggcatggacttggtga gcagaagcagggggacaacgaatccagaagctgaggggaatggggttccaaaagagccgctgctgcctctgggagcacc catgtcagttagtttttccgtacgggactcagggttccagattattcgtttttaaatccttccattcacaatctttaaga agaagaaaaaagaagtctgccgctgaccacaagagctctatgccctgcccatcccacatacacacatcccacacttccacacttccacacttccacacttccacacttccacacttcacctgccccaatcccacacttcacctgcccccaattccctgccccaattcccttta aggetgageteecagggcaaqaetcaagaggetcagagtgagcagagaaaatcetegcagttaaettggettecaggaa 30 gtggccactggtgggcgttgtggccattcatgagcaccaaaccacacaaaaagaactttgtccctttcttgtcattttga aagactgtgaaactggagccaattctccatcatcacacaggaagctgagtacttcctacttggtcaggatcttgaaactt gaattcataaaacccagaaagccccagaaacaaagacttcacggacaaagtcccttggaaccagagtaagtgtcacttgt ggaattetttgagtaggetgggcaaatgtetaagtageecatggatgeateteeaaggeaattaataetgtageaataet gagaatggtggatttataaagctgggtgctcagatgaaatataggctttttttgctaaaaaggaagcttacttgaaggatt ggcttttggttactgattaagaaagtcagtcagtcataagggacaaaaggtgttttctgtggaaacctattcaataagaa attacttggcggggcgcagtggctcacggctgtaatcccagcactttgggagaccgaggcaggtggatcatgaggtcaag agatggagacaatcctggccatatggtgaaaccctgtctctactaaaaataaaaattagccgggcaggtggccgcagcct gttagtcccagctactcaagaggctgaggcaggagatcactcgaatccgggaggtggaggttgcagtgagctgagattg ggaaaaccaaacatggtgtatgaagaaattatagcaagagggaaatattagctagaaaaatcttggcagatgcaaggatg gtttcaagctaccaacatgctgaatgtggagtggggaagagatgcacgcaattggcatttataaaccagtataagccagc cagogoaccataggcotgggtgtotttcaccatoacagactgototactotgctcagagactcaccaactcccaggctgg aagacactagcagtggaaggtccaggatccaggqctatactgaccactgtgccagtggccttgaggcagactctgcagta gacaacanccagggctggccnattagatgacaacatgnccttggtccctctcgggcccaacccagacacctcctg (SEQ ID NO:12199) atggaaactccaaacaccacagaggactatgacacgaccacagagtttgactatggggatgcaactccgtgccagaaggt gaacgagaggcctttggggcccaactgctgcccctctgtactccttggtatttgtcattggcctggttggaaacatcc tggtggtcctggtccttgtgcaatacaagaggctaaaaaacatgaccagcatctacctcctgaacctggccatttctgac 55 ctgctcttcctgttcacgcttcccttctggatcgactacaagttgaaggatgactgggttttttggtgatgccatgtgtaa gatectetetgggttttattacacaggettgtacagegagatetttttcatectgetgaegattgacaggtacetgg ccatcgtccacgccgtgtttgccttgcgggcacggaccgtcacttttggtgtcatcaccagcatcatcatttgggccctg tcctcacgaaagcctacgagagtggaagctgtttcaggctctgaaactgaacctctttgggctggtattgcctttgttgg tcatgatcatctgctacacagggattataaaagattctgctaagacgaccaaatgagaagaaatccaaagctgtccgtttg atttttgtcatcatgatcatcttttttctcttttggaccccctacaatttgactatacttatttctgttttccaagactt cctgttcacccatgagtgtgagcagagcagacatttggacctggctgtgcaagtgacggaggtgatcgcctacacgcact gctgtgtcaacccagtgatctacgccttcgttggtgagaggttccggaagtacctgcggcagttgttccacaggcgtgtg getgtgeacetggttaaatggeteecetteeteteegtggacaggetggagagggteageteeacateteecteeacagg ggagcatgaactetetgetgggttetgacteagaccataggaggecaacecaaaataagcaggegtgacetgccaggcac actgaccagcagcctggetetecccagccaggttetgactettggcacagcatggagteegcetettggatagagaggaat acagaggactatgacacgaccacagagtttgactatggggatgcaactccgtgccagaaggtgaacgagagggcctttgg ggcccaactgctgccccctctgtactccttggtatttgtcattggcctggttggaaacatcctggtggtcctggtcctt tgcaatacaagaggctaaaaaacatgaccaqcatctacctcctgaacctggccatttctgacctgctcttcctgttcacg cttcccttctggatcgactacaagttgaaggatgactgggtttttggtgatgccatgtgtaagatcctctctgggtttta ttacacaggcttgtacagcgagatctttttcatcatcctgctgacgattgacaggtacctggccatcgtccacgccgtgt ttgccttgcgggcacggaccgtcacttttggtgtcatcaccagcatcatcatttgggccctggccatcttggcttccatg ccaggottatacttttccaagacccaatgggaattcactcaccacacctgcagccttcactttcctcacgaaagcctacg agagtggaagctgtttcaggctctgaaactgaacctcttttgggctggtattgcctttgttggtcatgatcatctgctaca cagggattataaagattctgctaagacgaccaaatgagaagaaatccaaagCtgtccgtttgattttttgcatcatgatc atcttttttctcttttggaccccctacaatttgactatacttatttctgttttccaagacttcctgttcacccatgagtg tgagcagagcagacatttggacctggctgtgcaagtgacggaggtgatcgcctacacgcactgctgtgtcaacccagtga

tctacgccttcgttggtgagaggttccggaagtacctgcggcagttgttccacaggcgtgtggctgtgcacctggttaaa ctctcccagccaggttctgactcttggcacagcatggagtcacagccacttgggatagagagggaatgtaatggtggcct ttgtcaacaaagtcacccacttcccactattgcttgcacaaaccaattaaacccagtagtggtgactgtgggctccattc tcccactgccaagaacttggaaatagtgatttccacagtgactccactctgagtcccagagccaatcagtagccagcatc 10 tgcctcccttcactcccaccgcaggatttgggctcttggaatcctggggaacatagaactcatgacggaagagttgaga cctaacgagaaatagaaatgggggaactactgctggcagtggaactaagaaagcccttaggaagaatttttatatccact aaaatcaaacaattcagggagtgggctaagcacgggccatatgaataacatggtgtgcttcttaaaatagccataaaggg 15 gcccccccccgagactgaaagttttggagattcaggggtcggggaaagggttcaggaaatggtaattgagtttccaag ggatagtgttacaagtggtatgggaggccccctatttctgatagtaatagagaatattttctttgttcattatgatagaa tttgtacgaggagggaaagaatttttcaaagacaaagttggagtgaggagtttttgtagagggaaccaggtggggtacaa aatggggacaggacggcagaagttagagtttcttaaccaggatgagaggggatttcacggtaactaatgagtgatttca gaccttattccactatcccagggcaatcagatattaatcatgtacaagttgaaatcatgcgtgtcctttgaggtaagact tacataateetatttageataacaggeeeccagateeagaaaggggagggtteegeeectateactgaaggggateaggg atatgaaagtggctcatggttgaccatcacgtttaacaggaatgggcaatcaggaggggtaggtccaattgtgaccaaca gaccaaacttccattaatgcttgcggttcttgtggcaaagccagtctgtgaggtttgatggggatggacttggtgagcag agagcagggggacaacgaatcccagaagctgaggggaatggggttccaaaagagccgctgctgcctctgggagcacccatg tcagttagtttttccgtacgggactcagggttccagattattcgtttttaaatccttccattcacaatctttaagaagaa tgctccaaacattctgggaacatctcactgccacctcacctacccaactcagcttcacctgccccaattcccttaaggc 30 tgagotoccagggccaagactcaagaggctcagagtgagcagagaaaatcctcgcagttaacttggcttccaggaagtgg ccactggtgggcgttgtggccattcatgagcaccaaaccacacaaaaagaactttgtccctttcttgtcattttgaaaga ctgtqaaactggagccaattctccatcatcacacaggaagctgagtacttcctacttggtcaggatcttgaaacttgaat tcataaaacccagaaagccccagaaacaaagacttcacggacaaagtcccttggaaccagagtaagtgtcacttgtcttt 35 ttctttgagtaggctgggcaaatgtctaagtagcccatggatgcatctccaaggcaattaatactgtagcaatactgaga atggtggatttataaagctgggtgctcagatgaaatataggcttttttgctaaaaaggaagcttacttgaaggattggct tttggttactgattaagaaagtcagtcagtactaagggacaaaaggtgttttctgtggaaacctattcaataagaaatta cttggcggggcgcagtggctcacggctgtaatcccagcactttgggagaccgaggcaggtggatcatgaggtcaagagat ggagacaatcctggccatatggtgaaaccctgtctctactaaaaataaaattagccgggcaggtggccgcagcctgtta 40 gtcccagctactcaagaggctgaggcaggagaatcactcgaatccgggaggtggaggttgcagtgagctgagattgcacc aaccaaacatggtgtatgaagaaattatagcaagagggaaatattagctagaaaaatcttggcagatgcaaggatgattt gatactgaacctatetettaagaagactagaaccaaggateeteaaaattggeactgetatetttggaagagaggtagge tttcactcacccaaaggcaaggagctggccaggtgatcttggggggcatctgttctgctctactaacaaagacacaggtc ccgcaccgagcagtgggacagtgctggactgttcagaatgtggggcctgggcagtgatgtgctggtaaatgttcaacaac tgactcttctgaagaaaagatccctgctttataacatttgttgattttcatggtataaatgcccccactgtggtcagttt gcaccataggcctgggtgtctttcaccatcacagactgctctactctgctcagagactcaccaccaactcccaggctggaaga 50 cactagcagtggaaggtccaggatccagggctatactgaccactgtgccagtggccttgaggcagactctgcagtagaca acanccagggctggccnattagatgacaacatgnecttggtccctctcgggcccaacccagacacctcctgatggaaact ccaaacaccacagaggactatgacacgaccacagagtttgactatggggatgcaactccgtgccagaaggtgaacgagag qqcctttqqqqcccaactgctgccccctctgtactccttggtatttgtcattggcctggttggaaacatcctggtggtcc 55 tggtccttgtgcaatacaagaggctaaaaaacatgaccagcatctacctcctgaacctggccatttctgacctgctcttc ctgttcacgcttcccttctggatcgactacaagttgaaggatgactgggtttttggtgatgccatgtgtaagatcctctc tgggttttattacacaggcttgtacagcgagatctttttcatcatcctgctgacgattgacaggtacctggccatcgtcc acgccgtgtttgccttgcgggcacggaccgtcacttttggtgtcatcaccagcatcatcatttgggccctggccatcttg 60 aagcctacgagagtggaagctgtttcaggctctgaaactgaacctctttgggctggtattgcctttgttggtcatgatca tctgctacacagggattataaagattctgctaagacgaccaaatgagaagaaatccaaagctgtccgtttgatttttgtc atcatgatcatettttttctcttttggaccccctacaatttgactatacttattctgttttccaagacttcctgttcac ccatgagtgtgagcagagcagacatttggacctggctgtgcaagtgacggaggtgatcgcctacacgcactgctgtgtca acccagtgatetacgccttcgttggtgagaggttccggaagtacctgcggcagttgttccacaggcgtgtggcgctgtgcac 65 actctctgctgggttctgactcagaccataggaggccaacccaaaataagcaggcgtgacctgccaggcacactgaccag cagcctggctctcccagccaggttctgactcttggcacagcatggagtccgcctcttggatagaggaatgtaatggtg 70 tgataccagagcactgatggcccagtttgtgcccccgctgtactccctggtgttcactgtgggcctcttgggcaatgtgg tggtggtgatgatcctcataaaatacaggaggctccgaattatgaccaacatctacctgctcaacctggccatttcggac ctgctcttcctcgtcacccttccattctggatccactatgtcaggggcataactgggttttttggccatggcatgtgtaa gctcctctcagggttttatcacacaggcttgtacagcgagatctttttcataatcctgctgacaatcgacaggtacctgg ccattgtccatgctgttttgcccttcgagcccggactgtcacttttggtgtcatcaccagcatcgtcacctggggcctg gcagtgctagcagctcttcctgaatttatcttctatgagactgaagagttgtttgaagagactctttgcagtgctcttta cccagaggatacagtatatagctggaggcatttccacactctgagaatgaccatcttctgtctcgttctccctctgctcg ጸበ ttatggccatctgctacacaggaatcatcaaaacgctgctgaggtgccccagtaaaaaaagtacaaggccatccggctc cttatttggaaatgactgtgagcggagcaagcatctggacctggtcatgctggtgacagaggtgatcgcctactcccact

gaaaagctt (SEQ ID NO:12204)
atgacaacctcactagatacagttgagacctttggtaccacatcctactatgatgacgtgggcctgctctgtgaaaaagc
tgataccagagcactgatggcccagtttgtgcccccgctgtactcctggtgttcactgtggggcctgctcttgggcaatgtg
tggtggtgatgatcctcataaaaatacaggaggctccgaattatgaccaacatctacctgctcaacctggccatttcggac
ctgctcttcctcgtcacccttccattctggatccactatgtcagggggcataactgggtttttggccatggcatgtgta
gctcctctcagggttttatcacacaggcttgtacagcggacttttttcataatcctgctgacaatcgacaggtacctgg
ccattgtccatgctgtttgcccttcgagcccggactgtcacttttggtgtcatcaccagcacgtcacctgggcctg
gcagtgctagcagctcttcctgaatttatcttctatgagactgaagagttgtttpaagagactctttgcagtgctcttt
cccagaggatacagtatatagctggaggcatttccacactctgagaatgaccatcttctgtcctcgttcccctctgctcg

cccttcgagcccggactgtcacttttggtgtcatcaccagcatcgtcacctggggcctggcagtgctagcagctcttcct

tchatgagactgaagagttgtttgaagagactctttgcagtgctctttacccagaggatacagtatatagctggaggcat
ttccacactctgagaatgaccatcttctgtctcgttctccctctgctcgttatggccatctgctacacaggaatcatcaa
aacgctgctgaggtgccccagtaaaaaaagtacaaggccatccggctcatttttgtcatcatggcggtgtttttcattt
tctggacaccctacaatgtggctatccttctctcttcctatcaatccatcttatttggaaatgactgtgagcggacgaag

catctggacctggtcatgctggtgacagaggtgatcgcctactcccactgctgcatgaacccggtgatctacgcctttgt tggagagaggttccggaagtacctgcgccacttcttccacaggcacttgctcatgcacctgggcagatacatcccattcc gatgcagaaaattgcctaaagaggaaggaccaaggagatnaagcaaacacttaagccttccacactcacctctaaaaca gtccttcaaaccttccagtgcaacactgaagctcttaagacactgaaatatacacacagcagtagcagtagatgcatgta ccctaaggtcattaccacaggccagggctgggcagcgtactcatcatcaacctaaaaagcagagctttgcttctctct aaaatgagttacctatattttaatgcacctgaatgttagatagttactatatgccgctacaaaaaggtaaaactttttat taatgtgcctagttctttccctgcttaatgaaaagctt (SEQ ID NO:12205) 10 tctagagccaaggtcacggaagcccagagggcatcttgtggctcgggagtagctctctgctgtcttctcagctctgctga caatacttgagattttcagatgtcaccaaccaacaagagagcttgatatgactgtatatagtatagtcataaagaacctg cctatgtatctggcatagtgtgagtcctcataaatgcttactggtttgaagggcaacaaaatagtgaacagagtgaaaat ccccactaagatcctgggtccagaaaaagatgggaaacctgtttagctcacccgtgagcccatagttaaaactctttaga 15 caacaggttttttccgtttacagagaacaatatattgggtggtgagcatctgtggggggttggggttggggataggggat acggggagagtggagaaaaagggggcacagggttaatgtgaagtccaggatccccctctacatttaaagttggtttaagt tggctttaattaatagcaactcttaagataatcagaattttcttaaccttttagccttactgttgaaaagccctgtgatc ttgtacaaatcatttgcttcttggatagtaatttcttttactaaaatgtgggcttttgactagatgaatgtaaatgttct tctagctctgatatcctttattctttatattttctaacagattctgtgtagtgggatgagcagagaacaaaaacaaaata atccagtgagaaaagcccgtaaataaactttcagaccagagatctattctctagcttattttaagctcaacttaaaagga agaactgttctctgattcttttcgccttcaatacacttaatgatttaactccaccctccttcaaaagaaacagcatttcc tacttttatactgtctatatgattgatttgcacagctcatctggccagaagagctgagacatccgttcccctacaagaaa atagaagacatttggcaaacaccaagtgctcatacaattatcttaaaatataatctttaagataaggaaagggtcacagt attitaataactaacaatccttacctctcaaaagaaagatttgcagagagatgagtcttagctgaaatcttgaaatctta tcttctgctaaggagaactaaaccctctccagtgagatgccttctgaatatgtgcccacaagaagttgtgtctaagtctg gttctcttttttttttttttttcctccagacaagagggaagcctaaaaatggtcaaaattaatattaaattacaaacgccaaat aaaattttcctctaatatatcagtttcatggcacagttagtatataattctttatggttcaaaattaaaaatgagctttt 30 ctaggggcttctctcagctgcctagtctaaggtgcagggagtttgagactcacagggtttaataagagaaaattctcagc tagagcagctgaacttaaatagactaggcaagacagctggttataagactaaactacccagaatgcatgacattcatctg aacacaaacttcacagaaaatgtgaggattttacaattggctgttgtcatctatgaccttccctgggacttgggcacccg gccatttcactctgactacatcatgtcaccaaacatctgatggtcttgccttttaattctctttttgaggactgagaggg 35 agggtagcatggtagttaagagtgcaggcttcccgcattcaaaatcggttgcttactagctgtgtggctttgagcaagtt actcaccetetetgtgetteaaggteettgtetgcaaaatgtgaaaaatattteetgeeteataaggttgeeetaaggat taaatgaatgaatggtatgatgcttagaacagtgattggcatccagtatgtgccctcgaggcctcttaattattactgg cttgctcatagtgcatgttctttgtgggctaactctagcgtcaataaaaatgttaagactgagttgcagctgggcatggt ggctcatgcctgtaatcccagcattctaggaggctgaggcaggaggatcgcttgagcccaggagttcgagaccagcctgg gcaacatagtgtgatcttgtatctataaaaataaacaaaattagcttggtgtggcgccctgtagtccccagccacttg gaggggtgaggtgagaggattgcttgagcccgggatgatccaggctgcagtgagccatgatcgtgccactgcactccagc ttaaaattgttgtcaaagcttcattcactccatggtgctatagagcacaagattttatttggtgagatggtgctttcatg aattcccccaacagagccaagctctccatctagtggacagggaagctagcagcaaaccttcccttcactacaaaacttca 45 ttgcttggccaaaaagagagttaattcaatgtagacatctatgtaggcaattaaaaacctattgatgtataaaacagttt g (SEO ID NO:12206) agaagagetgagacateegtteeeetacaagaaacteteeeegggtggaacaagatggattateaagtgteaagteeaat ctatgacatcaattattatacatcggagccctgccaaaaaatcaatgtgaagcaaatcgcagcccgcctcctgcctccgc 50 tctactcactggtgttcatctttggttttgtgggcaacatgctggtcatcctcatcctgataaactgcaaaaggctgaag agcatgactgacatctacctgctcaacctggccatctctgacctgtttttccttcttactgtccccttctgggctcacta tgctgccgcccagtgggactttggaaatacaatgtgtcaactcttgacagggctctattttataggcttcttctctggaa tettetteateatectectgacaategataggtacetggetgtegtecatgetgtetttgetttaaaagecaggaeggte acctttggggtggtgacaagtgtgatcacttgggtggtggtgtgttttgcgtctctcccaggaatcatctttaccagatc 55 taaagatagtcatcttggggctggtcctgccgctgcttgtcatggtcatctgctactcgggaatcctaaaaactctgctt cggtgtcgaaatgagaagaagaggcacagggctgtgaggcttatcttcaccatcatgattgtttattttctcttctgggc tecctacaacattgteetteteetgaacaeetteeaggaattetttggeetgaataattgeagtagetetaacaggttgg accaagctatgcaggtgacagagactcttgggatgacgcactgctgcatcaaccccatcatctatgcctttgtcggggag 60 aagttcagaaactacctcttagtcttcttccaaaagcacattgccaaacgcttctgcaaatgctgttctattttccagca agaggctcccgagcgagcaagctcagtttacacccgatccactggggagcaggaaatatctgtgggcttgtgacacggac tcaagtgggctggtgacccagtcagagttgtgcacatggcttagttttcatacacagcctgggctggggtggggt 65 gctgattcttgagtttagtgatctgaacagaaataccaaaattatttcagaaatgtacaactttttacctagtacaaggc aacatataggttgtaaatgtgtttaaaacaggtctttgtcttgcctatggggagaaaagacatgaatatgattagtaaaga aatgacacttttcatgtgtgatttcccctccaaggtatggttaataagtttcactgacttagaaccaggcgagagacttg tggcctgggagagctggggaagcttcttaaatgagaaggaatttgagttggatcatctattgctggcaaagacagaagcc 70 tcactgcaagcactgcatgggcaagcttggctgtagaaggagacagagctggttgggaagacatggggggaaggacaag aggtttactctgtggccaaaggagggtcaggaaggatgagcatttagggcaaggagaccaccaacagccctcaggtcagg ttcgtgcagcatatgaggatgcagagtcagcagaactggggtggatttggtttggaagtgagggtcagagaggagtcaga 75 gagaatccctagtcttcaagcagattggagaaacccttgaaaagacatcaagcacagaaggaggaggaggatttaggt Caagaagaagatggattggtgtaaaaggatgggtctggtttgcagagcttgaacacagtctcacccagactccaggctgt atcaaactettagttaeteatteagggatageactgageaaageattgageaaagggteeeatataggtgagggaageetgaaaactaagatgetgeetgeeeagtgeacacaagtgtaggtateatttetetgeattaacegteaataggeaaaaggg gggaagggacatattcatttggaaataagctgccttgagccttaaaacccacaaaagtacaatttaccagcctccgtatt

tttttctgttctttctcatatgattgtgcacatacttgagactgttttgaatttgggggatggctaaaaccatcatagta caggtaaggtgagggaatagtaagtggtgagaactactcagggaatgaaggtgtcagaataataagaggtgctactgact aagetteagtatgeaaatttteaatgacatgtgeetgtggattetgaaaatteacagatetgtetateettagetgagae tgaaggcatctacttcccaatgaccaaatcctggtgctgtggcgacactgagcaggaactccattagaatatcaatatca 10 ctctqcaqacattccatqatqtaaqctatqttttctcttqttqcaattacacttaatttaccaccaqctqcttcaatqtc atgggctatcttgaaaaatgaagctcctttcgtagtcaaactggatgcaagacacagcaaatgagaagttactaaaattgt tgqaqtcctcataqctactgcctgctttaatgaacaaaccaattcttgatgcagggcatagttttccaaaggagaaatca taaaaccatttggaaatttgatgatctcaaggtcctgatgatgtggagccactcctatgggggtagctgtgggctttaact 15 ttgggggcaactttgagggaataaagtctcaaaaagagggaataaagtctcaagattgttcgtgacccatagtaacttct ggcttaaaggaccaltcggcaagtttttaaatgtattttctataatttccatgtagttctttatatttctatttcttat ttaaaacctctattttagctcgtttcctttgacactgctctggcagggaaaggggtggcactgcctcattactgccaggt agggtagaagtccattatccacttggtctccattgatacccaaagtggggagaggctcctgttactgctggtgagggtg ggagtcccccactaagtttctgctaatactgtcctggtggcttgctactattcccatgaagcctccactgatactacat 20 tacttttgggtggtggcaaatgtcctgcctctccactagccctcctgctctaaaacaacccgagtagggagtgggaagga agetttgttaetggtaggtgggagetgaagteeagaettgeeacattgteeeactgatgetaeagggaggaageagggg ccacattactgcctgatagggatgaaagccccagctccctacctggccttcgctgataccagcctgctacaggagtgaag agagatttgaaggcctcaatatagcctgtcgagggtggaagtcttgctcccaatgggcctttagcagcatgggtggtgt ggggccatagctgtctctgtactgcttggctagagtggagtatttgaggtccaaaagttttctgtctttctagccctttg 25 gttagaaagagcagacttttgttggaagtatttttttgtgtttacctgttgtatttccaggttcctagcttctccagcac agtetgggatgtgtgagacacagagaaaatecagtgatgttaetacegtatggtttettgggteecaaegtetetageta atctgctccaccttttggagttttcttatttgttttagatcagggatttagtcatatttaataggagaaatatggaaaaa aacaaacacttacacattctactaaactcaatgtccaaagtttgtgaacttcttgaatattgcttgttcatttccacccc 30 caacaacttcccagttttactacacttgcccatccctagttttgttgttgttgcttaatcccttggcctagtgccaccatact ctctctgctgcctatacataccttagcatgtggaactcaagtaatgagaggtccatttaattggattgaattgggctgga 35 taggattggattgaatcctgtgggatggctaggctaaattagaaatgaagactagtttaacagcagtatccaaggatagt tgactaatgagttaattttactctcaaagacagtctttagtagtaagctgtaatgcattatatcaaactattttccagtc aatgatttataagttacttgaataaggatgctaaagatgtgccttattgaaatggcaattagcacaaagttgggaatgaa atctaattagttaaataacagaatcacataaaaaaggacttgaataaatgtagcatcctaccatgttcctggatagaaag actgctatcgtaaagatattcattctcctcaggttaaattataaactcaatgcaattcaacaggattttaaaaaactaga 40 caaagtgattccaagtttacgtggaaaataaaatgtgagggaccaaacaatatttgaaaaagaaaagagaataaaatctca agacagatagtcacaggaaactcatatatttataggtgctttgcgtataatgaagatggtccttcaaatcagttgggaaa agatgggttättcaataaatggtgttgggtaaaattggttatacattggtgagaaataaagtgaaactcctactttgtat agaatatttttattcctttgaaatagaaaaggtcttactaagcaaaacacagaagtaataaatgaataaatgaagacaaa cttgttaagcaaggtagattacaagaaaatatttacaacatttgacaggccacagattattatccagcctcatctgataa gaaaacttcaacataaagatatctgtttttttttttataaggttcctcaaagtgagccaatcacttcttaagctgaacaa 50 tgaaaaggtgccctttctcagaaaccacagttaccattcagctttgtgaccagaggtttgactgtaccctagtccctact ggataagactaaagaaatgcttataggaaaattgatagcaccaaattcctatcttaaaaaatgaaaaaaggtttcaaatca atgacctcagcttttactttaagaaaatagaaaaagcaggataagctaaagccaaagtaaacagaagaaaggaaattata 55 aagataagagcagaaatcaatgaatagaaaacaaaagaaaaaaatcaaaccaaacagctgattctttaagcagatctata aaattgataaaactctagccagattgatcaagtaaaaaagagagacacaaattaccagtattaagaatgagagaggc aatatcactacagatcctacagatataaaaagtataagggcatactttgaataattttatgactataaattaggcaactt agataaaacaaatttcttgaaagacacaaacaaccaaagctcacctaaaatactcacaaattgaatagtcttatagctat tacaaaattgaggccaggcgcagtggctcaagcctttaatcccagcactttgggagggctaggaaggcggatcacgaggt 60 caggagtttgagaccagcctgactaacatggtgaaaccctgtctctactaaaagtacaaaaattagccaggcttggtggt gegtgcctgtaatcccatctactcaggagactgaggcaggagaattgcttgaacctgggaggcaaagttgtggtgagccg tatagttaaaagtetteecacaaageaaactetagaceeagatggetteaatggtaaattetaetggacaateaaacagg aaacagtaataatteteeacaatgtettteataaaattgatgeggaggagataetetecaacteattetatgaaactage 65 attaccctgataccaaaatcatacagagacagtgtaggaaaacagatcagtatccttcatgaacataaatgaagtac tgttaaattcacctccttccccagagagcatccttcttaaggacagggagcctcaatatgtcagtcctcacagcacctcc ctcagtcttcagcacttaccagctcatcaccacaaccgataccacattggataatttcatgaattactttagagcaaatg attacagatgtaaaaagaaaagtgtgtgaaatagtatccttagtgctcacaaatacaatgatttcattgtttttaaaaat aaaaaatgacaaatgtctaatgcttggtggtaatgctttattgaatgtgtgttatacactggttcctcattcctgaagtt agaaataataccttcctcttttcatttggttatgtttgctgaaacaaatcaaaggctgagattgaaacacatgctacttc 75 ggacccatatggatttgaaatattatgacattggagctggagtggttgggacaacaccagtagtgttataggccatgga atqtcaaaagaacatggaaccctgttaaaatcattaaacatcaaaaactctcccctctggtgatatggtttggctgtg tccccatccaaatctcatcttgaactcccatgtgttgtgggaggcacccagtgggaggtaattgaatcatgggggcaggt ctttcccatgctgttttcacgatactgaataagtctcacaagatctgatggttttataaaggggagcttccctgcacaag 80 ctctcttctcttgtctgccaccatqtgagacatgcctttcaccttccgccatgattgtgaggcctccccaaccatqtgga acttttaagttcattaaacctcttccttttgtaaattgctcagtctcaaatatgtctttatcagcaacgtgaaaacagac

caagcatccatgaatcagaaaagtcctatcttctcttagttatcatccaggactccaaggaaccataattagccaacctg tteacatttectttteatteactagectegaagtttecaggggacagggactetgtectatteatttetgtaacettace acctgacccagaatagctgttccctgaagattttggtggattataaatgtggatgtcttatttctttgaaagtgtgagctt ctatgactgatttatctctgtaaactcatgccaccagtattcaaaatcacacctagcacatagtaaacactcaatgtttg ttgaatgactgaaggaatggatgaaaatgaacctccttgcttctgaccagtggatgagttgcttggccgtgttcctacag cctagageteateccetaaageatetgaagttacceattagtgcaatggttettgaaegetggtgttgateagaateate tggatgcccaggttctctgaaataagatagggtctaggcatttgtatttttaccaaggaggtgtgatggagtcagatgca ccagaaagatcccttccagctctacccacttacaacatggtcaaatttggtctgattttttaaatcgtagtacaatatat atgacataaaattcaccattttagccactttaaatgtacaattctgtagcattaactacattcacattgttgtgcaacca cccctccttctaggccctggcaatcaccattctactttctgtcgctatgaatttgactactctaggtaacttatataagtggaatcacagcatttgccctattatgactggtttagttgacttagcacaacctcctaaggctcaaccacattttagcatg tgtcagaattttctttgtttttaaggctgaataatattctgttgtatctgtaaataacatctttattcatttgtccatca acagactgttgagttcctcccatcttttgactattgtgaaaaatgctgctatgaacctgagtgtacagacatctggttga gtactgctttcaattcattgtttatatggatcatatggtaattttatgtttaatttttttggaactgctacattgtttc 20 cacagtgtacatcattttacatttccatcagcaatgcacaaaggttccaatttttctccacattcttaccaacattttttat tttetgtttettatttatttatttattetgagacagagteteaetetgteaeetaggetggagtgeagcagggtga tctcagctcactgcaacctctgcctcccatgttcaagtgattctcctcctcagcctcccaagtaaatggaattacaggt gcccaccaccacgccaggtaatttttgcatttttttagtagtgatgatggtttcaccatgttggtcaggctggtcttga actectgaceteaagtgatecaceegeeteageeteceaaagtgetgggattacaggtatgaaceaetgcacecaggeea 25 ttttttgctttttagataatagtcatcctagtgggtatgaagtggtatttcattgtggttttgatttatatttccctaat gatcagtgatattgagcatctttcaagtgcttattggccattttcttcttttggagaaatgtctatgcaagtcctttgctc attttttaatccagttgctttttgttattctttttgatttgaaagtgttctttatacctcttgtatactaatcccttatc agatatgatttataaatattttcttcttttccatgattgccctttttactctgttgatagtgttctttgatacaaaata atttttaatttgaatgaagcccaattaatctattttgtttcttttgttgcctgtgcttttggtgtcctatccaagaaac 30 atttgactattttgagttaatttttgtacatcgtataaaataagaatccaatttttattttattttactttttgtatgtg gatatccaatttccccaccaccattcattgaaaagactgtccttttcctatcgaatggtcttggcacccttgtaaaacat aatttgaccatatatgtgagggtttatttctgggctctctattctattctattctattctattctattctattctattct taagttttgaagtcaggaatcgtaagacctccagctttgttcattttcaaggttgttttgattattcaaggtcccttgat gctatttttattttatttttctgtttctttgagctacttttgtagttttcagtgtataagtttttgctacctggttaggtatacttctaagtattttctactttttgatgctattgcacattgaatcgttttcttaatttggtggtagcggggattgtgc attgttagtacataaaaatgcaactcattttttgtgtgttgattttgtatcctgcagctttaaccaaattcatgttagtactcacacttattctatgtagttc
taacagacttattctatgaatcattagggttttctacataaaagatcatgtcacctacaaacagagataattttactcca
ccccttcccgttgcaatgccttttatgtcttttcttgcctaattgtctctggctaagacttccactaccatgttgaatag 40 aaqtqqtqaaaqtaqacatccttqtcttqttccaatcttaqaqccaaaqctttcaqtctttcacqqcctgaaaqactttq taatatgttctcaaggttaaagaacttcagaagttttctaagcaagagaccattttattaacttagttggcagcaattct 45 gagagattagaatgaaaagatagaggataagaagtatctggcaggtataatatattgagtgtgctgaatatacttttagt tttgtataggtgttaaaaaatggcaaaggaggccgggcgtggtggctcacgcctgtaatcccagcactttgggaggccga ggegggeagateatgaggteaggagategagaceateetggetaaaacagtgaaaceetatetetactaaaaatacaaaa aactogotgggcatggtggtggacacotgtagtoccagotactogggaggotgaggcaggagaatggtgtgaacotggaa ggtggagettgcagtgagecgagatcacgccactgcactccagcctgggcgacagagagactccgtctcaaaagaaaa 50 aaaaaatggcaaaggaaagaatgaaaaataaagcaaggtcccagaagaggccaaaaatcttaatcaaaattgactgaaca ttacggaatgaaatggtttttcctttactccaattaacgacttcacaagaagattccatcctcgtttataagattaaccc ${\tt aaaaccagcacttaaaaccagaagccttgaaaggatggagtttggggacccttctcatgtctattcccagaagggggtct}$ tettetggggteetgteecetaaagagetaggeaaaaagtatgettgeeacatetgttgaaagatagaaagttggtetaa agttacaaagaaaagaggaatggaaattaaattgtcttacagagaaaatccagaactgccccctcttcccttactactcc atcaaaaaaggggaaaaatagtcaatgggaaagttttgagaaaaatagatctctgcattcttctggttgagaattcagac aacttgaactagagagctgggtaatttcttgactaaaggtgtgttagatctgaaagggtttttcttaaaattgtctgtgt tcatccctcccatcttagagaggaacacaggattaagagactctggagctcccccagggctactgagctaacagagctatataggatcagagacaaagctacaaagtcattttctggacatctctccagggctctttttttctggaccccccatatcaacatgatgtattt 60 attacattggattagcaacteteettgagettteeteagtaecaggtttacateteagtetgtgggteteagagaaagta ttgttaaatttgagggtagtcttctcaaaatctctgtgaggctagaaagtcagatattgaaacacctgttttatgggttc 65 aaagataggttcaaaaagagagtaaatgattgttggggtggcaggtccagagagggcaggatcaaaactgcaattgagtct tctgccttataaaccagcatagcttccccaaggcacgtcacttctcgataaaatggtgacaactagagtgtcctttcaga teattettagaageatggagtgetaggteaattgtgtaattgatgaggaaataataataataactaagaaeteecatettetae gtccttatatacaatcctgtcaggtagaagctgagtctcagagagaacaagttgccctcccagggaccaccaggtaagctc 70 atccagatcacagagggcagcactgactcctacccagtgctcttgactgtacatctaatactttctactaagaaaaccc cttctctttagaccaatggttttcaaatcttggtgtgcattggaatcacctggaaagcttgttaaaacacagattgtccc accccaagagtttctgattctgtaggctggggtggggacccatgaaagtgcatttctaataaggtcccaagtgatgctga tgccaccagtgtgtggacaaccctttgagtggtgaagctctggacaccctaatttgcaaggctaatcaggcatatgtggc aaatgaatacgaactgaaattctgactccaatatcttcactgatattcctaatccatagcatacacacagtcccattcgt ttcccttttagcttttaatctacatttatcctttcttcctctgccactgccttctctccagttagctcaaaccaggtaac acataaccgcctcctaactcatccgcccagttggtttctttggctttaatctagacttcttatctccaccagatttgcct taccaaagcaccaatttcttaaggcagggttagaattaaaaatcttctgttcctcctcattgcctaaaactcctaaactt atgattcaaggtcttccatgaccttcatggaccagtctaacgttttagcctgtcctaagtgacatgcctccaccacatac ttcatgctttccactttcttctccacgtgtcttcgtcatgcatttccatttcttctacctgcgatgtcctccttcgccat ctctgtagatttaaaaatcctacagggctcatctcaaatgccctttccttcatgaagcctttcatgaaatccccatcgag aggttttccctcctcagctctccaaagcacagatgtctgcgtttgtggctattatcttacgttgttttgtattaaaat ttctccagctttacacatttgtcatcctcttaaggacaaacatcttattatggtcaatgtgaagctatagaggataattt

aatgaaatattccaagggctagtcattacacatgactgatttatctctgtaaactcatccaccactcatccacctgatttt gattggccaagttaatgaatcagagaggaaaagatggtaaaaatataataaaaatctcctaggtagtctcacatcccaca gagccccaggtaatgaaatgaggccctgagataatactttatgaacaataaactccgggttctattgacagtgaagcaa gacctgagagagaggctaaattcccttgtgtctagctgccacaatcttctgagaataatggcctttcttcccgtctgcc aggattctgggagacagagtttcttgattcccttctgcatgctcctcaaaagcctttatgagcttaccttacattta aattettttaaacaaggeattatgtggtetggtettttecagetecacacacetteacactacattecceccagetaatt ctgctctgggaacactgaccttcttttagttctttgaacacattgattctggtcaagatgactcagtaacttcaacctt tgttgtgcccttggtgctgtgaagatatagatatatattaaccactgcacaccagaaatcagaaatagcacaacagagaa 10 taaagtcattgagccatcttctgagctccaaaagacaaattttctcccaaaaagacaaattcaggctctaaaacaatacct taaggaaccagaagtggaatagaaattaaggtggtaagcagggctaaaccacatgcctgttgagcccaggtttggaaga agacaatggcaggtaggaatgtggtttctgatgggtaataggtactgttttcatttactttctgttgcttataacagaat atctgaaactgggtgctttataaagaaaaggaatttatgtcttgcagttagggaaactgagaagtcaaaagttgagggct gcaattgacaagtgccttcttgctggtggggatactctgaagagtcttgaggtggtatcgggcataccactctcagtgag 15 gggactgagcatactaggtcaggtctttcttcctccttttataaagctatcagtcccactcttatgataacccattaatc aaagactccacctctcaatactgccacatgggggattaaatttcagcatgagtttttgatgagacaaatattccaatgat agcagttattaaaagtacatgcttgagagaaaggggattggagtcagcctcagtgcttaaactcaaaagctaggatgaggctctaacactcctgaaagaaggagttgctgctgctccttaccagggctatatcttttacagagcaggagacctaaagag 20 caggaggacccggacatcgtttggaaaccaagcactaaaacaggccatctgttatacccccaatatcctctcaggacatgttttgaaccactcaccacaggactagtcggctagatgaagaaaccacaaaatagctaagtggggagagaaaagaccaaaaatacattttattcaaaatgaaaatacaatccaaaattccatgatcatgaagaaatcaaatggtatgt gttäggtggttcttgcattgctatagagaaatacctgagattgggtaatttataaagaaaaagaāgtttaattggctcata 25 tgggacatgaccaactcagcattccactggaggctatatgatcaaacagcaaactgtttatcacgaatgcaggatgtgag caaactcacaactggtcctgccaacagaaggtttgttggaggcaatcactccctggtgcctgaggtaatctactgcaaca tctagagaatgcagtcttgcaagcctactctggacagggcagctggcaccttattccatcccccttctcactatcttttt 30 ttgcctaataaatacagaggctgtgtaaagctcagggccettgtccactagaggcaagttgccccttgaccccttcttc caaatatactcttttgtctcttgtctttattctcacatttgccccctttgttcagttccactaggtccgtgcgggttat atactggtgccctgagcagcaacagaatcaggctctcaacaagtgtcatccgaacatgggactttgaggacatgaacgaa gaaggtctgctggagcagaggaacagaaattgacaaggtgaacagggaccctgggacgagtctgccagcagcggatataa ggtcagttacctaaagaggtactgatcagtgccctaaagagatactgggagcagtgctttaaagaagtactgggaatggg 35 aaattttcctgaatcagggtaacaaggggaagaatttgtctattaaagaaaacattatgtgcagttgcttaaagttgtat tggaacagtetggagettaggttaatttgcagacactaactatcacatgcgtccgtgtgaagagagtccaccaacagget ttgtgtgggcaataaagctttttaatcaccttggtgcaggtgggctgagtccaaaaaaggagtcagcaaagggagataga ggtggggcagttttataggatttgggtaggtagtggaaagttacagttaaaagtggttatctcttgtgggcagaggcagg ggtcacaaggtgctgggtggggaaatcatgagactctttttctgggacaggagtgtcacaaggtcaattgatcagttggg gtggggcaggaacaaatcgcaatggtggaatgtcatcacttaaggcaggaactgactatttcacttcttttgtggttcttcagttgttttcgggccatctggatgtatagtgcagctcacaggggatatgatggcttaggttgggctcagagacctgacattcctttttattattaataagaaaacaaaacaaaatgtggttaagtgttggggcagcaaaaattttttgggggtgg atgtagagataaggggcaatgtttctcagggctgcttcaagcacgatcacggtggtgtggggaatctagagtgggagagat taagctgaagaaaattttggggaaaggggtgatattctggggttgttagaaggagcatttgtcatatagaatgatgg gcctggatgtggttttgtatgaattgagaaactaaacggaagacacaaggtccaaataagaaggagaaaga 45 taaaggattaagaattgggaggacacaggacatccaattagaggagtgcccaagggggtccagtgtaattatttgcctgga tatacagagtcctccttttttagcagtgagtaagttgagacctattcctgtcttcttatattaataagtaaaataaagca aaatagaggtgaagtgttggtgtcatgaggggaacaggaagcagttcggtcctatttgcaaattgatttttgggggggtaa 50 agaaaactagtgtacctttgcctgtccaattaataagtagacacatgtagatggaggagcacaagaggaagaagaagaact ttgtaaggcaaaactggaaatgtaaagggaaaagatgagaggagcaccaaaagaggtgtcttgcacccagactcaggga tctagtgagagcagcagctgttagaggttgtaatggggattaatggggctactgggtagaggggaggttcaacttttat ggtgtatgagaaagcgcatagtgtctacaagcaacctttcattgctattcataggattgggtataagtaaacaagaaggg ggggctaggaggagagtctgaagaacaaggggaaggtagccaaggatggagtgaaatgtagggcaaatgtcttaaaggaa 55 atgagaggttetaagaggagggetagtggettgtaacccacatggaagaggttacgaaaggatgatagaatggaatgagc ctgtgaggctggaaggaggaattttccttggtccaagaaccatttgccttgtgtgggaagagtttgataggtggaagttt cagtgggagggtaggcgggagtgactgatgagaaggagaaaaactggccataagggacagaagttggaatgctagctgct cctttagctaccttatcagcataagctttgccctgagtgatgggatctgatgccttttgatggcgcttgcagtgaatgaccctagcttccttggaagtagagcagctttaagaagagttttatgaagaaggcattaataatggaggacctcgtatagt gaggaaacctctttcaggccatataacagaatggaggtggagattatggaaggcatatttagagtcagtataaatactg cacacaatccttttgcaagagtgagggctcgagttaaggcaatgagttcggcttgctgagagggagtggagtggggcaga 65 atqcatcaqqtqtqaqqaaqaaatacattttgaaaqttatgaqaactgtaqaqaqtqaqttgatcatagtttgtgattt tqtttaqacaqaaaqqctqcaqqqcactqtccaaqctcttqtqtaaqqattctqaccqcacaqccttqtactttqgctqt gtgtaalgaaaagggttgggatgagttagggagagctagtgtgggagtagcttctagggctgtttttaaggaacataaag 70 aggagtggggaaaggatttaggatctatggggtcagctaggtttccttttgtgagtttatgtaatggtttagtcaggatg ggtttgggagattagccggacacagatcaggagggaggagcacttgtatttttatgaagaattatgccgataggtaacgga tgaggaagaaatttgggctttggagggggatacacgatattcccttgagaatagatgttggaggagcaggagggtgtcct gttgggaagattcataggaggggctataaagtagaaggccatcaaaatattgaataaggtgacaagcagatggacagaaa 75 agtaaattatgagaaagggcttgactgaagtaatggaggctgtccctgaagccttgtggcagtacagcccaggtaagttg ctgagactgatgggtgtcaggtcagtccaagtgtaagtgaagaggctgggggtgaagagtgcaaaggaatagtaaaga gatgggatactggcattgagcaggataagggtaattaggttttaatgggatggtagggttgcgtgatcggtcaccaagga 80 gggagtagaggtatcccatacttgtgggttaagatagggagtcaggaggggaggttgtgaaggaggctttgaactgggga aaagggtggcaatgaggtgtggctgtagcccaggaatagtcagggaagcagataatttagttaaaatgtctcaatttaat aagggagctgggcaggtgggaataactaaaaaggagtgcataaaagaatgttgtccaagttggcaccagagttggggagt

tttaagaggtttagcagcctgaccatcaataaccacaacagttatggaggcaagggaaacaggcccttgaaaggaaagta atatggagtgggtagcctccatattgattaagaaagggacagacttaccctccactgtaagagttacccaaagtgtctgt gatgatccaggaggcttctgaggtgatcaggcagtgtcagtcttcagctgctaagctgagaagatctgggaaggagtcag tcagagagccctgggccagagttccaggggctctgggagtggctgacgggcaagttggacagtccgatttccaatgcggt tttttctcacagcagaggcaagtaattgcaactcagaaatacattgccacttggctgtctcttctctattattgtacacc ttgaaggtgaggttaattaagtcctgttgtggggtttgagggccataatctaatttttgaagcttttttaatgttgggag tggattgggtaataaaatgcatattgagagtaagacagccttctggcccctctgaacctagggcagtaaaatgtctaaga ggaqaqqtcaqataaaqtaaaaqqaacattaatcttgactatgccttcagctcttgccacctctctaagaggaaattgtt gggcaagtggaggagtgctagtcgtggaatgaaaccataagctggactgggtgtgaggaggggaggtgatagaaggatta cagcgtagggagtagaggctgaggaagaattgggacctggctcagcctggtgaggagtggcctggtgaggagcagcctg gggaggaggagagaggttagatgggttcgtagaaaagaaggattcaaaaggactcggagcttggtgaggagactgaaggaa cagacaggagagaaaagaaqaaagatttgggacaagtcgcattgggagcagagactaggaagggagtgatgtgtaaagaat gcctggacatcaggcacctcagaccatttgcccattttatgacaaaaattatctaagtcttgtagggtggagaaatcaaa agtgccattttctqqccattttggaacaattatcgagtttgtattggggccaaatggtgttgcagaagaaaataagatgct taggttttaggtcaggtgagagttgaagaggttttaggtttttagaacacaggctaaggcagaagaaggaggaatggag 20 catcagccaggggaggtggtacttgccaccaaggtgatggatcaaggcagtcatccccacggtgatcagacacctctgaa atgtgggtgaataatcaggcaggtgtccctgcagtgattagacaccaaggggagactgtcttcccgagtccgtgaccggt agagattgaagggtggagagatagcaagagagttggaaaagagaataaaaagaggccacttactcaatttaaaattggtg agatgttccttgggctgatctgaggacccaaggttgtaggtggatctcctcacggaatgagggtgaggacaggggactgg tetecagaaggagtteecgagteetggatetteageaceaaatgteatgtgcatecatgtgaagagagteeaceaacagg ctttgtgttatcaataaagctttttaatcaccttggtgcaggtgggctgagtctgaaaaaggagtcagcaaagagagata ggggtgggtcagttttataagatttgggtaggtagtggaaagttacagttagaggtggttatctcttgagggcagaggtg ggggtcacaaggtgctgggtggggaaatcctgagacttatcatccagggaaggagtgtcacaaaggtcgattgatcagttg gggtggggcaggaacaaatcgcatggtggaatgtcatcagttaaggcaggaactcactatttcacttcttttgtggttct tcagtttcttcaggccatctggatgtacacgtgaaggttacggggatatatgtgatggcttagcttgggctcagaggcctga attgggatagagcaggattaaaacaagctcatcaaaaaggtcttaaagttgattcttcagttttctccacttggagttta gttcatactgtacttctgccattatctccttattattctgcggaacagcaggctgaatctaaaaattggaaagaatttgt tgtcctactcacagctccaattgaatataaaaaacaggagagggataaaaattggcctataccgcctcctccagatg cagaaacatctgtaccatctccttcagtggcagaaatagagatcccagtacaaagaattttatgctcttgtcatagct ggagagcccttaggaccttgtgcttttcctatttctgtaaggcctgatccaaataatccacagcagtttattcatgaaca ctctccactaqaatttaagttgttgaaggaattaaaaactagtgtggtcaataatggagtacaaaagccaatggttcctgg aggaaggaatgctagacatagaactttgggagcaagtggggagaaatcttaaacaacaccaggcacaaaggcatcaggtc ccagtaaaatcttttatgttaggggctttgagtagagcagccctggttgttacacacaaaaagagcctaaaaagggaaagg 40 aggaggaaatgtcacctgccttatcacctcccttccctcagtgccaatatcactgggccaaaataacaaagaggaaatg gaggtettacetaagetteeteeteetaatagataggaagaaggacagaggatacgetacagetateagteeetgtettaa gcaggcagcattagaaggagagctcttagccggggtgcagtggctcatgcctataatcccagcactttgggaggccgaggc aggcagatcatgaggtcaggagatccagaccatcctagctaacatggtgaaaccccgtctccactaaaaatacaaaaaat tagccaggcatgttggtgggcacctgtagccccagctacttgggaggctgaggcaggagaatggcatgaacccaggaggt 45 ggagcttggagctttcagtgacctgagattgcaccactgcactacagcctgggcaacagagcaagactccatctaaaaaa agaagaagaaggagagctcttaacctgctcagtaatgcaaaatcggcaaggcaatcaggtgtatgtttataaaaagataa agcgacaaagccaacaaggtetgeecaggacggcagcateeetetggeaaaggagcaagggagcagcacagacacaggca aagcctaaacaagtacaatgtggccacctcccaggacctgcaccactgccctctggctctgtgggcagcccattgcaaaa taatggccactattgtcatctctctctctctatccctgatgtagctttccaaattcaatttaagtaaaacagtaacctttgaa gggaaagagattacagagggcccatgaattagttgaagagtaattaaaaagctaggcatgtaaaaccacacattacgcttt ccaaatctggccataaactggccccaaaacaggccataaacaaaatctctgcagcaccatgacatgtttgtgatggccat 55 aggcattcccaaaccactaatgatagcatgagcaatctgtgccttaaggacatgttcctgctgcagacagctagccagag cccatccctttgtttttggcccatccctttgtttcccataaggaatgctttcagttaatctatgatctatagaaacgatgc ttatcactggcttqctgtcaataaatatgggagtaaaactctgttcagggctttcagctcagaaagccataagccccctg atttcccacttcccaccctttatttctgtgtgtgtgtcttgaattcctctagcgcctctgggttatggtctccacaacca 60 gtcttaacccactgattagatagtctttgatttgtacttgctaaaagagtcctaaattgagttcctcagctagtgagtca ctgttttcaagactgtttgccagattgaagtccataaacttggtcagcccgaaaactcaattacaagatctaagctattc tgcctgtggctttaagcacatggttaaagtatattatttaagtctctccttctagatatgctttcagattttcttttaa 65 attectttaagtaaaaggcaatteaaageggtattgeacteecccatacetaatgetttaacactgtttactgatgggte tggtaaacatggaaaagctgcagtctagtagagaccacataattcaatcactcgatctgagttcactagcactcagagag ctaaggttactctgtttatttattaaagaatttttacaaccttaagctcactctggactttccagccttatgtggcaaat gtagccatcaatttatggggtcaagacttacttacagcatgggatatgaggcttacaaatgagactttgataacccaggattttaaatgttgaagaacacgggatatcagagtgaaaaaggtttagggaaaattctgacaagggaaaattctaacctgat 70 atcaataactggaaagacaggttaaaccctgcaaggggatacattgacatttttcttcctcacttgctcttttctgctg tctgaatatgggcatgagggcaagagtcattttagaccaccaagtgaccttgaggatagaagccttatactagaggtggt gggaaagaaaaaacaggaggactcataaagaaaaaaataataaacctcagtattaagatggaaaaattcccccaattggt
ctataggttgaacttcatctctattaaatttcagctatgtttttgcagaatttgatatgctgatcataaaatttatatga aaatgcaagagacacagaatagtcaaaactttgaaaagaagaaagttggaggacttacacttgttgattttaaggctttt tacaaagctataataatcaagacaatgtgttactgacataatgatagacatattgatcaatatagacaatggatgaatgg aagaaattttgctgagacaactaagtatttatatgcaaaataatgagtttgaatggctaccatatacaaaaattaactca aqacagagtettgetetgteacccagaccagagtgcagtggcatgatetcagetcactgcaagetccacttcetgagtte ggagtttcaccatgttagccaggatggtctcaatctcttgacctcgtgatctgcccacctcagcctcccaaagtgctggg

attacaggcatgagccaccacgcctggcctaccattacttttaatggcaaaaatgcagttacttttgcaccaccctaata gaactaaatgtaagagctaaaactacaaaactgttagaagaaagcataggagcaaatcttaatgacatgagagttggcaa ttgtttttagatatgacaccaaaagcatcaaggacaaaagaaaaaatggataaattggacttcctccaaattaagaga acttttgtcctgcaagcaatactattaagaaagtgaaaagacaagtcacaaaatgggagaacatttttgcacataatata $\verb|tttaataataggctgacatccagaatacataaatacctacaactcaataccaaaaagacagcccaatttaaaaaatgggcc|$ aaggatatgaataaacatttctctaaagaagatacaaaaatggtcaatatgcacatgaaaagatgctcaatatcaatatc tattaggaaaatacaaattaaaacacaaatataaaacacaagatatcaatttacactcaccaggatggctgttatcaaa ${\tt aagacagataacaagtattggcaaggatttggggaaattgtaaccttcatacattgctggtaggaatataaaatttgcaggaatataaaatttgcaggaatatgcaggaatatgcaggaatataaaaatttgcaggaatat$ caggtttggaaaacagtttagcagtttctcaaaaagcctgggcatggtggctcatgcctacaatcccagtgctttaggga gctgaggtgagaggattgcttgagcccaggagttggagaccagcctgagtaacacagtgagacctcttttctaccaaaaa gaagagagttaaacatagggtaccatataagccagcaatccatctcctagatatgtacccaagaaagttgaaaacatata ctgacacaaaacttacatatgaatcttcatattagccttataataatagccaaaaagtagaaacaacccaaatacccat caactaattaaaatatggtgtatctatacatattatttggccataaaaggaagtactgatacatgtcataacacaaatga accttggaagcactatgatctctgtattagtcagctcttgtattgctataaagaactacctgagactgggtaacttataa 20 gcaaatatatccattccaaaagggaaaaattagccaaaacaaaggggccacaggcccacgcaagtccaaaatcaagcagggaaatcattaaatcttaaagcttcaaaatgatatcctttgactccatgtctcacatccaggccacaccaatgcaaggag tgtgctcccaaggccttgggcagctctaccctgttgctctacagggtatagcccccatggctgctttcacaggctggcat tgagtgcctccagcttttccaggtacacagtgcaagctgttagtggatctaccattctagggtctggaagattgtggccc 25 tcttctcatagctccagtagacagtgcccagtggggaatctgtatgggggctgcaaccccacatttctctctgcactgcccaatagaggttctccatgagggctccattcctgtagcatacttctacctggacatccagtggttttcatacatcctct aaaatctaggtaggggctcccaagccttaactcttgccctctgcacatccgcaggcttaataccacatggaaaccaccaa tgcttatggcttgcaccctatgaagcagtagtctgagacatatctgggccctttttggccatggctgggatgcagggaaca gtgtcctgaagtggcacagggcagcggggccatgggcccatgaaaccttctttcctcctaggcctccagacctgt 30 gatgggagggtctgcctcgacggtctctagaatgtgtttgaggcatattcctcattgtcttggctattaatatttggctc ctctttacttatgcaaatttctacagcctgattaattcctttccaaaaaaatggggttttcttttctactacatggtcag gtcacaaattttccaaacttttacgcttccctttgaaatgtaagttccagttgcaggtcatttctttgatcacaaatata agcatatatttgtagaatcagccaggccacatcttgaatgttttgctgcttagaaactgcttccaccagataccctaaat cattgctatcaggttcaaaattctacatatctctagggcaagggcacaatgcctccaagacctttgctaatgcataagaa aaagaaaagaggtttaattgactcacagttccacaagctgtataggaagcatggttcagaaggccacaggaaacttacaa ctggacgtgacaggagggtgtgagtaaaagaggcaatggagtgataggtacagggtttcttttttggggtgatgaaaatat tataaaattagattgtggttatagttgtataactcttgaatatcctaaaaatatattgaattttccatttccattttaaa tgggtgaatcttatggtatgtgaattatatctcaataaaactgcaaaaaatgcacaatttgcaaatatgcaaaaatatggaa tatatatatatatatatacacacacacacacacacatggaatactactcagccataaaagggaataaaacaatggcattct cagcaacctggatggaattggagaccattattctaagtgaaataactcagtaattggaaaaccgaatatcatacattctca 50 ctcataagtgggagctaagctatgaggatgcaaaggcataagaatgatataatggactttgggaactcagggaaagggtg agagagggtgaggaataaaaggctacccattgggtacagtgtacactgttcaagtgatggctgcaccaaaatctcagaa cttacctcacactataacataacaataaattccaggtgaattatagaccaaatatgaaaagcaaaattttaatattttag aagacaatttttatgaccttaagttagaaaatgatttttaaaaacaggatgcaaaaacactaatcataaagagatattttaggccaagcatggtggctcacacctgtaatcctagtactttgggaagctgaggcaggtggatcacttgaggtcaggagtt caagacaagcctggccaatagggtgaaacatgtctctactaaaaatacaaaaattagctggaaatcgctcgaacccagga 60 tggagtgcagtggtgcaatctcggcttactgcaaacttcacctcccaggttcaagcaattctcctgcctcagcctcctgagtagctgggattacaggtgtgtgccaccatgcctggctaatttttgtatttttgtagacacggggtttcaccatgttgg teaggetgageteaaacccetgacetegtgatecacettecteageeteccaaagtgetgggattacaggeatgagecetggeetggctaccatgaatatttttttaaaggtagcatccagaattaataatetteccaacaaatttcattagtagt 65 cagggaactgcaaattaaaatcaaagtaaaatactactttccactcattagactaaaatccattcaagtctgataatacc agtaaaagttagtgatacaccttccattttcatctgttctgtgctgctaccaaagaatacctgagactaggtaatttata aataatagaaatgtatttctaatggttctagaggctgagaagtccaagattgaagggccagcctctgcagagagccttct 70 aatcagcattactctattaatgagggcaagaccctcatggcctaatcacctctaaaaggtcacacctcttaatactattg caatggtaattaagtttctaatacatactttttgggagacattttcaaactatagcacctaccctatagcccaacatttc tactcctaggagtatgccctagagaaattctgcataaatatctaaagagggccattgttgcattgttaggtactggaaa attggaatcaattactatgtctaccagcagcagaagatggctttttaaaagttttggtttattcatgaaatggaatattg cataaagtatgctccatctcaccagatgaaaacatttttcactaggactatttcaaaagtagtcttatcactgggcttct 75 ctattatgcataaaaattttaagtgaacatgttctttgacctagtactcctacttttaggaatttgcccaaaagggacaa tgacagtggagagggaaagagagaaagaaggagaaatggggagtgggagcgggtacacaaggaaattttagttgcagc tccaaattttttacttttacacaatgaagcgaatatggcaaaataagatttgttaaagttgggcagcaggtacacagata ttctatcattatcctttgaatatttctgtagatttaagttgtccattaaaaaaataaaatacacacataatttttaagat tagttttttctatttcctggccttcgcatgcactgttaactttacctggaattctttatgcagtaattaagagcaaaggt gtagagcaagactgcttgagcttggatcccagcactgagttgatttagggagaataacttaatctcttaatcccaagaga

aaatatgatataataqttttqaqctcataaagttttcataagcattaaatgtgacctatatatgtaaagcaatctaacag tgcctataqtatttataagtgtctgcattaccaaattcatcattatcatggcatgtcatgtcaccatccactacattacc atcactgtcaccatcatcatcatcaccaccaccatcattattaactccctttgtctagtcaattcatatttgttcttcgt attttaqatacctqttaaaatattttttcaaagatgtctactctgattcttcagtacaaatttgatttaataagatccta gttctacagcaatacaggtatattagaaaaacctgcaaaggtggggaccagcttaatgccagagccccccactgcttata ggctggggtacttalaggtctgggggtacttalaggcctgggtgggtgggtgctgagcagtatggcttgctgcccaagaa gatgttgataagacgttcccatgatgaggcagtttggtccttgctccatagagtgtgatgcttctttccca gcagaatgtggtagggatgttccttcaggtgggcctttgcctggcagggtatgataaggatgttcctgtgccttggaatc aggtagttagacaggatgtttctcacagcctgaacccccatggaatgtttcactttgaccagggtctgcgaaatagcagg gggcttacaaaatggtgtagtttggactaacaccttggaacaaaaagtttcttggggccaaggctggcgtattagtctg ttttcatgctgctagtaaagacatacctgagactgggtaatttataaagagaaaagaggtttaatggactcacaattcca catggctggaggcctcacaatcatgagggaggcaaaggaggagcaaaggcacgtcttacatggtggtaggcaagagaacg tgtgcaggggaactgccctttataaaaccatcagatcttgtgatacttattcactatcaaaagaacagcacgggaaaaat ctgcctccatgattcaattacctcccaccagattcctcccatgacatgtggtaattatgggaactacaattcaagatgaa atttgggtggggacacagtcaaaccatatcagctgggtatgttttattcacctttttatacccattgtcatgtcttctgg acaaacaatggatgtaaaatggtatagactcctgagtactcatttgttgaatgacaaatctatgaaccatttgaccagta tgcagcagccattaaaattatgtttatgaataatttacagcatggaaaaatttgggggttgctagtagaaaaacaaaaagg 20 gatggggcagatagaagtaacctaaaatactaacatgttgtttttggggtcatgaaattataaatgattatgcacccctta atttttactttctatgtttgattttctatggtaaatgcatttttattgaggtggaattcacataacatgaaatgaaaaa tttagtggcatttattatattcacaatattgtacaaccactagetetacttccaaaacattttcatcactccaaaataaa 2.5 gggatttattattetggatattccataaaatggaggcacaatatgtaccttttatgtetggettettteaccaagcat gtttttgaggctaatccacattgcagcatgtatcagtacttcatttctttttatgaataactgtatacagaccacaattt gttatccatttttttggtttatggacatttgggttgtttccatctctcaactattgtgaatagtgctgctatgtatatttg tgtacaagaatttggttacctattttcaatttttatgtatatatctaagatgaaattgcagggttatatgctaatcct atgtttagcatttttttttaggaaccattaaactgttttccaaatctgatgccccattttatattcctactagcaatgta agcaagttccaatttctccatatcctcaacaacacttqttattttctatttttgttatagccattctaatgagtgtaaag tgatatatcattgtggttttctttgcattttccttatgaacattgatgttgagtaccttttcatgtactttttggtcatt tatatatcatcttttggagaaatgcctcttcgtgtatgttttgcccattttaaaactagattgtctttgttgttgacatgc atgcattctttaaatattctgcatactaggcccttatcagatatatgatttgcaaatgttttttctcattttactggctg tcttttcactttattqataatgtcctttgatgcccaaaagttgtttattttgatgaagcatatttatcaatttattcct ttattgctcatgcttttgatgtcacctctaagaatttataaccaaatcagaggtaatgaaggtttacccctctattttct tctaagagttttatagttttgactcatttacttaggtcgctgattcatttttagttaatttttgcatatgatgatgaggaa gaggtccaactttactcatttgcatgtggatattcagctgtgccagcaccatttgtgaagagtctatcatctcctcattt aataatagtattgacacctttgttgaaagtcaattgataataaatgtatgagtttatttctggaatctaaattctattcc attgatctacatgtctatccttgtatcagtatcacactatcttgattactgtagatttgtagtaagttttgaaactagaa agtgtgagtactgcaatattcttctttttcttttttaaagattgtcagggcctcttgcaatttaatagggatatgaggat tgttttgtagttttgggggtacaagtctttcacctttaaattttggtgaaatttattcctaggtattgcatttttttatgc tattgtaaataaaattattttctcaatttcctgttggatgttcattgcaggtgtatagaaactcaactgattctttgtgt aagggctgaaataaagggatgggttgggctagttatctgcagcaggagcatgtccttaagtcatagatcactcatgctat tgtttgtggtttaagaatgcctttaagcggttttctgccctgtgtgggacaggtgttccttgccctcattccggtaagcc cacaaccttccagcgtgggcattatggccatcatgaacatgtcacggtgctgcagcggtttttatggccagttttgggg cagtttatggccagattttggggggcctgttcccaacaatcttataccttgcaattttgctgaatttgcttgttaacttt tcatttqqatqccttttatttccttttcttgcctaatttccctggctagaacttccagtatgatgttgaataaccatggt qaaatgggcattcttgtctttttcctgatgttagagagaaatttttcagtctttaaccattgagtataatgttagctgtg 55 ggttttttacaaatatettttateatgttgaggaagtteetteetaeteettettggagtgtttttgatataaaggg atgttacattggttgattttttatgttgtactacatttgcattctttataaatttcacttggtcatggtgtataaccc ttttaatatgccattggatttagtttgctagtattttgtttagagtttttgcatctatattcataagcaatatcagtcca gtctggttcttaacatttttctgtgtgtgggaggtttctgattaccaatttgatctctttaatttttacagatcttttcag attttctatttcttcttgagtaactttttagcaatttatgtattttagaaatttgttcatttaatctaggttatttaatt tattggtgtgcattttttcatagtattatcttataatcttttaatttttgtaaagttgataatgtccccaccttacctga tettagittatttgtgtettetettgtattetttttgtettettettettettettageatageatagetaaaggtttgteaactttgt tgatettttaaagagteaacttttgettteageatgeattaetttttaaatagaaatatataeacetaagttgeattaea aaggagttgtcctccacacacttattctttcccaccatcagaggtttatggtccccgcaaaagtcaccatcagttgggct gttcaccaatcagaacctctgccacatcagctctgtgggtttcctctcatgccatctgtaccaacaatgagcacagtctg ggtttcctgatgttttctatagcatggtgcccctccctgggacacctcagaagccacaatgatattcattaaacttcttc ctgcaagtactccctctattgctccttctactcaccaagcttagtgtcagggaatatgctggtggggagtatgaatctta gcttctcactcccatgctcccaacctgctgttgccaagtcttggggacatctataaatgccttctaaatacctgt cttggcctatcccagccacagattcctccctagagcaggctacctctgaggcatctatactgagatcttaatcacagag acatttaaaacatctaggctacaaaaqaattcctactatagggttcaaatgaatttctttccgtcacttgagacagcttt ttagcaagtacatgtattaaagattotgatttoccottttttocctacagtttgtttggcctaaaggtatgacatctaa tctqctgcatttacactctaagtcaaaattaccattttgttcttttaatttctattctaatcatacattcttgtctact cctggttcatctggagacaaagttgaacttagaagatggaggagaaattcttatctgccctctgctagttgacacttcct ttccaagaatcatttgcagttgctgggctttcttgctgtgactctatgccctgttgtgttactttttcatttgtgacaaa gggcatcatattggtccagatcatgtttaaccagaattgaagatgtaaaatcctagaactcactaatctattttagtagg tcacaggaagcatgcaaaccataaaaaccgcaatgaaccaaaagcatctgtgttgacaagaggcaagaatttctctattt tctaaaggcactaactgaacaaatctattgcccattacttaggaaattgctaagggcatcgttaaagtacttcaggctgt

gagtggcagagaggttctgagtacaactctaactttcagtttcaatggcctaatccccaactcaactgctgaccttgagt gtaaaaataaacaagatcttaaacatcttagggccagcattctgggtcttcttttgttatttggggagcataaactattc Ecatatoattggcttgcagaaaaattgagcttctcctcttccttgccccatgtcaccttgaggtgaccacagccctgcct tctatgtaateetgettggteageaggeacateagageteagtggettgtgaeataettteetteaageetgetegaagg gccatactcatcattgagactgggaaccttagaaaccatgaaccagtgccaatgggtagatacagaattctcaaactca tgaaaaaacatcctttttaactctctccgtgtgcataaagaattctaagatgtactgatcaagattcccaattttctaac ccacactcccccagatccactctgagtcccaggatgctgattttaggggctacattgcctagactgtccattattccctc ttcccatctggttcagtcactgggaagcactggtaggaggtcagagtgggagaaggaggttaggatactttctgcccctg 10 caagtggtattgtttattcttttgatccttctagctgttaaggaagaaaaaataattttttcctcaatgctcataagtt cttggaatggacccctgtaacaaaagacagattaacacgagaaaagtttattaacgtacatattttatacgtacatagga gctatccagggaatgaataattottaaaaaggtgaotttgaattocagotoatatagcatottcaacaaagttcagtaac attttagagatatgacaagacaaagaaaatgaactttgagcctctagggacagtgacttgtaggaaggcaaaaggaataa 15 atggaggtaaaggctggttagtaatacttgttaatgaagattcctctggtgccatctccaggtccacaaggatttaaatt tgtcttcagtggtgaacctttgttcaccctggcagaaggtgtggagggggtgcagatccgttttgtctttgtaagtcta tateetgettttagacaaataaagggagggaaaagagettteetteatetgettettaattgeetteageteaacaatee ttatgcaaaagaggtacattttagggtgtcaaattctggtctcccacaaagcatagggatgacagaccacctcaccatcc ctgttgcttcttttaagcctgctcacccctccaaaaatattttcattctatactgtctctacaaaatctcagcggagggt 20 gccctctgttatcctgccctctgtgtcagtataagccaaaggtttgaatcctggctctgcaactatctacctctgtgcct ctccttgtttatgaaattacagggctggagacaaagatcacaatgtgaagacaaaattggagagcggtcctaatcagcca gagcaaaatttetggetettgetetteeceateetgggttgaateataggaacaggtggcaagatgccagggtcaggaga ttccagaagtggcagcaagctcagtgttaccaggtcagggatgacctgtcttattattgaaatctcagagatatgctcca attccggcccagagacacattgagagacaactggggaacttgctatgttcctgaacaggcaatgagctgtcttccaagaa 25 aaaacctgagacccttcaagtctcaggtcttacttagcacatataccaggtcttacacaggacacatggttacaactgac tgaaatctgggctgggtgtaggagctcacacctgtaatcccagcctttcaggaggctgaggcagattgcctgagcccaggttcgagaccagcccgggcaacatgacaaaaccccatctctacaaaaaatagtcaggcatggtggcatgcacctg 30 gccagaccctgctctagctgctttaggtccatttaccctcatagacccccagtcttgttattcatatttcatatttggga aatggaaacttagaaacttgccaagtccacagcatgagatcctgcctccggtgtctgctgcatccagaaagtgccaggg gccaacttagatgacaccatgttctctgcacaatcttaggaatgctcctagtctgatgtccccattgcaaaatttacatt 35 atcttttaacaaaacgtctttccaaggagggcatttaaaataactgaggttcttcttgctaaggacgttcctgacacaa gagataatttagcatttccttttcattaaaaagtttgaaatcctgtaatttgtgataatgtggatgaacctagaggatgt ttagccgggcatgatggcacacacctgtaatcctagctactcaggaggctgaggtgggggatggcttgaactcagaagg 40 aaagttgctatcttagaaaaagacagtagagcagtggttaccagagactggggaggaaagagaggaggtgagaatgggca gcagttgatcaacgggtacaaagttaccatgagataggagaaacaagtgctggtgctctgctccaagtagggtgacggta gttaataatgaattetgtatatataaatagetagaagagagggtttteaatateattattatteeaaaagaaatgataaa tgtttcagaggatggatatgtaattaccctgatttgatcattgcacaatgtatacatgtagcaaaacatcacattgtgtc tctgaatccatgataccactgaaaccagcacacatgatcgcagtaaaacctcattatacttcctccactattacaccaatac atgttccaggtataaagacccacaagataaagaagetcagagtegttagaaacaggagcagatgtacagggtttgcctga ctcacactcaaggttgcataagcaagatttcaaaattaatcctattctggagacctcaacccaatgtacaatgttcctga 50 tetgcaggaaactttatttectacttetgcatgccaagtttetacetetagatetgtttggtteagttgctgagaageet gacataccaggactgcctgagacaagccacaagctggtgagttgtaggcatttttttccattactttctgattcataggct caacgcacctcaaagctggaaatgccgggtctgggtacaccctggggaactgcaaagcctgcacacttgggggaaatgat caagatgagaggcaggggtggggatggcatgtgcaccaggagatgttagagaaaccctgaggaagagcagcagcag gtgatgggggagagtgggcagcaagcgaggccaggacagccactctgctcagtcaccagtccacacacccaggggctcac 55 tctgcccctctgagcacccaaggacgttaaagagctggaactgttagtctaaatataggaccatccaagctctgaaccaa gttctgggtgacatgttctgacacttgaaatgacacctaggacagcacatttcaggcatcttgctcattgttcactgtag tagaagetacatgetagecagttgtaaaaatgaaattaagtaatgtgtgeacageatttaacatageatetgagetteag gagcactcaattaatgaccacagttgtgattctttaggcagatgcatttttttccaactttgatcagaggtcttatttag 60 cttctccagatttcaagaatctggctcagtgatatgaaatacaagacttgtgaaaagtgtcaattgcaagagaaatggaa ggataaagtatacaggtgggtggaaaagaaattcacagtcactgccagaaaaaaattcttgagaatcaagtcctgatga tgttagggcttatagttcttattataaagagttttatgtactcaltcagtgaacatttattggtgcctcctttagccagg tactatcataagagctgaaaataaaagcataatccagtccttgatcttgaggaacatgctgtgtagcagataacataa taagtgcttatctagatgcatgcagtgttatgtgataagagtaatatgacagaggatacagattaggcttcacagagaaag ggggatttgagcaggaggtattgaagggtgaatagaagctcaccaatcattttgggcagaggggcaaggacctgcaaaac agcccaccacatataagtcatagggctactggaggttttaagctaaaagtgactattcaatttcaacttaagagaagata 70 caatggaggaatccacaatcggaaggagttttcagcagtgccccatttggggttgggttgaatttgaggtccctgcatgat 75 acccactttgctcacttcagtgcctaaaactgagtatggttcatagtaggtgttcaataagtgttgatgcagtgaataca tqcatggggagatatgcatcaggcaatgggaaattcaactctaaggcttaggggaaagctggagcttgaagacagagctt tagaaaacagtagcatagaagggagtaggaaccatgagtttagacaatacaattcaggaagaactttgtagcaaggataa agaggcaaaaaattaaagaggtgagagctaagtgtggtgcctggggaatcttaaggtgtgggcacggggaggaggagcca gcaaagaacatgaataaaaagcggtagcacagcccctcccatctggaagccaaaaagaattgtaaatggaggaagttagc agaaggatcaaatacttgaagagggtggaattggaataaaaccagggcatttgaaaaattgggttgtcactgcaatctta acaagagaagttttggcaggatgatgaggcagaaagctgagagaatcatcagttagaacgtttttgacttcagagaaca gaaaatgcagttcataatggctttaaaacaggggcttgtttttctcccagcaatttgagaggccaaggcgggtgcatcag

gaggtcaaqaqaccgagaccatcctggccaacatggtgaatccccatctctactaaaaatacaaaaattagcggggcatg gtggtgcacgcctatagtcccatctactcaggaggctgaggcaggagaatcacttgaacccaggaggtggaggttgcagt aaggtgaatagttcaagggtgggtttaggactcagtgataataggattctgectggcttctcatggttctctaggtcttc cattcatggcaccatgccctcactaggcatgctgccagagcaggaggggcaggtggagggttctctttgtgtctcttat cagggaagaagagctttctcagaagccccagcagactcccttttcatattatggtccagcaatgagtcacagacctatg caccacctgcaaaggagccagagaaaacaaacgcccagcgcttttagcctgaaaatgagaatctggtttgctggggaaga taaagggtgtcggaaaatggctgttgggtaaatcattgatgtctgccactaggaatgaaaggcaaatcaggaactggcac acatgctttcagggagatggctgcaagggagagggcaaagactgggaagttgcttatgtggtgccagactatttggaaga tcatggattgcggtgtttgtgtgtgtgtggtcatcattttgttctttgttacagaacagagaaagtggattgaacaagga cgcatttccccagtacatccacaacatgctgtccacatctcgttctcggtttatcagaaataccaacgagagcggtgaag aagtcaccaccttttttgattatgattacggtgctccctgtcataaatttgacgtgaagcaaattggggcccaactcctg cctccgctctactcgctggtgttcatctttggttttgtgggcaacatgctggtcgtcctcatcttaataaactgcaaaaa getgaagtgettgaetgaeatttaeetgeteaacetggeeatetetgatetgetttttettattaeteteeeattgtggg ctcactctgctgcaaatgagtgggtctttgggaatgcaatgtgcaaattattcacagggctgtatcacatcggttatttt aggaacattttggggctggtcctgccgctgctcatcatggtcatctgctactcgggaatcctgaaaaccctgcttcggtg 20 togaaacgagaagaagaggcatagggcagtgagagtcatcttcaccatcatgattgtttactttctcttctggactccct ataacattgtcattctcctgaacaccttccaggaattcttctcggcctgagtaactgtgaagcaccagtcaactggaccaa gccacgcaggtgacagagactcttgggatgactcactgctgcatcaatcccatcatctatgccttcgttgaggagaagtt cagaaggtatctctccggtgttcttccgaaagcacatcaccaagcgcttctgcaaacaatgtccagttttctacagggaga cagtuggatugagtgacttcaacaacacgccttccactgggagcaggaagtctcggctggtttataaaacgaggagcag tttgattgttgtttataaagggagataacaatctgtatataacaacatcaaggtttgttgttgaacaatagaaacctg taaagcaggtgcccaggaacctcagggctgtgtgtactaatacagactatgtcacccaatgcatatccaacatgtgctca 25 gggaataatccagaaaaactgtgggtagagactttgactctccagaaagctcatctcagctcctgaaaaatgcctcatta ccttgtgctaatcctcttttctagtcttcataatttcttcactcaatctctgattctgtcaatgtcttgaaatcaaggg ccagctggaggtgaagaagaagaatgtgacaggcacagatgaatgggagtgagggatagtggggtcaggggctgagaggaga 30 aggagggagacatgagcatggctgagcctggacaaagacaaaggtgagcaaagggctcacgcattcagccaggagatgat actggtccttagcccatctgccacgtgtatttaaccttgaagggttcaccaggtcagggagagtttgggaactgcaata acctgggagttttggtggagtccgatgattctcttttgcataagtgcatgacatattttttgctttattacagtttatcta tggcacccatgcaccttacatttgaaatctatgaaatatcatgctccattgttcagatgcttcttaggccacatccccct 35 ggctcttgcttgatctcccaggaggtagtgattatgagaagggggtggagaatgatgagttccttcaccaggagcaaag gacggggatcgtgtggaaccactgcagaactatttccggaatcaactaagtggagagagccaggaaggctgcatcagaac tcttttccccacagcctttttcacatagctcttggctgtaggattgccccactccaaaaaccagtgtgtggaggtccagg aaacqtqaaaatqctqtattaqtcacaqaqataattctaqctttqaqcttaaqaattttqaqcaggtggtatgtttggga qactqctqaqtcaacccaatagttqttqattqqcagqaqttgqaaqtqtqtqtqtqtgtgggcacattagcctatgtgcat gcagcatctaagtaatgatgtcgtttgaatcacagtatacgctccatcgctgtcatctcagctggatctccattctctca ggcttgctgccaaaagccttttgtgttttgttttgtatcattatgaagtcatgcgtttaatcacattcgagtgtttcagt gcttcgcagatgtccttgatgctcatattgttccctattttgccagtgggaactcctaaatcaaattggcttctaatcaa agcttttaaaccctattggtaaagaatggaaggtggagaagctccctgaagtaagcaaagactttcctcttagtcgagcc 50 ggctgtttttttacactgtggtgtggaagattgtgtgttgtgttcacaacttttcacttcttcccctgtgtgattacacaca 55 cctgcccttgtggtgtgacttgcagtgcgccctacaggccacacaaccccatgcctccaccactggctctgctgctgga atgtgagcagaagtgacatctgcctcatccaagcagagcctcttgctcagccacaggaaggcccattccagatcacaccc gtcagcccgtgcgccctggtgaatgagaagacacagggagctgcagccacatataacatgagcaagaagtctgtgtttgc gccagactgggttggaaacagaaagacagatgttaatgccagtgtctttacaactccaagtccaagtccaggctgtggag
tgggagggtagaagaggtcctgtgcacagtcacagtgcgctgtgcagagcaggaacagaggcatctgtgaaaagtgctg
agagcctggaggacagagtgactaatgcaatgacagtcttgcatcataggaataacagccacagcaggattttattgctg ccagccatctctctttctaaagtggaatcctcaagtctcgtttattctggggacatttgagtaggctgttcgagttaagc agcccaccccatgccacctcccttgatctgtgatatccccagcagctggggaggttggagcattttgcaaagaggccccg aaqcctccagaaagtaaaccttcaagagcccatccttccttcttttgtttttgctcattatgaaaacttccctgaca aattgaaaaggcttcaggtgagattagcccacaggaaaaaccaccaagggccacccagaggggccacactgtgacagaag gagtatgggctggtgagctgacctctggaagacagtgcatgaattgaggagaagagattggttccaggcatgggaggaat tgtgtgtgtgtgtaaacagagtcctgtaatgcaaggtccggccttggcagcccagcctggagccacagtgagatgtgag aagggcatggactaacatcttatttcatactatccettataacacatcctaatgtaatcagctcacaatatgaaattatt 75 tcatttctctccagtcattgtttcaatggggccttagggttgactggattctggaggtccctgcctagaggagggggtgc attotgtocotatgtococtoctgotocatoctocacagcacgtgoctagtggtotacottgtggggaattottgtacot ccctcttctaggcatggactagcattgagaagtgggagagtgttaggaaaaagggcaaatatagacataccttgtct tattgtgctttacagatattgtttttgttgttgttgttgttgtttacaaattgaaggtttgtggcaaccctgcctcgagc aagtetattggtgetgtttttecaacagcatgtgettgttttacatetetgtgteacattttggtaatteteccaatatt 80 tcaaactttgtcattatttctatatctgttatggtaatctgtgatcagtgatctttgatgtcactattgtagttgttttg

tttttttttgaggcagagtcgcactctgattgcccaggctggagtgcaatgatgtgatttcagctcactgcaacctctgc ctccccaggctcaggtgattctcccacttcagcctcccaagctgggactacaggtgtgcaccatcacacccggctaattt tttttttgtatttttaggagagacagggttttgccatgttgcccaggctggccttaaactcctagactcaaacaatccac ctgcctcagcttcccaaagggctgggattacaggcatgagccactgtgcccagcccaagacacaataatattgaaattaa gccaattaataaccctacaatggcctctaagtgttcaagtgaagggaaaagtcccacgtctctcactttaaatcaaaatc tagaaatgattaagcttagtaaggaggacatattgaaagtcaaggccaaaagctcacctctgcaccagttagccaaattg cgacttcacaggaaaagttcttgaaggatatttaagctctactccagggaacatgcaaatgaagagaaaacaaagcagcc atattgctaatatggagaaagtttgagtggtctggagaaaagatccaaccagccacaacatttccttaagtcaaagccta atccagagcaagactctaactctctctaatgctatgaaggcggagaggtgaggaagctgcagaagaaagtttgaagc 10 agggagaagctgtggcaagttatccagaaaatctagataagataattgatgaaagtgtctacacgaaacaacagattttc tgcaaagctccacaggacaggctgactctctttttagaggtgaatgcagctgatgactttaagttgaagtaaatgttcat ttactattttgtaaatcotggtgtcattaagaattatgcgaaatctactctatctgtgctccataaatggaacaataaag 15 cctggatgacaacatctgtttacagcatggtttactgaatatttcaagcccactattgagaactattgctcagaaaaa aagattcctttcaaaatattactgctctgcaccatgtcgatcaagagctgtgttggagatgtacgagaatattcatgttg ttttcatccctgctaacacaacatccattctgcagtccatggaccaagactttcaagtcttattaagaaatatatttca attgatggatetgagcaaagcaaattgaaaagcttetggaaagtagteattattetagatgceattaggaacattttgtaa 20 ttcatgggaggaggtcaaaataccaacattaacaggagtgtgaaagacattgattccaacccccatagatgactttcagg ggttcacgtcttcagtggaggaagttgctgtagatgtggtggaaacagcaagagaactagaactagaagtggagcctgaa gttgtgactgaattgccgcactctcatgatcaaacttgaacagatgaagagttgcttcttacatatgagcagtgaaagtg gtctcttgagatggaatctcctcctggtgaagatgctgtgaacacggttaaaatgacaacaatcgatttagaatattaca taaatttagttaataaagcagtggcagggtttgagaggattgactccaattttgaaagaagtgggtaaaatgctatcaaa 25 tagcatcacatggtatggagaaatcttttgtgaagggaagagtcgaccaaggtggcaaattgcattgtcatcttatttta agaaattgccacagccaccccagctttagcaaccaccatcatcatcagtaagcagccatcaacatcaaaacaagaccgc catcctcttcagcaaaaacactatgacttgctgaaggctcagatgatggttagcatttttagcaatacaatatttttaat taaggtatgcacattggtttttctgacataatactattgcatacttaatagactacagtataggataaacacaactttta tatgcactgggaaaccaaaaaggttatttttgggatatttgctttactgtggtggtctgaagctgaactcacaatctcac 30 caaggtgtgcctgaacctctttagctaactggccactgccacagtccactctgtgttggtcaagatgccccagagtggca ggcacaetgtgtggtcacatccaagggcctagatatggtgggggctccaaatggatctagatatgtgagatctctctttg atttgacttcttccaacccattttctgggtgctgggctcatctcacccagaaagtaggacccaatgtgacagttcct gcccagttccctcctgtggtagccacttgacccaggggcactcttgatccttgcagcctcacttacacaccctatctcta tgatgtgatgggtgtggatacagggctggtgctgtcatcttctagtaagccctgggagaggtgtctgagccaaggtgtca gtggttttctttggaactgtgagtgcataacacttctttgccttcagccttaggccatagttgctagttctgggacaacc agaaaagccctacataatctcgtgttatgtgcagagctgagtatagagctccaggtatgatctgactcacttaagatcac 40 agtgagtctattgtattgtattgtagttagcttagacatctgttactgtacctacatggcactagcctcacgcctagaca ccgatctgaaagaaatcccctaaatgcatagagaagacttctcagctgagctaaggggctcccaccaggtttgagcctat ctaatgaatccatgaggtagacagcctgcacatgtccacttggtttgatgaattgcacaaatccctatgggggatgtggt tcatgggctgggaagtgggttaccctgggaaaggtctacaggacagaggcagggatggagacaacagcatggtgagttcc 45 attgttgaggcacatgggtaacaaagcgtggcactggatgggggtagattcttcctatttctgtgaggatcagggggact ccctggctctcctgctaaaggtggctctagggacaggaagagtgtacttcttgacagggatgtcagagcactgatggtga caatcagtgtgacactgctcacatgactgaacaaccgagaagagcccgactgtctactgaacaacgggaagagcccgact tttaatccatttatagaagttaaagacaggcttatttaatctctatgaagacagagtggcccttacctctgggtggagca 50 aactcaccaagctgtaccactaagtgtgttcttcctcaataaaaataataaagaactacacttataaagaattttttaat gaacaattaatcgaaaagtgcatgggaaaagtcaggattgaaacatcatgttttaaaagacattgttttgatactgtgag aatgtacctaagtttttccttttttctgtttttcccaattttatacaatgagcatgtgtttggttttataattagacattt tgtttgtttggtttggttttgagacacagettgetgtcacccaggttggagtgcaatggccaatetttggttcactgcaa cctocatctcctgggttcaagagattctcccacttcagcctcctgagtagctgggactataggggcgcaccaccacatcc agctaattttgtgtatttttagtagagatggggtttcaccatgctggccaggttggtctcaaactcctgacctcaagtta tccactcgccttggcttcccaaagtgctgggattataggcatgagccaccgcacttggcctagacatttgtttttaaaaa taaaagattcatttgccctttttacagcccgtctcactgttgactgatattgaccaggagtcaactcaggccccagggat 60 tttcacaacagctgctgtatggcagggtttctgctcactgtgctcatgtagttggcccttgcacccaaagtgaataatta acattctccccatcctgttgacgatgctctgaaaatatggtccagaaatggtgtgagcaaggagacagcaaagcaatgct tggaacataggtgcagtgactagacatggggcagctgtttaaagacaaaaaggccccaaaaaggagggatggcacgaaac accetecaatatgggcatggagtetagagtgacaaagtgateaaaagtteattteetatggggtgteegaatgtaettaa taataaaaagagaacaagagccatgcaaactgagagggacaaagtagaaagagtagcagacaccaagcaactaagtcaca 65 gcatgataagctgctagcttgttgtcattattgtatccagaacattttcatttaatttaatgctgaagaatttcccatgggt ccccactttcttgtgaatccttgggctgaaccccctgtcctgagtggttactagaacacactctggaccagaaacaca aaagtggagtaacacacactgcaaagctgtgcttccttgtttcagcctgtgaatcctcaccttgtttcccatctagccta tatttttcaaactaacttggccatagaatcatgtagtatttagggtggaagctgccccaggtctagcacgtcatttaaca cagaacatggcaaagcctcagctctgcatggtgaaagtaagaaccagcaattgccacaaacagaaatacagtgttggtcc tatgctattttctataaaattttatattaatttatttgttacctatttttgaactctttcaaaagcacactttatatttc cctgcttaaacagtcccccgagggtgggtgcccaaaaggctctacacttgttatcattccctctccaccacaggcatatt gagtaagtttgtatttgggttttttaaaacctccactctacagttaagaaaactaaggcacagagcttcaataatttgg tcagagccaagtagcagtaatgaagctggaggttaaacccagcagcatgactgcagttcttaatcaatgccttttgaatt gcacatatgggatgaactagaacattttctcgatgattcgctgtccttgttatgattatgttactgagctctgttgtagc acagacatatgtccctatatggggcggggttgggggtgtcttgatcgctgggctatttctatactgttctggcttttccc aagcagtcatttctttctattctcaagcaccagcaattagctttaccttttcagcttctagtttgctgaaactaatctg gtaactaagagtttgatgtttactgagtgcatagtatgtgctagatgctggccgtggatgcctcatagaatcctcccaacaactcatgaaatgattcatcccaacaactcatgaaatgactactgccaacaccagacgagaaagctgagggtaagacaggtttcaagcttggcag

10 15 gttagttagcttctgagatgagtaaaagactttacaggaaacccatagaagacatttggcaaacaccaagtgctcataca attatettaaaatataatetttaagataaggaaagggteacagtttggaatgagttteagaeggttataacateaaagat agatttgcagagagatgagtettagetgaaatettgaaatettatettetgetaaggagaaetaaaeceteteeagtgag ttagtatataattetttatggtteaaaattaaaaatgagettttetaggggetteteteagetgeetagtetaaggtgea gggagtttgagactcacagggtttaataagagaaaattctcagctagagcagctgaacttaaatagactaggcaagacag ctggttataagactaaactacccagaatgcatgacattcatctgtggtggcagacgaaacattttttattattatttt ttgggtatgtatgacaectcttaattgtggcaactcaaactacaaacacaaacttcacagaaaatgtgaggattttacaa ttggctgttgtcatctatgaccttccctgggacttgggcacccggccatttcactctgactacatcatgtcaccaaacat attcaaaatcggttgcttactagctgtgtggctttgagcaagttactcaccctctctgtgcttcaaggtccttgtctgca 30 35 gctatagagcacaagattttatttggtgagatggtgctttcatgaattcccccaacagagccaagctctccatctagtgg acagggaagctagcagcaaaccttcccttcactacaaaacttcattgcttggccaaaaagagagttaattcaatgtagac atctatgtaggcaattaaaaacctattgatgtataaaacagtttgcattcatggagggcaactaaatacattctaggact ttataaaaagatcactttttatttatgcacaaggttggaacaagatggattatcaagtgtcaagtccaatctatgacatcaa 40 ttattatacatcggagccctgccaaaaaatcaatgtgaagcaaatcgcagcccgcctcctgcctccgctctactcactgg atctacctgeteaacetggecatetetgacetgttttteettettactgteeeettetgggeteactatgetgeegeea gtgggactftggaaatacaatgtgtcaactctfgacagggctctatttfataggcttcffctctggaatcttcftcatca tcctcctgacaatcgataggtacctggctgtcgtccatgctgtgtttgctttaaaagccaggacggtcacctttggggtg gtgacaagtgtgatcacttgggtggtggctgtgtttgcgtctctcccaggaatcatctttaccagatctcaaaaagaagg tetteattacacetgeageteteatttteeatacagteagtateaattetggaagaattteeagacattaaagatagtea tettggggetggteetgeegetgettgteatggteatetgetactegggaateetaaaaaetetgetteggtgtegaaat 50 55 cccatcaattatagaaagccaaatcaaaatatgttgatgaaaaatagcaacctttttatctccccttcacatgcatcaag gtttagtgatctgaacagaaataccaaaattatttcagaaatgtacaactttttacctagtacaaggcaacatataggtt gtaaatgtgtttaaaacaggtctttgtcttgctatggggagaaaagacatgaatatgattagtaaagaaatgacactttt catgtgtgatttcccctccaaggtatggttaataagtttcactgacttagaaccaggcgagagacttgtggcctgggaga 60 gctggggaagcttcttaaatgagaaggaatttgagttggatcatctattgctggcaaagacagaagcctcactgcaagca tggccaaaggagggtcaggaaggatgagcatttagggcaaggagacaccaacagccctcaggtcagggtgaggatggcc 65 atgaggatgcagagtcagcagaactggggtggatttggtttggaagtgagggtcagagaggagtcagagagaatccctag tcttcaagcagattggagaaacccttgaaaagacatcaagcacagaaggaggaggaggaggtttaggtcaagaagaagat ggattggtgtaaaaggatgggtctggtttgcagagcttgaacacagtctcacccagactccaggctgtctttcactgaat gcttctgacttcatagatttccttcccatcccagctgaaatactgaggggtctccaggaggagactagatttatgaatac 70 75 80 getettteagteaagtgtacatttagagaatageacataaaaetgeeagageattttataageagetgttttetteetta

ttgacccttttcctgagacaaattgccagaatagtttgtatttagagatggtacctctaagagtaaggttgctggttgct gagcaattgacttgaaaacttttaaaattcaaattttaattccactactcaaaagaattgccatgttttaaaaaagagaa gggacccgtctgggtcacgttcacattttgaacatgctggttttcagtcactgcacactcatctcccagcgcaggtcatg ggcagcagatgcaaaagctgcccgtggtcctatttggaggtgcatgaaatgagcagaagacagaatagcttgatctgact agaagggcagettgtecetaccaagaettgaaggattgcettteatetgttagggtaaaaggtagaatgaaccaaggaag tattaaatgtettecaatgttagcacgaagaaaagetatttgcagtgttgccagcetttccagagcccgtccccattacctcccaggcccatgcetttactccttggagttccaactcacgaccttcaggatctgactttattcaccaactctggggtg agagatagagetecaaatgcaaacataactgeteaagtgttaacaettataatgaaaacataagaattaecaecaaetac tgttgcccaggctggagtgcaatggtgcgatctcggctcactgcaaccactgcctcccgggttcaagcaattctcctgcc tcagcctcctgagtagctgggactacaggcatgcaccaccacgcctgggtaattttttgtatttttagtagagacagggt 20 ttcaccgtattagccaggatgctctcgatctcctgacctcgtgatctgccgcctcggcctccaccgaagtgctgggat tacaggcatgagccactgtgcccggccaacaatcatgaactttctaactgcagttccttgtagcttgttaacacatcca cttacttattgtcagagtacgtggagattttccacaaccctcggggataaggctgaacagaagaggcaaaaacgtgaaaa Calttcgatagctcctatactttgaaataaaattcactgtaaaagttgcttgtatttttccaaaacagagtcaaccctta 25 gttactacgtggtttgataatccgttttgtgtcattgtgattctgtcatgtttttggggacttatttttgtttctctgggt ggtcactagtttttttaaagcattcatggaagagtgtgaatcttttacaagctaggaagccatggcaagccttgggtcat actgcccccgcgaggccacattggcaaaccagcaagggtgttcaacttccagacttggccatggagaagacatacgagga ggcttttcacattcagctctttaatgtttgtctctgccggcaccatcccagttgtgaataagaggtatttccacagcggc tcagggtaggtagtgcacagctcacattcatcatttctgaaaaccgagaggagtctccattcggggtacaggttgatgcc tgtcgtggaatgaaggttccaacacccagaccaatctctgcagtgtgctctcatgagcttgcaacaagatcagaaaa tgttttgtgactaagcatttttcatattgcataaaatgcttcaagctcctcccttgtttctctctataatcctgtatatc aatatgcggtgtttggtttttgttcttgcgatagtttactgagaatgatggtttccaatttcatccatgtccctacaaa ggacatgaacatagcaaagacttggaaccaacccaaatgtccaacaatgatagactggattaagaaaatgtggcacatat acaccatqqtaaatttctttatcattcgcactctcctttctctattattgttattgtaactgaaccgcaqattagtcact 40 cattgcttgcagaatccaattaacaagagcgaggtcagatataaagaaaatgatttattccaaacctccttcagggaaga ggtgcagcctcctgcctctaaatgcactgcttcgccaggcgtggtggctcacacctgtaatcccagcactttgggagacc gaggagggcagatcacttaaggtcaggagttcaagaccggcctggccaatatagtgaaacccctgcctctactaaaaata caaaaaattagccagacgtggtggcgggtgcttgtaatcccagctactcgggaggctgaggcaggagaatcgcttgaacc tgggaggtggaagttgcagtgagctgacatctagccactgcactccagcctgggtgacagagtgagactctgtctcaaaa taaataaataaataaataaataaataaataagtaaatgcactgctttgcttttggagcagaaagcaggcactttgaaaagg caggggaggaagtgagcaagggcagggggtctgcacactggcatggtgcctgatctatecaggcagttgaattggcactt tcataggcagaaataagttgaaaaagtggcctaaaactctctaggtgggagtggatagtgggcatgccttcaacctgcct ttctggagggtgagttccatggcaaccccctgaagggtgagagttccatggagatcatgctttggtctgtaaatcagctg ttaactctctagaaagttctgtcttggagcatatagttagatgaacttgccctgtaaagaatgtctggtgaaggggaagt 50 aaaaggtgagatttgcatttctaaagggctaagtagaacgtggggtacaagaggaaaaggagaaaagagaaaataatttaa aaaataattgtaacttattcccttttacttagaaaaaagggaatactcagttacattatcacctcgtttacatcaaaccc tettatggaateetatggtttgaaaacaaaaaggttgttgaggaccagtgagcccaacccctttgctttataaatgaaga gcattgcctgccctaagccccagagactctgatgtcgtgggtctggagtgggctccaacagcggcatgttttgatggtgctccagtggcacgccagcgatgagcctttgagtagggaaagtaggagcactcgtgactcccttcacgatcagcacctgt gtgctaataaattcacaaaagccaacatattggagtcactcagggagttttacaaatagtgaggttaaatccaacctcaa qtqqcatqtqcaccaqqaaqaqtctcaactttcataacagaacattccccaaqctqqttttttttaaaqcatqtgaatcta gacttcattggcaataccaaagatctgtatttgaggctccaagtatttcactttcatttttggttttgggttatgttttc accetteettteeaagtgaaaagtaaacagaagtgggatgtetggegeecatgetgagettggeaactteaaatteaata gattettetecccccatttecttatecetgeagtgagecatecttettaaetetttecatgaaageattatteetgaaga actgggaactcatgccagccctgatcaggcaatgataattctgcagagaattagaatttagatttaaattgtcaactctt aacttaatctttttggttttgagtcaagacaattcctccttttgaaactgcataccgctgaatataataaaatgtaatta agattaaaaataagaaactaatgggagaatttcaatattgtctctgttcactttaaaattcctctacttaggtttactgc cattaccaaagactattcaaaaaatcctttttaggagaatcctaatggtttcctgacatataatcaaataaggactctgtt cgagttccagccttggggctgtgggagcttgggcaagtgacttaacgtctctggctctcaggatctaaaaggatttccag 70 tagtaatttggggtgttactgatacaggagctaaaaagaaattatttaggtggttagtgagggtcagagagtcctcggta alagataagcaagctggaagcttgcacgggtgaatgccggcagctgtgccaataggaaaaggctatctgggggccaggca tgttcaacatggattctccatcttcccttttctttgtcaaccaagtgtacagtaaaggaacaggcaacatggcacgggcc aggtagagaaccettetgcataataaaagattagggtgagatggccagettetteeegtgetatgtaaatggcataeetg gtccaaccagtcttttgggccctgtgtaaatcagacaccgcctcctcaagttagtctataaaaccccatgcattttaccg tgaaactgggagatccactcggaaccccctcctgcacgagagaccttttctctttttgcctattacacttccgctcttaaa ctcactgctcatgtgttagcatccttgatttccttggcatgaggcaatgaaccttgtgtattaccccatacaaatgatgc tgaggaactgaatgttttccatgatttaatttaaatgtggccaatggctactgtaggagacagtgtgagtctggcatatt ataaataataaatattaatataatttgaactttggcatcagtgtttcctagatttgaattactatgcaagttgcttactg tttccaagcctcagctttctaatctgtaattggggctaataatagtatctgccttacaggtttgttcagaggataaatga

gaaattgcatgttgagggcttaacacagtgcctggcacataaaagctctggtaacagttagccactttaataatttgcta ataatggctatttcttcttcatagattaggatgtgctcccccaaacagtgcacttagacatagcgggcaatccagctcactc tctgcagtgagaggaagcactggccgaccagagtcagccagggggctcatgggtatgaaatcaacagcatgattttgtaa
gtaatggatggaaagggcctcacaactttatggcactgtgttcaatttgcttggtcttctgtagctccttttgaaagcct
tttagggtggattaacctgctaccaataattctggtcagatgtagactccatagctcaaagcaaactgagaggg cagcaggccaattccccaccccttccttctggactctgacagaagcttacactcaaggaagaagaagtaaggaattaacgt 10 caaacattgaaggagggccagctatgtgccagatgccaactcattgccatgaaagagagtccctgtccttattgaaattcac tatttagagagagaaaagcaagcaaaaaggcaaagtttgaaaagtactgttgaagtggcatcattgtctggggtgaatacct gaggtttgtggtctcacgccaagggaatcaaggactcaggcacacaagaagtgagtttaagagcagaggtttaataggca atgcaaggcattttatagacgagcttgaggaagtggtgtctgatttacttaggacccgagagattggtcagaccaggtgt gccatgttgtctgttccttactgtacacgtggttgacaaagaaaagggaagatgaagaatccatgttgaacatgcctggc ccccagatagtettttcctattggcacagetgccggcattcactettgcaagettccagattgcttatctatgtctgcag 20 cccaattttacaggttgctctttgctagaaaagaaatgatttgggggctgcttttcattaaaaggaaaaccttaccaagg ttaaaaagaaaaaaatttettttaatgeetalgttaetgtgaaeagtglegggataaggetelgagageeagatgagga aagctactgagtggagcataggagtaggaactcttatgcaaatgtgcagaggtgaaataaagcaaggtatagtccaggtg 25 gtgcatgcattcctcctgcaggagatcaggagcagtgggcagtatggagtgacaagaagattgggaggtactccttctag ccctcccctctgctctgccctccactggagcagaagcaaagcatatggtgaaggggaacaaggagtctccccagcacagt acccgagtgcattagctatttatcactccacagtccccattcacgtgttaattcagcatttattgaatgcttactgtttg caatgtctatgtcaagctgtcaagtgtagtttttattctacaggccacaggcaccccctaactgtgttaaacaagatggtagtattgagacaggaataataataagggtggtcacaggagaatggaagattccaggcagcagtttgactagtaaaaaaaggaaa 30 35 gatggagtctggctctgtcacccaggctggagtgcagtggcgcagtctcagctcactgcaagctctgcctccagggttca ggccattctcctgcctcagcctcctgagcagcagggactacaggcgcccaccaccacgcctagctaattttttgtatttt Cagtagagatggggtttcaccatattttattttatttttgagacagggtctcactttgttggctcgctgcacctctgcc tcccaggetcaagcaateeteeaaeeteageeeeeaagtagetgggaggacagaegtgeaecaecacacetggetaata ttttgtattttttttttgtagagacagggtcttgccatgttccccaggctggtcttgaactcctggactcaggtgatcagc ctgcctccaccttccaaagtgctaggattacaggaatgagccaccccacccgaccacactcccatttcttgagtgtgtgc attttgctctgcaataaatctctctactttcacttttctctgactcgtccttgaattccttcttgtgacagcgtcaacag cctggacaccaggtgcagtcaacgtctcaccagtgtttagggacctcccctaatccactggtatcagcatgatcagactt agaaagttetacaggaaaaaggtggggccaaggtgggacaggggaaaggaattgttgcacattaacagtgcaatgcagag cactggtettgtttatgtccaggttagaacaaaccaatgagaaagcacatetttgagacaactggagaaatttgaacact gactagatataatattatgttaattatgctttaattttggggtacaataatgcttttgtagctatttctaaagagtcctta tetettaaggatacaetetaaaataetagtggattaagttatatgatgtttagaetetttttaaaataatecagtggggt
gagaggcagagggaagggaggagcatagaggaaacagtgttggccatatgtttgtaattgttaaaactgagtgatgg
aatatggagatttaacatattaataetatttetgeccatgtaatatttgaatatttecataataaaattgagagagaga 50 55 atgtcccatcacagaactgccctgggtcatgtgttttccaagtccacatgtccggtagttccttcttcctatgaccaat gccaccagtettccagcactgtectttattgctaggcaaacctgagccatectettettettgcaacttgtgcctgaagt agtggattgcttgagctcaagagttcaagaccagcctgagcaacatggcaaaaccccgtctctacaaaaaatacaaaaat 60 gttgtgttacgtgcattcatgttaagagaccaccaaacaggctttgtgtgagcaattaagctttttaatcatgtgggtgc aaattacagttaaagggggttgtcctcttgcgggtacaggcggggtcacaaggtgctcagtggggagctcctgagattt attgtccaggagaaggaatgtcacaaggtcaactgatcagttagggtggggcaggaacaaattacaatggtggaatgtca tcagttaaggcaggaactgggtattttcacttctttgtggttcttcagttgcttcaggccatctggatgtataagcgcag 65 gtcacaggggatatgatggcttagctcgggctcagaggcctgacattcctgtcttcttatattaataagaaaaacaaaac aaaatagtgatgaaatgitiggggcagcgaaaattttigggggitggtatggagagataatgggtgatgtttctcagggctg gatattgtggggttgttagaaagagcaattctcatatagaatgattggtaatggcctggatgcagttttgtatgaattga 70 75 aaatgaccaggtagggtccagtccatcaaagctgtagagtgtgaggggtcagacttgacaaggactgattgcccagctaa ggtatetteacatggetgggagtttggaggaggeaagagattageageetggegaattteetgtetageetgetgga

ggactggaaqataaaggcaacaggtcgtgggcctggatcctgtgtgaggactctagcagcacagccttgtatttcagctg tgtgtaaggaaaaaggatgggacgagtcggggagtgctagtgtgggagctgtctccaggtcctttttgagagagtgaaag gaagaatggggaaaagacttatggtctatgggattagttaaattaccctttgtgagctagtaaagtggtttgattaggat gggtctgggagattaactgaacagagtctgcaggaagggtatgtgtatgttgatggagcattataccaagataggtaatg ctaggggaagaaatttgtgcctcagagggcaatactttgtacccctttgagtaaagatgttgaagaagcaggctagtgtc ctgctgggaagattggtaagaggggctgcaaagaagaagatcatcaacatattgaataaggtgggaggtagatgggtgaa aagaaagcagatcatgagaaagggcctggccaaagtaatgtgggctgtccctgaagccttggggtagaaaaatccaggtg agttgttgttgggactggtgggtgtcagagtcagtccaagtaaggcaaaaagggctgggaggagggatgcaaggggatagta 10 aagaaggcatcttttgaggtcgataacagaatagagttgtggaagggtgtattgaagataggagggtgtacgggttttggca ctataggatggatgggaaggacgatttgatcaacaagacgaagatcctgaacaaacctgtaagacttgtccggtttctgg taacccttttaaagcctgctgtgggatgggatattggcattgagcggggtaagggtgattacattttaatgggatgataa ggggtgcatgatcggttgccaaggtaggagtagaggtttcttatacttgtggattaaggtggggagatacaaggggagga 15 tgtgaaacaggtcttgagttgggtaaaagtgcagcaaagagatgtggctgcagcccaggaatactcagggaagcagataa tttggttaaaatgtctcagcctattaaggaagctggacaggtggggataactaaaaaagtgcataaaagaatgttgtcca agttggcaccagagtgggggagttttaagcggtttagaagcctcgccgacaatacccacaacagttatggaggcaaggga aacaggcccttgaaaagaaagtaatgtggagtgggtagcctccgtattgattaagaaggggacagacttaccctccactg taagagttacccaaagcatctgtgatggtccaggaggcttctgaggtgatcaggcagtgtcagtcttcagctgctaagct gagaagatctgggaaggagtcagtcagagagccttgggccagagttccaggggctctgggagtggttgccaggcaagttg aacagtetgattteeagtggggtetegeaeagatgggaeatteettggeeeagtggeeagattteeggeaettgaaggaa ggctggggtttctcttacagcggaggcaagtaattgcaactcagaaatatgttgtcacttggctgcctctttctattat tgtacaccttaaggcgagggtaattaaatcctgttgtggggtttgagggctggaatctaatttttggagctttttctaat gtcaggagcagattgggtaataaaatgcatattgagaataagacggctttctggcacctctgggtctagagaggtaaagt gtctaagggttgttgccaaacaggccatggactcagctgggttttcatatttgataaaaagagcctaaacgctaactga tttgggagaggtcagctaaagaaaaaggagcattaaccttgactatgcctttagctctagccacctctctaagaggaaat tgttgggccggtgggggagggctagttgtggaacgaaactgtaagccagaccaggtgtgaggagagaaggtgaccaaagg tttatagggtagggagcagaggctgggggaagaattgggacctggctaggctagcgaggaacagcctggggagggg 30 gaaagaggaaagatttgggatgagtcacattgggagcagagactagagagggactgatgtgtaaagaatgcctggacgtc ctggccacttggaactattgtcaagtttgtattggggccaagcagtattacagaagaaaataagatgtttaggtttttaa aagagtgcataaaagaatgttgtccaagtccatgcccttcttaatcaatatgggagctacccactccacattaccttctt 35 ttcaagggcctgtttcccttgcctccataactgttgtgggtattgatggccaggcttataagccccttaaaattacccca ctctggtgccaacttggagaggtcaggtgttagtcaaaggtgtttttaagttttaagaacacaggctaagggagaagaaga gggaatgaagcgtggaaggttgcccatagtgaaagaggtaagtttaaaagaggaaaggtagagacatggagaaggggggagg tgagcagccctgggctgtcatgtgggttagcagccaaagctggtgtcccagcaattgacttaccaccaagggaatgtggg gatgatcagacacaaaggaaggctgtcttcccaaatccatgatccatgttggagtttttggagttcatggataaaatgtg tctcctttgtctctactagagaggaaaaagaactggaatttgaaggacagggagattgaagggtagggagagaggctgaa gaagagagtgaggagaccgcttacccggtttgaaattggtgagatgttccttgggctggtctgaggacctgaggtcgtag gtggatcttctcatggagtgagggtgaggaggagggaccaatctcccgaaggagtcaccctgtccggggtcttcggcacc aaatgttatgcgcatccatatgaagagaccaccaaacaggctttgtgtgagcaataaagctttttaatcatgtgggtgca 45 aattacagttaaagggggttgtcctcttgcaggcaagggcaggggtcacaaggtgctcggtggggagttcctgagactca ctgtccagaaggaatgtcacaaggtcaattgatcagttggggtggggcaggaacaaattacaatggtggaatgtcatcag ttaaggcaggagcggcctattttcacttctttgtggttcttcagttgcttcaggcaatctggatgtatatgtgcaggtc acagaggatatgatggcttagcttagactcagaggcctgacaggttgctgcagtgagccaagatcacactactgcactcc 50 acagatatttattgagaagcaagtatgctggtgctagggttacaacagcgcacaaattcttgtattcaaggaatgaggta agagtatgcagataggagccagagaggtcaagaggcaattgcaacatagagtgacacgtgctccagaacacataggaggg cttccaggccccatgctgggctatcagagctggcttcctgcaggtggtgtggctcagctaaaacctgagaaccaagaatg 55 agccttctgatatctcagggttaaatcggcacaaatgaaaccattttataaccaaacaacattttccctcctgaactgca ctttttctagaacccatttaatoottcctaacatgttcaatccagccccgtgatttttcagtcaaatgcaagatgcgtag gattccttttctgttcagtgetccccagccaatctttttcccttctcccacccacagttactaattccagcgtttcagt tctcagcagaggatgacagttccaccaggagacatcagtgttatctggagacattttagttgtcccagctgagggcacag tgctgctggcatctagtgggtgaaggtcaggaatgcacctcaacatcctggaacactcaggacaatccccagcaacaaaa acctacccatccagaacatcaacagggctgtggctgaggagccctgctctagtgcttcctccttactgtatcctcatcaa ggagggctctggggcatgtcaggggctgctacaggctcctggcagatttcggcgacttactccagacttgtggaacattc 65 ttcccagcttgtttgtatctggaatggggtggggtctctcacacaggagaaattacaaggaaaagtgtacgtgacaggaa tqqaggaatttctqtqqaaacggtqtqtqaqaaatgtagqaaqaaaqttcaggaaatggtaagtggcatcttqag aqcagaaagtgagaaggagcagaaagaaatggggctggaacctgggaaggagaggacaggtggggatggccttgcacac cqtgggcactgaggagtgtgggcccatggcatgggtggagaggagtttcaagatagggagtagattcctattttgaactt cggattgccctggcgatgtggagactgtattggaagaaggcaagaatggaggagagcccctaggtggaggtttggcaat 70 gctctctccagaatatagcagaggcctcttccaaggtaggaaagccctgactggagagaagttaatggctctgagggctc aagggaggacttggattatcaggacttttagggaggcatatgatcaaggcttgggtcttggcccattgaaatggggagca ctggttttaggatgtgggtcaattagtttggttttcaggacaggctgagttggatatcctgggggacctccaggtggcag tgtcaggggaagctggatgtgctgacactgaactcagcagagtgactgagtagagatcgacatctggggtcacaggcagt ggatgccgtaggggtggactcaatagetcaagcagaacceggaggaatgcaggcagcaaaggagccetaaagaacagtg aacgtcaaatgttgcagagacatagagtaaggtaagagtggaaaaaacatccatggaaccctgtgatgcaatcggaatgc agaaagactttgtaactcctgcctggtctcctcctcctgcccactcatggcaaaggaatacaaagtaatgttccctccttc cgcctagaaaagcacaacttctgcccccaagccctgggctctcctgagaggacaggaccagcctctgaagttgaaggtcc tggttctgcccccaagccctgggctctcctgagaggacaggaccagcctctgaagttgaaggtcctggtttaccagatag ggaaggggccctttccaagaccctttccagaaggtgtggctgagatgggaaccgtggactctgtgcagatgtaggagctg ttgggggagacgtgagcaggaagaagcagggccttcacagtccccagcttaggggcctcaccacccagactgaagaccag

 $\tt gaccaaaccctttcctgcacagttacaatgtgtcatttaattttactaaagggaatattttttaaatgaggatgctactt$ tgtgtattaatttttacctctattcataaaagaaacgtttcttatctatttaagatgattcatatcagaccagtgtctgc ccaactcgactgaccctgtgaaaactgggcacttcacactccaatgatgatgagtccccagcagcatagtttaagg gagtgagtgggcagtgggcctcctgtgcacgtgacttcctccttcagtgtgcccacatgtgggttccacggtcttgtga dattgtgggtgtttagaaatttctgtttccattttctatcatcatcagagtaaattgaaatttgcaggaaaattcagaaccttccactgttacagtggatactgtggatactgtgagaccttgccagatgccctcttcaagccaatgcatctccatgctccactcccatag 10 tgtgtctcctqgaaqccctccccacaagtctgctgcatacaactctccttctcagagagcctgagccctggattcccagg aaatgtcaccaccttgaattctatcactctctcttttcttgccccatctctgacaagtaggtggtccctcaagaacctga gactgaggtaacacttaccctgggaatccttccctgctctcgtgagccaggccgggtgctcttgggacagctcccact gctcctgtgtgctcccccagcttggcacatgactccctgaattatagtcagttccgtacctgaatctccctctagaatgc cagtgccacgaggacagaggacggttccactttgttcactatttttctccccagggtctggcaaagttcctgggacttggg agaggtgtccttcaggagcttggcagaagccaaacggcacacttaagtagggcaactgaggtgagtttaatgaaggattc tatacaaaaatttggacaaggtatagggaggccacaatacacagtgcagtgcctggtgccagtgagagcagggcactatt cccactgcaaggccagacagggcaaggggaggggagctgcctgacaagagctgcccttacgtcaagggacacatcagccca 20 ctagaccccatcaggagggagccagggcctgactcccctgaccttgctctccaatcttctgcctaaaattccccatcagc caaacacactgaaaactgaaagacaggggagcctgctgttaataaggtgagcttcccccagaataaagctgggtagaga gtggagaatggatatggaagggcaaaaggaagatttataagacagtgggcactaaatatctatgagatgaataaaggaac cacattttacaacaacggtcattgaaacgctactcaatggaaagagatcatttcggtcactgtctggtgcagacaaatc aaagcccacatgcatcaaaaaggccatgtccgtgtaactccgacacggggcagacagcaaggctgaagcctatggggtat 25 gtggagccggaactgagagatcctgatgtaaatctagcacttgggaaaagggggactagaagaaattcacccacaggcag aggaaaacacaaacacttatctattttttgcctaggctttaagtggtatgggaaaaatctctgagactacaaatcctgtgc ttcatgcacaggtttataataccctcaaaatggaagaccccaaaaccaggcgcggaaaattcatatcaggccattgatgc cctcaatgttcccggctgaaacaaactcaaaactcctctggaaaggagtgctcccacttcaagccatgaaaagctactgc agagaaaataatccccagtcaagacacactcacattgaaactgcaaggcacacaaggaaatggatcaccttgagtgatag ctggcagagctaataaacctctgtatacctctaagaagctccacgcactagtataacccttaaagatttgatgaaatcat tactttattaaaattgtttttataaaaaatcaaaatccaaaaagcaacaaattttataccagagccaattcggtatat acaagggtgtcttactcttttggaatttgtcttattgtcctaactcagcacattgtcctggtctatgaaaagtcctagaa accettetaccetetgtaatgtaggagetttaacteaatagggttttttaaattettttttettgtettttttaatttttaattttteeattttttaattttteeattttt cacttqtctcctqattqqaqaqtattaqacaattctcaqqatttctttattttccttctttattccataqqattqqqaaa cccagtaggattgggtttaggcatatctctaaagcaccatgtttcaacgttttgatgtaagattgtgccctatttcttgt tcagttgctgccagcagatgttatagttttaaaactagtttttggtcattgagatattagaggagggaagagtctgctat cctgctttactcatcttcatctacactacactgtcatcttcactgcaaagtcctgtattaatgtttttagattctataac attttaacaggtgtcaaaaaatcttaagcaccacttcagcttgggaatctctaaatgtaatggtgtttgtgggctggact 40 gatgtetgegtettgttgttgttattgtetgtagtaatggagagecgggagatectggacacttectgttcatgggcact tgatgcattagctgcccagcagctgattacatttaaacaaggatgtgggtgaacccagggagaccaatctcagtgga atggtgggggcagaagccaggctgcagggtgtagagtagggaatgagcagtgatgaagtagaaacagagttttggacaact agtgaaactgcctggaagagggggagaagacagtaaatggtctgaccaatgttgaggtcaaagtgggtttgtaatct ttatttaagggacagatctgagcatttaaaaattctgaataatctaatagagaggaaaaagttgggactcaaagaaaatg 45 tgggaaaaaatgatgaaggttaaacggaatgagatccagagtgcagggggagagattagcctttggtgttagaggagcaa ctctgtccatggagagaggaaaaatgtagacataccacagttgcatttgaagttggggcctgaggagttgaggagttctg agaaaagcagaagatgagatcatttcctgagagtaaatgggagtcattagaacgggggtgaagagctggaagctttagg tagettgaaatagttgatggaaaaattggataaagtgacaatttgteacaeteagaacagetateagggaatetagaaga atctctggaagctagttgaagatcttaaattaccaatgtatcttgtccacatagctaagcggttttacttatttttattt ttttgaaacagggtetcactctgtcacacaggctggagtgtagtagtagtagcacaatcacagctcaatgcaatctctgc ctcccgggctcaagcaatcctcccaccccagcctcccgggcctgggactacagacaccaccaccactcccagctatatt tcaaagaaaaaatgtagaggataatttatctaaggctggggcttcaagagaggtcagggtgttgacaagagaatgactaa 55 gtggcagactactggatctcagctagataaagagggatgtgatcgtgggaggggctgatagtcagaggctggaaggcttg atgaacaacacatattacacaaagaataaatggagtgagagaaaccaaaggagtaaaagttgtcatcagaaaagtgagaa attttattgtgagaattcagtggtaaatcaatgttaacaaacctcagctgggcactagtggagtgaaaccgaaggccagg gagttgagttaatgagctgagacttgggcaccagatgggggtccacatggacaactaagccaccaggatgatgtggggaaa 60 cagtgaggtggagcagagagcaatgtagttggagaagtggagccacagcagtctcctttatatctagaagggaattaat agccaaaaaatggcaccgaggccaaggatgtcaccttctgactcccaaatctgagacagatgtgagagggaaggagtatc ctcaagggacaggagatggtgcgaatgtttttggcataaatcaaagatgtcagggaaattgtcagaattcaggttccaga gacacagaggaaaaagcgtggagaaagtggaatattgggaggtgagattagggcagagggaagcacaaatcaaagaacgag gaatagaaaaagtcatatgagctgaggagttggccaaacatgacagaatgggaatatgatggaattaagtggctttatgt gttccaaaaggattggtccacgcaggccacaggaaaatgggaggtaagaaagggatcgaaatgctgcaaagtgtatt gatacagaacccaaggtggggtctggcatacaagaagtataatagaggaaatgtctgtgacatttgcaggactgcaaagg gagccaggagaagctgggaaagccatgagatcacaagcaggtctgactccaagtgaaggagatggggaatgacgcaaggt ttggctgaagcatgtgccaaaggcacccatcagaggagtccctctccaagggatgggcctatcatagtgtccctaatagt 70 gtcatggagtgggagcagcccacggagggcacagccttggcatgaacgcagacatgggtctcagagtgcagcagctgggc atgtctaaggaagcatttctcagaatatactcactgaacttttagcctataagtacctgtatgaaaattttaaaaggggt ttcatgatcaaaacattttgggaaacactccataccctttcttcctcatgaaggatcataatgcctattagtatatgaag ggctctgagaagtcctgtagtaaagaaacttgctttagttttttagtccagcaatttttcaaacttaaatgagcaatagc ctcccatccttttttttacactttttagcatactgcggaataaactcaacatgcattgagaaagactgctttagggaata gtcaacactatttcactcccagtaagtacatataaaatctgtatttccagggtggattatcaacacagctgtattttaga aatattatctgcctcccaggtatcacagctactaattattgggtactgaggtggaattttagggatcagccaattatgg gaaagaaaatctgggggcaggataagatggtctccgaagccttaaaattatatgccattatttacctctttgatctacta ctcaatatcaaacaactaattcagaagaaaattgattgttttctaaaagtagtttttctacatttcccattaagaagcag togtatttaaaacttataatggctattatgtgagattatcactatcatagtttttctctatacaaattttctgtaacatt

gggacagattaaattatcatcagtetaaacattetaataeetattetetetttttttgaaattttecaaatttgttattat gcatttaaacaataattttttgaacttttattttaggttctggggtacatgtgaaagcttgttacataggtaaccttttg tcatgagggtttgttgtacaaattatttcatcactcagctatcaagcccagtactcaataggtatcttttctgctcctct ccctcctcccaccctccagtctcaagtagacctcggtgtctgttgttcccttctttgagttcatgtgttctcatcattta gctcccacttataagtgagaatacaaggtatttggttttctgtttctgtgttagtttgctaagggtaatagcctccagct ccattcgtgtttccacaaaaaaacatgatctcgttcttttcatggctgcatagtattccatggtgtatatgtaccacact ttctttatctaatctgtcattgatgggcatttaggtttattccatgtctttgctactgtgaatagtgctgcaatgaacat tcacatgcgtgtgtcttcatggtagaatgatttatattcctctgggtgtatacccagtaatgggatttctgtttttagct ctttgatctaatacctatttctcaagatcaagttagatctctaaaaaaggcatcatcctagcatttccccatcccttccc tgaactaaatttaatgttgtgtgtatcaatcagcatacagtcaagacagaaaccacacatgaacattaaatataatgagt tättaacttataaaagggtatgaactactaaagggggtaaggaatgctgaagaatgcaggaatggcagatgtagagag cagocataacototaagotaaggcacagcagccaaggaaggggcgaactcaaaaaatgccctcccccagctgatcca cccttgttggagggggtgtggctgcaacccaatggatgcccaagaagtttgcagagttgtggcaggttgggggctgctgag 15 20 tctctctctttttttttttttttttttttaagatggagtctcactctgtcacccaggccggagtgcagtggcaca atcttggctcacggcaacctccacctcctgggttcgagtgattctcctgcttcagcctcccgagtagctgggattacggg cacccategecacccetectggctaatttttgtatttttagtagagatgaagttttgccatgtcggccaggctgttctca 25 tcagcaaggetttttetgactacactatttaaaatgtgatccctgagccaccttggcctctctttgctgtccttccctgct tegeetteteeatageactteteteetaetaatetaeaatttaettgagetetgtgaaggteaggatttttgeetatttt gtccattggtgcatccccagcacctggaacagagctaggcacaggctaggcactctagaaatacttgctgaataattgaa ttaagtaaatgagtgatctacacgtagtggggaatgagagtatacagtgatagttccttcgactaaaactggggtcaaat 30 tatagtgataaagaggaactcagaccttcagaggtaagctttgtgggaccacttgccaaggctgcagaatgtgatgtcgtt tcacaaacaaggaggccctattatggcttcagatatgagaataataaagagaactttcctttcgcctcaactgcagcctt ctaaactcttccttccttcttatgtagaagtttcaaggacctcatggcctgagtgtggataggcagaatgctgggaatca ggcaaaaataaataatactgaaagtgaaggtcatgctaatattagtaagccagggtgatcctgaatttacaaaacattt ttctttgggaaatttcacacctcacatgattctgtgtttttacttgggaaatttcacatctcacatgactctgtgacatg 35 cggtacatgaggtgcctgactgctgtttttgtcctctactaatgaggaagagtgtgcgtactcccagcgttttgcaagtt tcaaagtctgacttgactttccttcctttcctggaactgatccatgagtatcgagagtaaagctgcccgcacctactca ttcaagatcctgagtgtcctgcccagctgcaggaggtggagagacccaggaggaggggccactgctgatcccaggctgta gccagagtgcagagtggcatgatcatggctcaccgcagcctccaactcctgggctcacgtgaacatcccaccttggcctc tggaatgtctgggattacaggcacttgccactgcatctggctaatttttatattgtttatagatccgggatctcactatg ttgcccaggctggcctcaaactcctgggctcaagcgaccctcccacctcatacttctgagtagctggggctgtaggaatg 45 cgcctcagtgccaggctagtttcttaattttctatttctattttgacaggtacaaattttgtattcaatcctacctcaga cacatctttggtgggaaaaggatgtcatttaatcaatataaattctaagcaaataggtctgatccccaaattaggtta gtcacagctgctgagtcgttgacccaagagaagctcatctagattttttcattatttcaagttcctcttctcggttcgt ccttettecagaccatgeccteccegteccactetetteccacagectecceteccacagectecteccaccattecaa atctgggctgttctctcaatttccttctctggactcaaacctaccctagccccagcctcagtttggggttaaacttg 50 tectecteaeatteteteccaeceaacttgatgtegeetetgtgteateaecaegggatttteeteetetgggtteteet tttccgagtggggtcagctcccccatgagtcacagcaccaatcacttctggctgcttgcaaacccctttgctttcctcag tgttgacacccagggcagccctatgctcactgccgctgagaccccacctctgcccctggccttttcccagctgacatcac cctglggcttccattttcctaaaattctcttttgaggcctcagtcttaaccaaagcacacagtgcccctcaaaaatgaca 55 ctggtgagaggccgcattagagggtcaggaccctcaggtctggactcgtggtcaccacataccttcctccctgctgacag tagctggtacctgttacctactcagagtgtcacatgccacaagccagagcgtcttggcagttctcagcaccttgacatca cttocttgctaccactcagagoggcagtgacacagttcccttatctcagaaggccagaagacggctgtcaaaggtcacag ggaaatcaaaggcggggtacaggggccagagggaggaggaaacaacttcccggttgctttcagacgcttcagagatcctct ggaggcctgggggggggcttttgagtactttatttcagttggtccctgagctcggtgagtggggcgggtagagccaccaggg gagagaaaaacgtctcagctgtcacaggaagctgcttcggggggtgagcaaactttttaaaatgcagaaattatgatcta cacccgtttcttaaaagtaagccatcgtacttggttctctttaattatattttctttacatattgtgttcatgtaggca agtcctgtttctgctaaaagaaggtaagttctaccaaggcggtgtcatgccagctttatttcccgtggcacctggcacac 65 tqctaaqcacttacatgcttaacaactagattqqqaatggtgctgctctqqqgaaqtgggcacacgttaaagaaatgttt atttcagtcttctgaaatagggaattactctggctaaaatgtagctccagaaagggaaagtggggctgtatgaatccagg tccagtttgttgtttcctccaggataaggcagctgtcggaggggaaaatcatctcccatttctccacagggcagtctgaa gatggccaattacacgctggcaccagaggatgaatatgatgtcctcatagaaggtgaactggagagcgatgaggcagagc 70 aatgtgacaagtatgacgcccaggcactctcagcccagctggtgccatcactctgctctgctgtgtttgtgatcggtgtc ggcagtttetaaettgtgtttettgettaeeetgeeettetgggeteatgetgggggegateeeatgtgtaaaattetea ttggactgtacttcgtgggcctgtacagtgagacatttttcaattgccttctgactgtgcaaaggtacctagtgtttttg cacaagggcaactttttcccagccaggaggagggtgccctgtggcatcattacaagtgtcctggcatgggtaacagccat 75 tctggccactttgcctgaatacgtggtttataaacctcagatggaagaccagaaatacaagtgtgcatttagcagaactc ccttcctgccagctgatgagacattctggaagcattttctgactttaaaaatgaacatttcggttcttgtcctcccccta tttatttttacatttcctatgtgcaaatgagaaaaacactaaggttcagggagcagaggtatagccttttcaagcttgt ttttgccataatggtagtcttccttctgatgtgggcgcctacaatattgcatttttcctgtccactttcaaagaacact tetecetgagtgactgcaagagcagctacaatetggacaaaagtgttcacatcactaaactcategccaccaccactgc tgcatcaaccctctcctgtatgcgtttcttgatgggacatttagcaaatacctctgccgctgtttccatctgcgtagtaa cacccacttcaacccagggggcagtctgcacaaggcacatcgagggaagaacctgaccattccaccgaagtgtaaacta gcatccaccaaatgcaagaagaataaacatggattttcatctttctgcattatttcatgtaaattttcacacatttgta

tacaaaatcggatacaggaagaaaagggagaggtgagctaacatttgctaagcactgaatttgtctcaggcaccgtgcaa ggctctttacaaacgtgagctccttcgcctcctaccacttgtccatagtgtggataggactagtctcatttctctgagaa gaaaactaaggcgcggaaatttgtctaagatcacataactaggaagtggcagaactgattctccagccctggtagcattt atctatttaatgtattttaaaatatttgtaagttgattttaaaaccaatttaactacattccaaattatagacagccca tttatatgggagtaacttttcaggotcattgcotcgccggtgatgagaagaactagctagctggaagctgtgggaaaaag aggtaaggtaacttgttctgtcgaagttctctaaattctcttgcttacttgccacacccctaggcccccagcttccccta acceaaggtttetggtattttctegtactttatcaagactatggaatcttaggagacttaacaaaagcaaatgagaaatt atgtttagaaatgtctaacaaaatgaattctttgtccttttaagtataacacatacctcaggcctcaccagcacataact acaaaaggttgtcccacttcctttctgtggctgagttagtagaacacaggctcccacctgccacatcagcagaaggtcac ctcaacatgtgagctacctccccggagaccccccagatccgtaaggatgatgcatccttgatcctaaaaacattttcctg ttcctggtgttcagaattggactccacactcactggtctctttataatcttgcttctggccctttgaggcctcaaagcta cactgetgeegeactgeagggcaccageceacacteeteeteeteggcateaggcacacgtteacggcactaaacetta agcatctcacatagggacacatagagatgtctgactcattaaaacccaagtctctggccaattaaaaggggtccttaatg tcctactcaacagtggtggaaggaaatttgctctatattgatgaaatgaggtggagaaaatctgattttccaaacatgag aatteteeatatgeeacceeataaccaaagaceeettatttgtgttagatgaaacatteaaagageetattaggatageg 20 gatgagacccccaagggacatgcttatacaacaataactggctccaaaccacactccatggcagtggctctcaaatgcca 25 aatggcaatttttctagcttctaaaaggttgtggagcaactggaactttcataccctgctggtgggaatgtaaaatggta 30 taatcactttggaaaaattggcagtgtcaccaaaagcaaagcctatacctactatccatttcactcctcagtatttaccc gaaaaagtctgtctatcaacaggtgaatggataaacaaatactggcctgtgtatctaatggaatactgctcatccacaaa tttttaattattattatttatttttgagacagagtctcgctctgtcacccagcctggaatgcaatggtgtgatc 35 ttggctgactgcaacctctgcctcctgagttcaagcaattctcatgcctcagcctcccaagtagctgtgactacagtcat gcacaagagcaactgactaatttttgtaattttagtagagacggggttttgccatgttggccagctgctccacactcct gacctcaggtgatccacctgcctcggcctcctaaagtgctgggattacaggcatgagtcaccgtgcccagccggaagcca aatcagtggttgctggagatgtttggaggggagagggagaggaatagattgcaaaggggaacaaggaaattcggggggacag 40 tggatatgtctgctattttgactgtggtgatggtttcattggtatatacatatgtcaaaaacgtaacaagttgtatacgt gatttattatgtgttgactatacctcaaaaaggctatttttaaaaatccccctcaggctccaggcactccattacgttgg tgtgacttgtcttggaaatatactttgagcatttgccggaggagatccagtgcctgggcctctgtttcttctcccaagta gaattggcagctaaaacgggatgcccatgggcacaacttgtcacccccatcaccgaacagggagcagaaggaggctgctg ggggtgccccacagggagcacagtctcatcgggaatgacctgccatggcaaataaaatcaccagggcaagtcaagggag 45 ggaaatggcatcatcttcccatgtttacagacacagcaatgaactcaaagaacaatcttatcaggattttccaaatgaaa acatggagcatatagagaataaagatccataaactcgtatggtggctgagactgaaatggttaatgaaaagcaaaagtgt gtgctgaatgacaccagccacaatggcctgaacacttaagtagtgtaatatacttggaacattgacagctaacaaggtct 50 tecteceatgteagaceaagaacacagttteetaaagataaaaatagcacatgetttteeactttteeataagtgaetge attagaaaactaacaaaccatgaaaagcaaaatatggctagtctcttcaagaaaaactggtgtttctattttgtctgtaa tttgagatggagtcttgcgctgttgcccaggctggagtgcaaaggtgtgatctcggctcactgcaacctctgcctcctgg . Etgtttgtattttttagtagagacagggtttcaccatgttggtcaggctggtctcaaactcctgacctcaggtgatccac ccacctcggcctcccaaagtgctgggattacaggcgtgagccactgcacctggcccggaactagttttaaaacaggaaac agttgatatactgaatggaaaaacaatacaatttgaagttgaaaaaacaaaataagatgcccagttaaatttaaatttca accaccttaactttaaggtatttattcatttttaaaaactaaatatttttcggcagtcagaactagagcaaagataaatg 65 cacaaagtgcaggtttgttacatatgtatacatgtgccatgttggtgtgctgcacccattaactcgtcatttaacattag aattcccacctatgagtgagaacatggggtgtttggttttttgtccttgtgatagtttgctgagaatgatggtttccagc 70 ttcatccatgtcccgcatctttaaaaaaaaaaaaaatctctaagtggtggctcttctctgtagatcaggagctgtagtg tacaaaagaccaagtgggtgtgggttgccactgtggacggtggagccaaagcagtcctcagaatagtctgaccccagagg tetttggcattggctggttgatcatggtgtecetggaattgaaatagaaggaeggtetaetaaatttttacetgatetgt 75 ttccggcattttattctgataatcttttttcccagccttccccaaagcaacttagggccatttaccagggaaagccatgg aggaaaaggaaataattaggctatttggagattccaggacactggctctacgctgacaccagttctaagagacccaaaat atetttgtggtetaccagecaaagtagggetteatagaggteaggggteactagagtttgageteaggtetgttteactg tgagtctagaggtccctgaacttatcctatagttattccccagttccagaatgcagaattgagctgagagcagtggct catgcttgtagtcccaacactctgggaggcgaaggtgagaggatcacttgagccaagcggtttgagaccagcctgggaaa tatagtgagaccccatcttttaaaaagacaaagaaaaataaagaaaattgacatggaaaaataatataaaatgtgaataa

tctcacatctactaaagaaattcaatctgtaattagaactcctcccacagagaactataagcccagtgcccccatcaact ggagaaccagaaagaaaccaatcttcttaacagaaagcataattggaatagagatactctgcatcggggaagaatccccat attgattetetgatecatagagtgaaggecaagtggaageetttggaacteetetacetgecaagatactaaacaaaac aacactgcacgtctggaggaattgtagcaagaacttgaaagatgaaggatgatgtccacctctcccattcagctca cctatctggtttgtgcagaagacaaataggtgttggaaaatgacagtggaccagtgtaaacttaatcaggcgggggctcc agctgcagctgcaggatcaggtgttgtttcatttctgcagctaatcaacccttctcctggcacctggtgtgcagatggca atttttcttttctattatctgttagtaaagactatcagaagctgtttattttcagttggcaaggtcagcaatacactcca caattgagggacgtaagacagaaggagagactgaggcaagttttagcacaggagtaaaagtttattaaaagctttagaa taggaacaaaaggaaggaaagtacacttggaagagggccaagtggacgacttaaaaagcaagtgcgtggtttgacctttt gacttggggttttatacgtcagcatgcttlcggggtcttgcgttatttctcccctggttcttcccttggggtgggctgtc ccatgtgcctgcctgagcccactggctcaactcctgagatcttatagggaaactactgctcaccagtttcgagtgttttc tatctattaggagccggcttttccctgttgccgggtgtgaccaattattactttagaaagacagtcaacaaccgccagac 15 catcacctgatggtcacctgacactcctggtgtgtggggtatggggagccctctcctgccctgctctttctgactagcta tcaccccttcagggtcatgatttttgctttttaccgcaggtacccataagcaaaacatggcattgttcaccatgctttta cattattcacataattttaagttatttacacaatagtaaaacatgtgaaacatggtgaaccatgttgcttatgggtacc
tgtggtaaaaatcctgctactagctcattttgcagtgtctataatggcaggtaatgctccattcactcctttatgacact
tgcaaaaactgagaacataacgcctcccagttaagcaggcatctgggcaatgtgaggagaacagaaatagaccacgctgc
attatctctcttgatgacaggcattgagatttccactttttctggtttcttattatgctctactgggcattctaca
acatcttgcacgccatggaaagtttcctctaggggggtccacaaactttttggatacagaatactttatgtctc 20 acactaguacgccatggaaaguttetetagggagtgtcataaactttttggatacagatacetttttggttgatggatgaggagtcacatacagctttaagtgtagttgaggttcataaactgaaggagtcqaaggagttgtggtggagtgaggggtaactgaagggagttatataccttttagggaacgaggccatatgtccagtgccatacacctaatgcacgagccatatgtccagtgtcaaggagtcatataccttttacagacaatagaggctctgaagcaatcacgagctcacgtgagtggtcacctaatgcacctcaagtgcactgggttcataatgtgcggagtcgtgtgtcctacgctccaaacccactgagtcatggt 25 gcaccaaaaagtggcctcagcctgctcctgactaaagcgcagccatcttccttacactccacccctaggccaggggcatc ctccaggtagggacatgtgcccgtagggtggagccctgaatccataatccacagcaacaatacggagagcaacagctcat gactaggattccagctatgctacttatgactatcagggcccagcgtaggccagagcccagggatgtctaccatctctgca 30 gggggtcatcagtaaggctcttgactaccttaatctcctgtgagaccccttgcagggctgctgttatgttctgccaattg tcagggataaaggtacaacattgtgtttcctaaaagggcacaggtgcctccttaggcagcagttactatgtctaagaccat teggtttegcaacaccacctttetgatetgateaacctcatccattaatgggaagagggccactcaggtgtaattcagag ${\tt cctgagcatgctctg} caagagcagtaacttggcttctacagttgtgacacacactccagggctagtgcctgtcaagg}$ ggtaaaaccaccagggtgctcattacacttgcaaaaaccgagagtgtagcacctcccagttatgcaggcatctgggcaat 35 gtgagaacagtggcaggtacatgaggccaccctcaggtataatgtccagtccagtttgcttataggtaaggccaccctgt gtccccacagacccataaactcccagggggcacacagtccatcgaggccccttggtggggccgcgtcttccaccatacct ttggtgtggtgacatgtattatgcttacacacactgtgacgggtacccatcccacagtgctattaccccagtgttgctat ccagggaatggctgtgctgtggggtcttgtgggcatcctttgtccaaaacttgccacgttgcgttccaggcatcagccatgg tacaagtcatactgtaggccctccccacagggagctacgatggacaaccaccagcagccgggggcttggaggggctatgg gtcagaggcggttacccttggtgtgtatctgcaactgaataggggtggtggcccatgtaacaaagcctccacctgggctg ggctgcttttccatggccattcattcaaggtttggagcatcaggtccagcctggaacttcagccctgcaaagacaggagt 50 gtgacatgcaagtaaaacccattcttcaagagctcgctatatcactcaatcatacccacagcttgcaagttgtgcggtac atggaatccctactttatgtccattgttgtgcctgttgtccagtaaaatgtgtcccccatcactctcaatgaccaaaggg caggcctgtggctgtgtccacagctgttagcgcatgagtatacccttgtgacttcggcagcagcccaatgtagtctactt gccacctggtcaagggcacttgccctgttgtcacttgtgtagcactggacagctgcctccatttagggtatgcctgagca 55 cagtttaccccctgcatgtcccagtttccggtgtagctacaaggccacatctcatgtagatgccaactctaaccatcgga caggtaagtcatccacactgtgactgtagcccatcctatcacttctcacaagcctgaagggcagcatatacagctgctag ctatttetetateaaggaataceagageteageteettteeatagttgggaceaaaageeteetggeatteteaggeact ctgtgtgctgccacaggcccaaactaaaaccatctgtggtcacatgcatatccagttcaaatgggcaccccttgtcaaat acccacagggctcgtgctgctgaatagcccacttggctgccaggaagccagtctcagccacatcagcccaatcccagat tqctcccttctttgttaactgatacaatggttttatcatttgagctaaatgaggcaggaatgtccaccaatatcccagga ggctcacaaaagtttgcagctgcctcaccgtggtgggccagggatatgcctaaattttgtcaatgatagcctcttgtatg qccttcatcttacccgaccagataactcccaagaatttagcaggtaatccaggccctcggaccttggatttgttgatggc ccaactgcatgctgccaaatgttgccacaagaggggtgccactgcttctaaatctgcaagagaatcagaggttaacataa tatcatcaacgtaatggaacaagtggactccctttggacattttcaggctgttaaatccatggcaacaagaccatgacat atggtggagctatgcacatagccctgcagcaacactgtgaaagtccattgtcatcaaggcaaactgttcctggctctcta gagcaaggtcaactgagaagaatgcattggccaagtccaccacatagtggtactgtcctaattccattgtcgagtggttc atcaaatccatgatagatggcacagettccaagccatgtaaaatatecaeetecagaatgtattcaggtatgggagagae cgtaacctttaatatatgcagatttgcccaaaaacttaactgggttcccataaacaaggctacaatctatgccagtatct accagcaccagcaccactgtacattggtgggggaccagtggattgccaattccacatgtggcctctggtcatctggtgt cccccaagccagacacctttggccagttccctagttgaacagaaaaggctctacatttccacctggctgcagcaagtag tctctgagctgggtaggaccaggtcacacagcaatgcctttctcccctttgggcattttccggaattgctgccctgcata caactgtctccgcaaagttaggagtatttcattgggctgcttatcaattttctctcagtcaaccccagccaaaatcaaat

cttctttatggtgtggaccttccaatcccctgaaggccttctgcttccctgagagccgccatggcagtggttacttcat gtatgeggtgeectaegtatggggtgaggaeageagetagggageeaaaggggeteaggageateaaeeeeaacatgaga tccctcatgtgggaggtgaaacatttatcatctggccctcaggtattcaggacaaacatagcctgccgcatacccatctc ccgaatgacttacaccaaattggcatatgactgccatttactcacagttttgggcatttcaccagcattattccacacag ttcatatggctgcctgtagccactcagtcagggtgtggtctccttgcgctgccactaaccacctgctcacttgcagccgc tgacagagagaggggtgagtcatggtggaggccagcttgtccatctcagaggtggaatgggagataccatctgctccctt gttccacagacgaagcatccaggcaggcagggttcccctggacactggcaacactgcttgcctaattcctgcaactcag ttggggtacaggcaatatacgaaatgtgttgcattatggtggggagtccctgagtccacccttggagccccagtggctgt 10 tcatgatctaccttctgtcagaccaccgggtgagcccgcaacaggggttcttcctccttggtatgaaactgagtggggat ctccagacaagatgatggacccaggcctgcattcatggtagcctctaattccttttccaagctctgaagccacacctcca ggcatectgcctgcacctggaggtccccattcatggcagcctctaattattttccagatcggtgtagccagacctccagt ctgcatccctcagggactgggtgtgtacttttcttagcacagttaaaaatgcccatccaactctgccagcaaaggctctc tccttcttggtgctctgcacttccagctgcttcagcgccttctccatgctcatgggggacccatctactgccacccaggt 15 ttccactcaagcccaccctcacagcacggctaccaccgggtaccacaagccatgttgtggtcacatggccaacctggaat cagcagggaccgaaggctcacttaccttaggatcctgttcgtgatgccaattgtcaggttctagcccaaactaaagtcca 20 cttggaatcgtcccacctcagcctcccaagtagctgagaccacaggcgcacatcaccatgcgagctaatttctatatttt ttggtagagatgggatcttgccatgctggccagggtggtctcgagctcctaagctcaagtgatcctcctgcctcggtctc 25 tcattaaaatagtttgacctcatggacccactgggtcccatgtggagaatagctctaagctaaagagtagaatggctggg aggggacataaacattcagcccatagctgctgaccacaataacacattttaagtctcttcctcctcctgctccttgtgatt 30 cagcaaagttaagggacttacccaaggtcacacagccacacagcagagctggggctgagctccaggtgtcctgctacaga ggccactictttctcccactagggactggcctgtgattacttcagaaaacaatggtcagctaactgattctgaacgccct ttgctggtaaaagctaatctcctgaggaaaaatgtatgcattggctgggcgcagtggctcaagcctataattccagcatt ttgggaggtggagacaggtggatcacttgaggtcaggagtttaagaccagcctggcagtcatggtgaaaccccgtctcta ctaaaactacaaatattaagctcggcatggtggcaggcacctgtaatcccagctactggagagactgaggcaggagaatc 35 gcttgaacccaggaggcggaggttgcagtgagccgaggtcgcaccactgcattccatcctgggcaacagagtgagattct caagaccccaaagcacacaatgttctttctggtatgagtgacatggggttcacagcaccacaaagtccatgacttttccctcagaagtgaatgcatggctaattattttgtattttttgtagacatggagttttgccatgttgcccacgctgctctcaaa teageacegaggcaceagetgcagataaatttetcacetaaaatgttgagagatgttgctaaactgtccttctaagggta 45 tgtataataatacggtcctgccgatactgaataagactatctgtttcattacatcctcacaatactgaatatcattagca acttgaattttaaattgtgctaatcaatgaaaatgattgcctaattactagtgagttgaggttatttaacattaatactc cttctgatgaaatattttgcatttatcacattttacataaattctctctatataattagcactagaatgtccgacttggt getggteggeagecactetgaggecetettaacacttecceaccacacattaattteccetggtttgtecatagataca 50 tccaacaatttttatgtaaataagaaagactcagctttcaatggaaaatggtaggttggattttatgactgaagtggcaa aaagaaataagggattttattatgggggaggtccaaaccctggtgaaaaacgaaattcattgaaattgtttgaaaattca aggattaaatcagattattttggattcagtaggaattagattactttaaagccccaggatactttattctgtagaatgca tggaaagtatagaaaagagaaacaaagagggaaagtcatggctaataacctggaaggggtaaatagggagccaaaggcct 55 60 65 aaatctgaaagaatctgttgtcccacccacagctccagttgaaaataagtaataggagaggaggataaaaaattggccta taccgcccctccagttgcagaaacatctgtaccgcctccttcggtggcagaaacagagaccccaatacaaagaatttta cgctctgccgccacggctggagagcccttaggacctttcactatttccgtaagtcctgatccaaataatccaca 70 agagoccattcactttaggattgctagaatctatgtttggtgctatgtgtcttttaccctttgatgtgaaacacttggca tgaacttgcttgtctgctagcgcatatctgacatggaatttaaactggcaagaacagggtgcagaccaggctagacagaa ccatgctgctggaaatggagacattacagaggataggctattgggtaatggcccttattctgacctggtacatcaactag cactcacaaatgctgcttatcagcagtgcacacaggctgctaaatgtgcctgggccataattcctgaagagggagtcccagtactatcatttttacatatcatgcaagggtcacaggaaccctacgcacaatttcttgcaagattacaagaggcagtgaggcatcaggattcctcataccttggctgcagaaatgctaacctttactctagcttttgagaatgcaaatgcagattgtaaat 75 gtgcactggcaccggttaggtgtacaaaaacttgggaaattttcccagagcttgttaagatgtagcaactgagctttatc
gatctgcaatgttagctgaagcaatggctaatttagctgttgacaatctaaaaaagagccaagggtcaaaccctaaaatg ggaaaatgttataattgtggaaaaactggacattttaaaaaggaacgccaccagatctcaggacagaaaggatcttacaa tgcttttccccccggcccccagcggaaagaacacctggactttgtcctcgctatgacaaaggaaataactcggctaatca

actggcatttggggacctttaccagcaggatatatgggactaattttaggcaaaagccaccttaacttgcaaaggcatta ctgtagtcccagaagttgttgactctgattatgaaggagaaattcaagtagttttattgtcacgagatcttcgggttttt gaaccgagagaatacataatgcaattattacttattccctgcaaattacacccttctccatgaaaggagaaacaaggaaa aaattaaaggaaagaaattttatgggtttatggataccggagctgatgtgtcagtgttaccagcaggtctttgttcttag agctcccaagatggcggcaagccttttgttctctgacctggagttcttggcctcacagattccaaggaatggatccttgg caataatgacctctggcgtttaggctcaatgctcagagctaattgcagtcattcaggttttacagctcacagcttcagat cctgtcaacattgtctgtgttcagtttatgtcgtaaatgtagccggtcacatagaaactgctacaattaaaagtacgcta aacccagaactgctaatttatttttaagacttcaacaagttatttgttctagtgcagctccttttcatatttctcatatt ccttctcacacacaacttcctgggccgctatctctaagtaatgagaaaacagacaaactgattgcctctgtgtttcagca agctcaaccatctcatgtgcttctgcaccaaaatacttccgcccttactcacatgttcctacaggtttgtattatattat gcagtatatecetegagecacacetatagaaggatgtaatecaegaggtttggetecaaatgaaatetggeaaatggatg 15 aaaaactgacaatggacccgcttatactagtcatgcttttaaaaatttcttgcagctttgggctataacccataaaacag gaattccttataatcctagaggacaaggcattatagagcaggcacatcaaacattacaatgcatgttgaaaagacaaaaa gcgggtataggaggccaactaccacctcaataaaaactacatttagccttatttactttaaattttttgactcctggtat ggatggtaagactccagcagaaagacattggcaagtgttagaagaaaagaggaaaatttatccaaaagtgttatggaaat ggacaagccgtgtgggtgccctcaaggtgtgtgtgcaaccatggagtggaagagtatgcttgtttttacaggagat ggacaagccgtgtgggtgccctcaaggtgtgtgcaaccatggaacgggagactagaggaacccagggtggccaaccatgg acagggtcccccggtacgagccatgagccagctgagcctgagtgcaaagacggagagaagaggccaactggagtcacaaca 20 cagttctaatgttatatttgtaaagaatatcactactcaacttacagtttgtgtttatagatat 25 tcattgttcaatttccacctatgaatgagaacatgcagtgttttattttctgttcctgtattagtttgctgagaatgatg gtttccagcttcatccatgtccctgcaaaggacatgaactcatccttttttatggctgcatagtattccatggtgtatcc ttatgtctttttgacagctaagaaggaccagctccaggtaaacaatacccaattgacctgtaaatcttaccaattatatc 30 actgcattaatcatagcacattgcaaacacataatatctctactttgatgattttaggccacatccctgggctatgtatt cctgttaatctgtccgaggcttgggctgccacacctgctttgcattttgtgaaacttcttctaactgagcttactcatca tgtctgtagagccttagacataatattttagctattgtttccttggtcgcactaataacttctgttgtgatgtcctctg tagetttgcataattetatteaaacagetcagtacatggagaactggacacacacageegaccaagcatggetacttcag aataaaattaacactgagttacaaactgaagtggtgttatgggaagtcagggaccccaaagagagggaccagctggagcc 35 acagcagaggaacgtaaattgtgaagatttcatcttaatacggatatttatcagttctcaaataatacttttacaatttc ttatgcctgtctttaatctcttaatcctgttaccttcgtaagctgaggatgtgcatcacctcaggaccactgttataatt gtgttaactgtacaaattgattgtaaaacgtgtgtttgaacaatatgaaatcagtgcaccttgaaaaagaacagaataac ttttgcagagagcctataaatgaatgtgcaagtaggaaacatatcgctaaattcttttcctagcaaggaatattaatatt ataaggactgagatacgccctggtctcctgcagaaccctcaggcttactagagtggggaaaaactctgctgtagtaaatt gttttgeggetcaggtgggeatcaeggtectaceaatatgtgatgteaccectggaggeccagetgtaaaattettetet ttcccccgatatgtgatgtcacccctggtggcccagctgtaaaattcctcttttgtactgtctctttatttctcagc aatccacagttctatggttaggggaaaagcacaaagcttgcaattgcagcagcaattgcattgtcattttaatcacactc 50 atatttgtgtaaccaacttagaatataaccaaagtgagtatctgtgggacgttgtgaaagcccatttgcagggagctttc acatctaacatcacctttgatattggtgaattacaaaacaaattcttgatttacataggcaaattcaagagtttctgcc ttctttagaagactggaccaaattccagcaaggcctggagagcctcaatccttggacttatctaaggcactacattaaca 55 aaggetegtgggaetgaecaacteateatteeactggaggetatatgataaaacagcaaactgtttateatgaatgeagg atgtgggcaaactcacgactgctcccactgccagaaggtttgctgagggcaatcacttcctggcaccaggctccttgagg ttatctactgggacatctggagaatgcagtcttgcaagcctactgtggactgagcagctgatcccttcttccacgccccc cttctcactatctcttttgtctaatcactacggagggttgtgtaaagctcagggcccttgtccactagaggcaaagtgcc ccctgaccgcttcttccaaatatactcttttgtctcttgtcttttattcccacgtttgcccctttgttcagtttcccta ggtccatgtgggttacatagtggcaacctgaacaatgacagaatcaggtgctctacagaaataactttttaaggaaagat ggtcatgtgggttacatagtggagacatecagagatgatactaggtgctctatagaacaataattettataggaaagat ttgggacttagagaccccagggagacatacacaaaaatgataagaggatgtgcccaaaccagtcttaaaagttgtgcgcacag ggtgaggaagatgaagctgttactgaacctcagagagtgactggtgttacagcaaaagttagcaatggcctgaaggagg gtttctgaaatcaaatatgaatgattccccctcagggaacccaaccttgggaactactgcatggttctctgtatgggaaa atatcattaatgcaggataaattgtgaaatatcacaggaagcatcctgcatctagtcaatcttctgtttctgggggtggcc tgtgcagctgtgcaggcagaggcccaaccatcctggtgagtggcacacagggactgagatccagccacacctaccaggcc 65 ttcctgtgatggccttctggctgggcactatgaaatgctctgaagatttttccttqcactgttgcactaaccccagtcct ctatcactgccccttcctcctgggcgacttcactgatgttgtggccatgtgaattctctggccaatgaaatgataaagat qatatggcctctgccaagcagacactgtaagtattattgtatgatgcttttgtctcttttttaaagttaaagcagttta 70 ttaagaaaataaaggaataaaagaatagcactccataggcagagcagctgcctctgtctcttatattttcccctctgcct caagcccaacatgcccaaaattggggctgctggttcagcctgggtctcagaataaagacatgagccacagatccattgct gacccatgatggagatggacacaagagagaaacacatttttgtcatgttagccactaagattttgatttggaggccattt taggtgggcctcaatttcactttagtatcttatttagacaagaagttcatactgttcaaatgtcatgtttaagagtgct 75 ggcattatcactgctgtggctaccccatcagatgttgctcactgactaatcttctcatgttagtgaggatggacaacata caggtttcagaggcttttgcaggcagcagcagcagcagctattcatctcactgacagtggggaacatggccaaatggttgcccc cacaatggaggcagagtttcaggacacttgtctgatctctgcccttgaaggaacagtctcaccctgattgacactttttgc gtcttcacttctctctctcttttctctgcttcctacttagctctttagaaatgcaattataatcttttatctccccttcac agactaccttgagacataacagtcaattcacaagccaaaatatgcccgctatgaaactctcccatctggaaattttttgg

ctgcttttacaacctagttttgcccacaaaggcaccagcagtaaccaactcaactgcctggtagacaaggcaccaaagcc agtacccagaccctctacctgctcacttcctgccttgcatgccacgcccccatttaaaagcctctgctttctgctccaa aggtgaagcagttacccttaaggaaagaagcctgtacttcttcccctaaggtagctttggaataaaagtcactttatacc aaacctagctcttgttaattagactctgcaagtgatgagcaactgaacctacatttcagttataattcctatgcttgttc taaaattctagaaaagatgagtgacactttataaggagagaatatcaacaaaatttctcattttacttcttgctaagacg acaqcaqqqaattqtaaqcaqatqqatqqqcaatccccaccttcagcaggggaggccaaggccccaacaccctggggag 10 aagagetgggggcagtgaatggetgaggetttettggggagetgggecatettetteggttttaetteetgaggaattea caggcttccaggagggctgtgggacacaacagagcaagagattcagaaactgatttcttccattaaaccagttatttaat ccaataaatcaaagagaatactaagagttttctctgcccttctcccatcactgagtcagtgcttgccacactcatattcc gcctgagagacacaaccaccctgcacttgtctctgattgaatcgactgtcacattctcaagttcacaagacattggtggt tgagcacctgctttgtgtgagttgctgtgctaagtgctggggacacagcatggatagactggcctgccctcaagaagcat głggtetatgeagtectgagetggetgeteacaagaagagecetgtagecatattteteagagggtggteetgacetgea tcacagtgacctgagttgtttgtcaatacagaaaagggtttctcaaccttggcactattgacatttggggcctgataata accetttattgcagggggctggctgtgctttgtttagtagcatecetggeetetacetatttgttaccagcagcaceete tatgttgtaagaatcaaaaaaatgcttctcacattgtcaaatatcccctcaggggaaaaattgtctctcattgaaaacta 20 ccgataaagacatttctggccctgccccatccttggaccaacagcatccctaatgcccccaactctgggtgagggacca ggaataggaatctgaatgattgcagtgcacagggagctgtgcacactgaaatcccacagttatcaccgggagccttacaa tactctgtgatgtcttctaaatatttttaagggattaaattaatatcaacatatttccctggttaagatgtgttttccta tttttgaggaagggtettteggtgteacetaggetgtagtgeagtgtgtacaategteagetgeagetteaacette
tgggateaageatecteetattteageeteteagetgtagtgeagtgtgtagateatageteaetgeagetteaaeette
tgggateaageateeteetattteageeteteaagtagetgggaetagaggtgettgaeaecacaceaggetaatttt
aaaattatttttgtagaacaaggtetetetgtgttggeeaeattggteteaaaetecegggeteaageeateeteeaae
tetgetteeeaaggtggtgggatgaacaggtgtgagecateacacetggetggttttgteattteteaatgeatatgtata tatgcacctttcattttactgaataaaatggattatcagtttccaaagatttcatgacagtgccgtcactatccgtacta taaaatttataaaaatttattacatactgctctattttattctctaattattttattatcaatgagattataatttcctgaac tgtaaagagatattatctttccttaacalttttacacctgtgttcgttcctagaatgctgtttggccctcaaaccttgac cttcacccatggtggtttctcggggatgctagctagggtctacttacgggaggttgagcactttttcagattagtaatgc ctqcqacatactqtqqtcccaaatatttttcatatgttgttttgccatggagtctggccagacactcagtgttgtcattg aacaqaaqqtttttggtttcagactggaataagcaaaacttgtccgggcagtcagatccatttctcccaaatttagcctg cqacaaaaqqqcaqacaqtqaqtaqctaaggaaaagaggaatttgtgggttaaaggaggcaaaggggtatttcttccacc caagaacagccctgagaaaaccatggggcagaaggagctgagttctggagtcattccacctccttagtggagtcccccac atctttccttccttcttaacctgtgaccttttcccatacaacttcttatgggtgacaaggcaacaatggaggggttttga 40 ataaaggccagttatggtggccagtcttgttattcctgagttgttttcttcaaaagcacacagagacatgatgttatatg ataaaaatagaagttotaataaaaatcccagattttaagaaaattttgggatttcgttcaaatcacatttagagagcccta aatctatagggcaccttctgagtttgctgttttagaggcctggtctagagcactgttcactcggcccaggttcaggaaat 45 accatgagcttcaagtagaggactagagggatcgagtgggctggtgcacctagctctgtgatctcctcacctaacatga gcccacacagctaagaaagcactagaagccctgtggtccatacctgttggtggagcaacacctgtttcaggcgttccacc ttatccatccgagacaccacggcatgattcggggccatggcaagatggcagcttctagcctcagtcacaggcttccgttt 50 gccatcgaggcacagcagcgcaaagtctgccagcttcaaatccttagcccatgcgtcattgttatttcctggggagaaaa aaatgcacacactggggttgtggtgatgtgaggaacagagaaggagcttcatcctacacaagctgtacaaacttcaaata taccaaatattagtgctgtgtccatgcaatggaatgttattcagcaataaaagggagtgaagttctggtacatcctgcaa 55 tatgcatgaacctcgaaaacgatgctaagtgaaagaagccagtcacaaaagaccacacaataggctgggcacggtggctc atgcctgtaatcccagccctttggaggccaaggtgggagaatcacttgaagctaggagttcatgaccagcttgggcaaca tagcaagacctcatctcaaaaaaaaaaacccaccacatattatatgactccatttatatgaaatgtccagaataggccag cctatggagacagaaagtggattgatggttgccaatgctgaagaaggatagggcaatgactgataataggtgcaagggtt tctttatgggaggatacaagcgttctagagttggattgtgttgatggctgcacaactctgtgaatgtgctggagatcact gaattgtacactttgcatgggtggattttttagtatatgaattctacctcaataaagctgtttagagttcttatttttt 60 aaagaagaaaaccctccacctatgccatatttttcagtgagttccagaaaaagaatagatggtttacattcaaggagaaa ttggtttctcctccctttcatattcaaatgctattagtgtaaccagagaaaaggaaaggaacttttataggtttatcaaat atatacagccaattctaacaaaatacagttgtaaagtaccggagaaagttaaaattaaatttgacatcaatctgatccct ggagattacttcagttaatggcttgtaaattctaaatgtaattgtatgcatgtctatgtttgtgcagatgccggctcatt 65 ttgaaataatttcaaatttacatgtcttgttttaatctctgtcccaagagacactagaaggagcagaagcagaagggaga tcacctgctgagacttgggggttggaatgctgaagtggggctaaggagacagatgcagattggaaggtagcaaatggctg aggaccaggagagagagtgattgttcaaacattggctggaagattatcttccatcatctgcaaccacctgtaattttgtt 70 acagatgttatcatgttgtctattgagataaagaattttggagttcttttaatcacaaatatggaaaatgttataaaacc ttcccaaaggcaaatctgaacactaagatgtgttgtgatgccaaagactctgctttgaaggagaaaaggaaacaccttca cctaccatcagtqttctgcaagacagtgacatctttcacaaatgcaacgtctccagcattctcagccaggcacctaaaat gttccagaaaatatacacataattacagaagagaaactagtggggctttcataaatatttgtaatatgcattccaaaaac tgaaatatggaagtaaacatctaaaagacaactatttctaggaatttactgtttacagcggcagattgaacacaggtgta cctqccctccttttaaaaccctatataaaagacattacaaaaccaagaaatctaaagatatgcgacccaggaaacaggca atctaacatgaagtaagacaaaggaaagcaccaaaataatggtcaacaggacccccaggaccacagatgtgcaggcggcc

gtgtgtgtgtatgcatgttgttaggagatttacattactggcagacagtttggggatgagatagtgatgtttttttaa gtgcagaaaattaagcaaataagaaaagacatttatgaactccagagtaaacaaaaagtttgtacaataagggaaatata atatgagaataacgcttacacagtcataagtactgaatatgacattagcgtgttgggtgctgaagagagttgaagtctgt ggttgtgtggtggaaaaggtgctgggggcagtgtgagaggctagatcttcttctatactacagagtcagcagaaagttaa aaattaagaaccagcattataaggatgatagaaataaaggggtatgacactggtttcagcttttaatgattttgctataa atttocccaatctagattctagatataatttaaacaaaagacaagggattttcttccagtataattaggaatattaaaat tatgagacatgtgttcagcatttctgagtagaatcacatttccatttgcaaatccttagtcccttaaagatattttttata tactcttggcaaatggaggaaaaggaacaggggaagatcctctctgcacccttcacactggtaaatagtgcccctgagaa gcaacacccggatgaatggtgctgtaaaacgtggggtgtggttacaagtcactaagtggttataacttatgaattctgaa aacttgttttttggcttatttttcacttcgttactggagaataacactgcaattctgccatctttgccatttctaagg ccaaagtcagagaaaaagggaaacctaagccatagtcatgacctaggtgagaagaaaaggggcggcgatgggaaagagaa 15 ttottocccataaatggaattgtaggaagcacttaggataccacactctacccatttgattttcaggacgaggctattga ggcctactgctgttgatcttggctcaaagccacagggagaagcactgcggagctgaggtcagacacgccctggtgccagcc tccactctctggggcggtgggtgtgggtggggacagccctcactggggccacccatgagctgacccacaggatgaccccca ctctgctgtgacaggtcacatctggctccttagaactgcaatgctgacatgctgagggatgaggtaagtccccatcctga 20 tcatctggagagaaggaacacggggagtcagctcttcaaacctgagtccacacaagcaacctttacctaacagccgatgc accaacataqqacccaccaqaaaaqcttcattcaqactgtaggcacaqatggacacccaactaaggctggggatgagagc tgtggctgcctggagggtcccgtcatcacagccttgagctggggactcagctcatgaccgtgatggctgtgtgcagcaga 25 gcctgtgagttgcctagtccaggatctgattttgtttttatcagtaatggaaaccctgctttgtatctgggtgcttggcc ctttqqtataaagactagacttatcagactccctggggctcatatggccatatgggtagctataggccagtgaaatatca gcaggagtgttgggcgccagcttctcagaaacatccttgaaagacaattggtacatgccttttgccctttctccttc tctttcttcatcctgcacatagaatgcagaagcagggactggacttagagatgcaatgtgggccatgaggtgaccttgag catgaaagccacacaaatggcagagtagccaaatgattaaagcccaggttccagaccccatattgtcttcataccagccc 30 taggcaaaccacctctggactacatgacacagaaattaacttctgtcttgtttaagcctctactatttcaggagttttct gctctgcccactgagcaaacgtcacccattatcagactcccactgctgctggaagagccacactatgtgtcaacctcag gaaaagctgggagtteecatteeatcctggcagttteectacageteagaggetgecatggagetggtgaggageagage cacgtgaaagctgcctgccccggccaggatcaaaaacccatgcagtggagcccctgccctaggagacgcccatacaagaa 35 agtgtggggtgtggggagagagaaactgcagaagcaggtggagccaggctcttgaggtcttattcaggctccgttgca agccagagtttaagaggaatttaggtctggagctccaagaggtaaaaagcatttgcacatcttggaacttgcatttattc ttagggtgcagcgaaataggcagatattccaatctttaatcttggggtggggtgaatggggcatgggaagtgctgtgcag ccgcacctttggaactccttaccaaatttgcaggagcccgtctggttgaagagcaggcccatggggatattccagcctgc agtcctgtccacggcggtgtggcaggacttcttgcctttcacagagttccaggtaaggctagtgtctgatctcctaacca ccgccacagcaagatatectggcataacagatgacagaaaaacaagtettaacetecaggaggcetggcacatggattee agtggagctgtctacagcccaggccaaaacaggccaagaagcaacaccaggcaatgattccctcaaagaactggcctttt 45 taqqtaqaccqagaaagcataagctgctgccttatgttaaggtgagattgatgaaataaaacagtaagaaaagctgatta ttttagtgattacaggggactgtcttcaaccagccacaatgtccctgagttacaaaccagcaatgcatctctcagtgt aagottotacagoaacaacactataaacaacaagagagaccocaacagtgcataaatcaccaaccacagtgtgcatcag 50 agggcaagtettttetgaaaetgagcaageaecagetetggtgggcaggaggagtggtgeacagagcaetggggacaegag tcccaggicacgaggacccggggiccaagaccaggatctaccacagtaitacctatggctgtgagtgagatcctgggcact tggggactctcggtgccactgtttcctcatccccatgaggtgggaagtagcacccccattccatgaccatgacaaaat 55 acttcctcttccagcaacaagaacttatccttgaccctgaaagtggctaatgccaactcaccttccacaggtctatccac acagttaggatcagggtcactgctttgttgggattctgaaagaataaagacaagccagacatcattatccattcagatgt agtgagaagccacaaactcttaaatctcaatgatgcagaatcaaatccaaagagaccgtcccagcagttccatgcaggag aaatgogtotatatgttoaacaaaagacatggcacagagattoacagotgcattattoaccacagocaccaactggaaac 60 tactcaaatgcccatccacactcaaatgatgaataatcacagtagactcacacagcgacgagactgaacagtctacaact acacacttaggtggatgaaaagcataacgatgagcaagagaaaccagacataaaaaaacacatgctgtgtaattccttta acatgaagtttaaaacataggcaaacttagatctgcgaccttagaagccaggagagaggcttcccttgcaggagtaaggg gtgaagtgccatgagttgtacatttatgtgcacttttctgtttgtatgttataattcactgagatcttctggaaaattaa gaagataaaaccaacctgtcccttgttaattctcaacacaataggctttgtgggtaacacggcccctttcatttcttctt tecctgattetecettttgaatgtatetgtteateataatgttteaectgeatteaecgaatgggattaeteatageece actcccatqacccagagggaatataccagaggatgctaactccacttactgtagttctctgccaggacaggcaccaaacc acatttgcctgcagtgtacacatatcctccatccaactcatggcatcagcttctcctttctgcaaagacagagcagatc tecageaceacagtgaggetgeatecegtectgeetgtetatataggetetetgagagaatggttttetgteaggtgaeea 70 qtqaaacagcagaaagagatggactattcaaactgagcagccagaggaaacaccgtgtgcaccactaattctctcccagc cctgcctactttctgggctgtcaattcaactggaaagaccaggcacaggttgcactaatcctctgtcctctgagcaaaac ctcatctaatctgaactcattagcactccactccaagcgctacacagaagttgtccaacacataagctgaagtcgtcata ttggcccaccaccagaatgaacaagtccaggctacaacacaggatcatggactcatcagtagtatgaaacttcctctttg 75 acccagtaatatttttacaactatattaaaaatagagaagtggacaaagatttctactcaagaatgctcaccacagggtt attgataatagcaaagtaagggacaaagaggaatgggggcatgactaaactgagccatattcacataaaagatatcctgg aagcatgtttaaaaaatgttttegteegagtgetgtggetcacaeeegtaateeeagcaetttgggaggeegaageagga agattgcttgagcccaggagttcgagacgagcctgggcaacaaagcgagaccctgtcgctacaataataataataataa tatgcaggtgtgggtggcgtatgcctgtagccccagctacttgggaagctgagatgggaggatcacttgagcccaagagtt ጸበ aaattaatgettteeagagtaaatatteatgtggaagaatgeeeattataegetgttagtgaaaagggettaaaaaeg acatactgcaacacttcattattgttgcatgcatatctgcagatgtgcagagaaatactggaatggagaattagccagac

 $\verb|titaaccatg| tctg| tccctctg| tgtg| agatcacagg| tgttg| tgttg| ttgttg| tttgttttaacataatacctt| tctaaccatg| tgttg| tccctctg| tgtg| tgttg| tcgttg| tcgtt$ tccatattttccaaattccttataataatcctgagttgttcttataaccagaggagtgggaaacccacagtaaactgctt tttgaaactaaaatgctttctggccctgagcacacetctccaggcatccctgcctcacccaggcccccgtggcctctttg ctaccagcaccagggcgatgcagtcctctgtggtggaggccgaggagcaggtcacgctgccttcgctcaagccactccac tggttacacttgcgcagctcctgctcgccaccgcacaccaccaggacccgcgcacgccaggccacttcctcctcacc tgccagagggaagaccgcaggtggctgggcaacctgagctttgccaggttgtccaacctccccagagccagggtcctgcc cagactetecetggaacaggagetacagtacatgtggacatgtggaacataccetetgetacatteteagete
caagcccettetteaggtccacagagetecetgtgtttcccacttetgtteetteatet atccattaatctttagagtcaggaggcgcctattgtctctgtctctgaggataaacgctccatgacccagagaccagtga gtgtccccaactaagttcaaggtctgggcctgggaagtgtgggtaaatccaggccccggattcatccaggaggggtcctggcgtatctttgttcatgttcatgttctcacttaataggaggcaaactgatttttctctgccaggcctggggagcctgacgt gcactgatcaggtggccagactattcttttagagacacctgacctaatccacagaagacactcacacctgcatcaaacct ccacgatgaccccacagtgtctgggaaaaggagtgaccgccacaaagtagggccacctgctgggaagtagaagaccacac caggcggacctcaggacctcctgggctcactcacttttcctcaagttctggatggcagtgaagtagccggagccaaggt acagcccagaatctatcctcgggggcaccctcgaaaacccaatggcagagtccttgaacagcagatctttctccccacta ggggagccaaagagctggaatttcggtgacttgtcctttccaaacttttcctaattaagaaaaaatagaattatggtgtc 20 aatggtaaatagggaggaaacaaaaaaatgatgttaaaaaagagtatctggagctttgggatcattctaactgagagcaq gagoctoggttgagacoctcotgcagagggacttgtgccatctcggagacccaagctcagctattggctcattctttgaag agttgctgaggtccaagcaccttagggccctgagaagattgcatcgaccaccccctgcttctgctcccatcataagacgc tgtcagcccgtgtgacagaagagtttcattgcttctgctgtccacagtacagcctgggcaagcagcccaatgcattagtg tgctatcctgcagcaaagctacaggacttctggagtggcagaagtcagggaagtaagaaaccttgctccctgcccccat 25 atccaagcaagtggggaggaccgtgggtgaagatacctgtgcctggcggagaagattccagatggcatcctccttgccat tcacacttcgtgccacaacggcatgagaagggacccgggccagatggcagtctttgaacttgtccactggcttccgagtg ttgtctgggcagagtaactcatactcgtccctttcagcctcgtctgacaggtcctctgcagggaaggtgaggtgggaggg agtetagataagcegactecagcagtaacetegagetatagtteccettetecetatagaattttgagettggggagata gctgacaaaactgagggtcagaaaggcaggggtttgctccagaacactcagaaaggtaaaggtagtgccccaaaagcctc agggggcagccgaggtgtgatcctcatcctaatcactaggccaccctggggttcccgtgcagctgcctggcaggc cagagaggccaaaccagacccgtctgtttctgcggcatctctgctggaaaagtcactttgcagagacaagctcaggggg ccaccaagggttgctcccttactcacatctctgggaagaataaaaatgacaaaaatgttaacaaggcagggaataaggca aataacgtactaactaactcaatctcacagagtatttaaaaagctaatagattggaatgaaggtttaccagtgtattcca tagatagaatcggtaaagtttttttgtttgttttgagacggagtctcactctgttgcccagcctggaatgcagtggtgcg 40 atctcagctcactgcatcctccatctcctggagtcaagagattctcttgcctcagcctcccaagtagctgggaccacaag cgcacgccaccaggccagctaatttttgtatttttaatagagatggggtttcaccatgttggccaggctggtctcgaac tcctgacctcatgtgatccaccgcctcagtctcccaaagtgctgggattacaggggtgagacaccacgcctggccataa gttattggcttgataaatgccattaatctacagcaaaaaccttactaaaagaagaaaatgtagacattcaccgcaaaatc aggaacaaggcaaggatgcccactgttacaatgccagcacaattctagatatccagatcacacaatttacaaaagaaatg tgagatataaacactggaaggaaaaagacacactcttatttaaaaagatgatatcgtcatctacaaaaaaccaatgaaac caacagaaactaataaaactactcagaggagtaacaagttataagagcaacctacaaaaatcagatgttatcctcattaa caataaccaaatagaaaccaatatggactataagatgttacaatagcaactaaaaccattaagtagctaataattagcct cccacaaagacacatcagacccacaaaggaaaaattttagttctatcaaagaaactaaaaagaggtgtgatcaaatgggg gagatttagcatcaccatggactggacaccttaatgttataaatatgctgatttttcatggaacaatttaaattcagtac aattcgaatcaaaattaaagtatgattttttccagaaattcaacaaaataattctgaagttttagctgagtatatttgaa tccaccagatagtaagacccattggtaagccacagtaacaaaagcagaaaaaatgcaaatacaccaatgaaataaaatag 55 aggaacttctgtccttgaatcaaaatcatgcagaaacaaggtgtgaaactcaatttaaaaagtagtcaaatgtcacaaa taagaaagggaagcccaaacggctagcaaatatgttgaaatgatcaaactcaccagctgtcagagaaatgaaaattaaaa 60 ataaaacgaactatctattgcattacaaccatcattcggacaaaaaqtatgaaaqtcaaaaatacttctaactgaaqttq gtcactttctctagtggccctgggtggaatatagtagccctgtctctattggtcttgcatgaaatgtagtgagcttatgt ccactagtcctgggtgcagtgtgtttagcctctacatactcatcaactgctttattataagtccaggagggacgctgtcc agcaggtaagtaaggaacacaggtgaaggtatcagtcgtgtggctgcatgtggtagagggaaaagagagcacaacctctgt ccatcactatggtgacagagaagtaaaaggtggatgtattccacggaacactcctcaactgttaggacccctgagctaga catgtatacaacaataccgataaacctctaaaacaaaatgctgagcagaaaacccaagtagcaggatttctaatgctcac taaaacctctatgaacccagaaaccggaaacacaaaccagcacaatctgttctgcatgagcacatgtgtcttggaggact 70 ggaggacgcattgccaagcacctaggcatgggtgtctatgaggggaagagaaaggcagtaggcacaggaggtttgaagaa aactgatcatttaaaatatgaaagatcataaaatcagagctgtgccctgtaggaatcttgaaaatggtctgccatgaact taggaatetaattageteaaaggteagagteatgateaagtaagataaaaggggteagtaeeeacggeteattaeeetge tettaceaaacactgtgetetetetgataaaagccaegteteeagcceegteteteagacacetgtgaaaagagaaacca teaggggtaagcacaggcagccetececagcccetecetgtggaacagtagccetggcaeteagcatetatgggttteta etecetgcagggcagggctetgaaget (SEQ ID NO:12208) ccccactaagatcctgggtccagaaaaagatgggaaacctgtttagctcacccgtgagcccatagttaaaactctttaga caacaggttttttccgtttacagagaacaataatattgggtggtgagcatctgtgtggggttggggttggggataggggataggggataggggataggggataggggataggggagaggggagaggggagaggggagaggggataagtccaggatcccctctacatttaaagttggtttaagt ጸበ

tggctttaattaatagcaactcttaagataatcagaattttcttaacctttttagccttactgttgaaaagccctgtgatc ttgtacaaatcatttgcttcttggatagtaatttcttttactaaaatgtgggcttttgactagatgaatgtaaatgttct tctagctctgatatcctttattctttatattttctaacagattctgtgtagtgggatgagcagagaacaaaaacaaaata atccagtgagaaaagcccgtaaataaactttcagaccagagatctattctctagcttattttaagctcaacttaaaagga agaactgttctctgattcttttcgccttcaatacacttaatgatttaactccaccctccttcaaaagaaacagcatttcc tacttttatactgtctatatgattgatttgcacagctcatctggccagaagagctgagacatccgttcccctacaagaaa atagaagacatttggcaaacaccaagtgctcatacaattatcttaaaatataatctttaagataaggaaagggtcacagt attttaataactaacaatccttacctctcaaaagaaagatttgcagagagatgagtcttagctgaaatcttgaaatctta tettetgetaaggagaactaaacceteteeagtgagatgeettetgaatatgtgeeeacaagaagttgtgtetaagtetg gttetetttttttttttcctccagacaagagggaageetaaaaatggtcaaaattaatattaaattacaaaegeeaaat aaaattttcctctaatatatcagtttcatggcacagttagtatataattctttatggttcaaaattaaaaatgagctttt $\verb|ctaggggcttctctctcagctgcctagtctaaggtgcagggagtttgagactcacagggtttaataagagaaaattctcagc||$ tagagcagctgaacttaaatagactaggcaagacagctggttataagactaaactacccagaatgcatgacattcatctg aacacaacttcacagaaaatgtgaggattttacaattggctgttgtcatctatgaccttccctgggacttgggcacccg gccatttcactctgactacatcatgtcaccaaacatctgatggtcttgccttttaattctctttttgaggactgagagg agggtagcatggtagttaagagtgcaggcttcccgcattcaaaatcggttgcttactagctgtgtggctttgagcaagttactcaccctctctgtgcttcaaggtccttgtctgcaaaatgtgaaaaatatttcctgcctcataaggttgccctaaggat taaatgaatgagtatgatgcttagaacagtgattggcatccagtatgtgccctcgaggcctcttaattactggcttgctcatagtgcatgttctttgtgggctaactctagcgtcaataaaaatgttaagactgagttgcagctgggcatggt ggctaatgcctgtaatcccagcattctaggaggctgaggcaggaggattcgattgagcccaggagttcgagaccagctgg gcaacatagtgtgatcttgtatctataaaaataaacaaattagcttggtgtggtggcgcctgtagtccccagccacttg gaggggtgaggtgagaggattgcttgagcccgggatgatccaggctgcagtgagccatgatcgtgcactccagc
ctgggcgacagagtgagaccctgtctcacaacaacaacagcaacaaaaaggctgagctgcactgcactgcttgacccagtttc ttaaaattgttgtcaaagcttcattcactccatggtgctatagagcacaagattttatttggtgagatggttcttcatg aattcccccaacagagccaagctctccatctagtggacagggaagctagcagcaaaccttcccttcactacaaaacttca ttgcttggccaaaaagagagttaattcaatgtagacatctatgtaggcaattaaaaacctattgatgtataaaacagttt 30 gagaagagctgagacatccgttcccctacaagaaactctccccgggtggaacaagatggattatcaagtgtcaagtccaa tctatgacatcaattattatacatcggagccctgccaaaaaatcaatgtgaagcaaatcgcagcccgcctcctgcctccg ctctactcactggtgttcatcttttggtttttgtgggcaacatgctggtcatcctcatcctgataaactgcaaaaggctgaa gagcatgactgacatetacctgctcaacctggccatctctgacctgtttttccttcttactgtccccttctgggctcact atgctgccgcccagtgggactttggaaatacaatgtgtcaactcttgacagggctctattttataggcttcttctctgga atcttcttcatcatcctcctgacaatcgataggtacctggctgtcgtccatgctgtgttttgctttaaaagccaggacggt cacctttggggtggtgacaagtgtgatcacttgggtggtggtggtgttttgcgtctccccaggaatcatctttaccagat ttaaagatagtcatcttggggctggtcctgccgctgcttgtcatggtcatctgctactcgggaatcctaaaaactctgct tcggtgtcgaaatgagaagaagagcacagggctgtgaggcttatcttcaccatcatgattgtttattttctcttctgggctccctacaacattgtccttctcctgaacaccttccaggaattcttttggcctgaataattgcagtagctctaacaggttg gaccaagctatgcaggtgacagagactcttgggatgacgcactgctgctgatcaaccccatcatctatgcctttgtcgggga gaagttcagaaactacctcttagtcttcttccaaaagcacattgccaaacgcttctgcaaatgctgttctattttccagc äagäggeteeegagegageaageteagtttacaceegatecaetggggageaggaaatatetgtgggettgtgacaegga ctcaagtgggctggtgacccagtcagagttgtgcacatggcttagttttcatacacagcctgggctggggtggggtggggt tagatettttaageeeateaattatagaaageeaaateaaaatatgttgatgaaaaatageaacetttttateteeeett tgctgattcttgagtttagtgatctgaacagaaataccaaaattatttcagaaatgtacaactttttacctagtacaagg caacatataggttgtaaatgtgtttaaaacaggtctttgtcttgctatggggagaaaagacatgaatatgattagtaaag aaatgacacttttcatgtgtgatttcccctccaaggtatggttaataagtttcactgacttagaaccaggcgagagactt gtggcctgggagagctggggaagcttcttaaatgagaaggaatttgagttggatcatctattgctggcaaagacagaagc ggctagatcafgaagaaccttgacggcattgctccgtctaagtcatgagctgagcagggagatcctggftggtgttgcag attcgtgcagcatatgaggatgcagagtcagcagaactggggtggatttggtttggaagtgagggtcagagaggagtcag agagaatccctagtcttcaagcagattggagaacccttgaaaagacatcaagcacagaaggaggaggaggtttagg tcaagaagaagatggattggtgtaaaaggatgggtctggtttgcagagcttgaacacagtctcacccagactccaggctg tctttcactgaatgcttctgacttcatagatttccttcccatcccagctgaaatactgaggggtctccaggaggagacta gtagtcatttcatgggttgttgggaggattctatgaggcaaccacaggcagcatttagcacatactacacattcaataag catcaaactcttagttactcattcagggatagcactgagcaaagcattgagcaaaggggtcccatataggtgagggaagc ctgaaaaactaagatgctgcctgcccagtgcacacaagtgtaggtatcattttctgcatttaaccgtcaataggcaaagg gggaagggacatattcatttggaaataagctgccttgagccttaaaacccacaaaagtacaatttaccagcctccgtat ttcagactgaatgggggtggggggggcgccttaggtacttattccagatgccttctccagacaaaccagaagcaacagaa tttttctgttctttctcatatgattgtgcacatacttgagactgttttgaatttggggggatggctaaaaccatcatagt acaqqtaaqqtqaqqqaataqtaaqtqqtqaqaactactcaqqqaatgaaqqtqtcaqaataataaqaqqtqctactgac 70 tttctcagcctctgaatatgaacggtgagcattgtggctgtcagcaggaagcaacgaagggaaatgtctttccttttgct cttaagttgtggagagtgcaacagtagcataggaccctaccctctgggccaagtcaaagacattctgacatcttagtatt aaaaaaaaaaaaaaaaaaaaaaaaagcttcagtatgcaaatttttcaatgacatgtgcctgtggattctgaaaattcaca gatetgtetateettagetgagaetgaaggeatetaetteecaatgaceaaateetggtgetgtggegaeaetgageagg aactccattagaatatcaatatcactctgcagacattccatgatgtaagctatgttttctcttgttgcaattacacttaa tttaccaccagctgcttcaatgtcatgggctatcttgaaaaatgaagctcctttcgtagtcaaactggatgcaagacaca catagttttccaaaggagaaatcataaaaccatttggaaatttgatgatctcaaggtcctgatgatgtggagccactcct atgggggtagctgtgggctttaactttgggggcaactttgggggataaagtctcaaggttttggagggtgtgtgggggataaagtctcaagat tgttcgtgacccatagtaacttctggcttaaaggaccattcggcaagtttttaaatgtattttctataatttccatgtag ttctttatattttctatttcttatttaaaacctctattttagctcgtttcctttgacactgctctggcagggaaagggg ggcactgcctcattactgccaggtaggggtagaagtccattatccacttggtctccattgatacccaaagtggggagagg

 $\verb|ctcctgttactgctggtggggtgggagtcccccactaagtttctgctaatactgtcctggtggcttgctactattccc| \\$ atgaagcctccactgatactacattacttttgggtggtggcaaatgtcctgcctctccactagccctcctgctctaaaac aacccgagtagggagtgggaaggaagctttgttactggtaggtgggagctgaagtccagacttgccacattgtcccactg atgctacagggaggaggaagegggccacattactgcctgatagggatgaaagccccagctccctacctggccttcgctga taccagcctgctacaggagtgaagagatttgaaggcctcaatatagcctgtcgagggtggaagtcttgctcccaatgg gcctttagcagcatgggtgggtgtgtgggccatagctgtctctgtactgcttggctagagtggagtatttgaggtccaaaa ccaggttcctagcttctccagcacagtctgggatgtgtgagacacagagaaaatccagtgatgttactaccgtatggttt cttgggtcccaacgtctctagctaatctgctccaccttttggagttttcttatttgttttagatcagggatttagtcata 10 tttaataggagaaatatggaaaaatacttctactctatcttcctggaagttcctgtttattttttatgtccttttcctct ggctagaecgtaagagacttacgaaacaaacacttacacattctactaaactcaatgtccaaagtttgtgaacttcttga aacttetteteatgcatgcttaggcaacaactteccagttttactacacttgcccatccctagttttgttgttgcttaatcccttggcctagtgccaccatactcctccagcagagcaaccaattcttacattataggacagcacatatccactaaaaac 15 attgacaacaagatatttggcagactctotgctgcctatacataccttagcatgtggaactcaagtaatgagaggtccat ttaattggattgaattgggctggataggattggattgaatcctgtgggatggctaggctaaattagaaatgaagactagtttaacagcagtatccaaggatagttgactaatgagttaattttactctcaaagacagtctttagtagtaagctgtaatgc attatatcaaactattttccagtcaatgatttataagttacttgaataaggatgctaaagatgtgccttattgaaatggc aattagcacaaagttgggaatgaaatctaattagttaaataacagaatcacataaaaaaggacttgaataaatgtagcat aaaaagaaagaqaataaaatctcatccttccagataccacaatgtattataaagcaatagtaattaacatgagggcagaa atgagcaagcaagtgaacaaaataagacagatagtcacaggaaactcatatattataggtgctttgcgtataatgaaga 25 tggtccttcaaatcagttgggaaaagatgggttattcaataaatggtgttgggtaaaattggttatacattggtgagaaa taaaqtqaaactcctactttqtatcatatqcaaaaaatagattccagacagatgaaatatttaaatgtaaaaaataaaat tctaaaactactagaaaaaaagaagaatatttttattcctttgaaatagaaaaggtcttactaagcaaaacacagaagt tcctagaaaaaaatatataggcaacttgttaagcaaggtagattacaagaaaatatttacaacatttgacaggccacaga 30 tgtaggatcctttcaggcaaattatgaaaaggtgccctttctcagaaaccacagttaccattcagctttgtgaccagagg tttgactgtaccctagtccctactagcaacccaaccacataaccaacttcaaaggtcctgaatgactgtgttgtacttaa tggcagatgatctatctcccatttttgtcctaaggattttccaagataatatatttctgcatttgttttgcttttacttc 35 ${\tt actccaaattgaaatctatttgtgggataagactaaagaaatgcttataggaaaattgatagcaccaaattcctatctta}$ aaaaatgaaaaaggtttcaaatcaatgacctcagcttttactttaagaaaaatagaaaaagcaggataagctaaagccaaa gctgattctttaagcagatctataaaattgataaaactctagccagattgatcaagtaaaaaagagagaagacacaaatt accagtattaagaatgagagaggcaatatcactacagatcctacagatataaaaagtataaggcatactttgaataatt 40 caaattgaatagtettatagetattacaaaattgaggecaggegeagtggetcaageetttaateceageaetttgggag ggetaggaaggeggateacgaggteaggagtttgagaccageetgactaacatggtgaaaccetgtetetactaaaaagta caaaaattagccaggcttggtggtgcgtgcctgtaatcccatctactcaggagaactgaggcaggagaattgcttgaacct gggaggcaaagttgtggtgagccgagatcgcgccactgcacttcagcctgggcaacagaacaagactccgtctcaaaaaa 45 aaaaaaaaaaaaaaaattgaaattatagttaaaagtetteccacaaagcaaactetagacccagatggettcaatggta aattotactggacaatcaaacaggaaacagtaataattotocacaatgtotttoataaaattgatgcggaggagatacto tccaactcattctatgaaactagcattaccctgataccaaaatcatacagagacagtgtaggaaaacaacagatcagtat ccttcatgaacataaatgaagtacaatgcagtcttatgcataaatcagagcttcattgttctacagataaggtaatgtag 50 tatgtcagtcctcacagcacctccctcagtcttcagcacttaccagctcatcaccacaaccgataccacattggataatt ggtacagaatagggccaagggaaaattacagatgtaaaaagaaaagtgtgtgaaatagtatccttagtgctcacaaatac äätgatttcattgtttttaaaaataaaaaatgacaaatgtctaatgcttggtggtaatgctttattgaatgtgtgttata cactggttcctcattcctgaagttagaaataataccttcctcttttcatttggttatgtttgctgaaacaaatcaaaggc 55 tgagattgaaacacatgctacttcaggtggatgaccttactactaagctcatcacaacagcacttacagctgaagacccc gaggaatgactcctttccacttgaagtgagctgcaggcttctaggaaaggcaagatgcacatttccctcctgtggagcat aaagcctttgtaattcaggacttaggacccatatggatttgaaatattatgacattggagctggagtggttggggacaac accagtagtgttataggccatggaatgtcaaaagaacatggaaccctgttaaaatcattaaacatcaaaactctcccctc 60 ctctggtgatatggtttggctgtgtccccatccaaatctcatcttgaactcccatgtgttgtgggaggcacccagtggga gtgaggcctccccaaccatgtggaacttttaagttcattaaacctcttccttttgtaaattgctcagtctcaaatatgtc tttatcagcaacgtgaaaacagactatctgattttctgtgggatgtggattatgaccatggacagagcataactgggaca gagetggaaaaaatattaattaggtgettaaaaatatttgttagaactatetteatgaatgagaatcaateetgttteea tggtgattcaccaggcatcaattccaagcatccatgaatcagaaaagtcctatcttctcttagttatcatccaggactcc cctattcatttctgtaaccttaccacctgacccagaatagctgttccctgaagatttggtggattataaatgtggatgtc 70 ctqtgaaattcttgagggaagaacctatgactgatttatctctgtaaactcatgccaccagtattcaaaatcacacctag cacalagtaaacactcaatgitttgttgaatgactgaaggaatggatgaaaatgaacctccttgcttctgaccagtggatg aqttgcttggccgtgttcctacagcctagagctcatcccctaaagcatctgaagttacccattagtgcaatggttcttga acgctggtgttgatcagaatcatctggatgcccaggttctctgaaataagatagggtctaggcatttgtatttttaccaa ggaggtgtgatggagtcagatgcaagaaggctagttgaagaaaccacatgagagtttagtgtagtgtattagaagactgg tttggctctgtcgctagtggctacatcatcttgctcaagtcatgccagtctcaggacctcattcagtctcttcagctgta 75 atatgggtgggttgcaccacataaccagaaagatcccttccagctctacccacttacaacatggtcaaatttggtctgat tttttaaatcgtagtacaatatatatgacataaaattcaccattttagccactttaaatgtacaattctgtagcattaac tacattcacattgttgtgcaaccatcactaccgtctacttccagaactcttcatcttgcaaaactgaacctctgttgtca ttagtcactaactattcctctcccccccctccttctaggccctggcaatcaccattctactttctgtcgctatgaatttga ctactctaggtaacttatataagtggaatcacagcatttgccctattatgactggtttagttgacttagcacaacctcct ጸበ aaggotcaaccacattttagcatgtgtcagaattttctttgtttttaaggotgaataatattctgttgtatctgtaaata acatetttatteatttgtecateaacagaetgttgagttecteceatettttgaetattgtgaaaaatgetgctatgaac

ctgagtgtacagacatctggttgagtactgctttcaattcattgtttatatggatcatatggtaattttatgtttaattt ttttggaactgctacattgttttccacagigtacatcattttacatttccatcagcaatgcacaaggttccaatttctc ctaggetggagtgcagcagggtgatetcagctcactgcaacctetgeetcccatgttcaagtgatteteeteetcagec ccatgttggtcaggctggtcttgaactcctgacctcaagtgatccacccgcctcagcctccaaagtgctgggattacag gtatgaaccactgcacccaggccattttttgctttttagataatagtcatcctagtgggtatgaagtggtatttcattgt ggttttgatttalatttccctaatgatcagtgatattgagcatctttcaagtgcttattggccattttcttctttggaga aatgtctatgcaagtcctttgctcattttttaatccagttgctttttgttattctttttgatttgaaagtgttctttata cctcttgtatactaatcccttatcagatatgatttataaatattttcttcttttccatggattgcccttttactctgtt gatagtgttetttgatacaaaataaittttäätttgaatgaageeeaattaatetattittgtitettttgttgeetgtg tagttacagetettgtatttaggtatttgaetattttgagttaatttttgtacategtataaataagaatecaatttt 15 ggtcttggcacccttgtaaaacataatttgaccatatatgtgagggtttatttctgggctctctattctattctattcta attttgctcatcataactttgtagtaagttttgaagtcaggaatcgtaagacctccagctttgttcattttcaaggttgt aaaaaaaaatcattgaaatttttaaacagattgcattaaatctgtagattgtttttgggtagtattgacatttaacaacat 20 taagtttttgctacctggttaggtatacttctaagtattttctactttttgatgctattgcacattgaatcgttttctta atttggtggtagcggggattgtgcattgttagtacataaaaatgcaactcattttttgtgtgttgattttgtatcctgca gctttaacaaattcatgttagttctaacagacttattctatgaatcattagggttttctacataaaagatcatgtcacct acaaacagagataattitaciccaccccttcccgttgcaatgccttttatgtcttttcttgcctaattgttctggctaa 25 gacttccactaccatgttgaatagaagtggtgaaagtagacatccttgtcttgttccaatcttagagccaaagctttcag tetttcacggcctgaaagactttgtaatatgttctcaaggttaaagaacttcagaagttttctaagcaagagaccatttt attaacttagttggcagcaattctgagagattagaatgaaaagatagaggataagaagtatctggcaggtataatatt gagtgtgctgaatatacttttagttttgtataggtgttaaaaaatggcaaaaggaggccgggcgtggtggctcacgcctgtaatcccagcactttgggaggccgaggcgggcagatcatgaggtcaggagatcgagaccatcctggctaaaacagtgaaac 30 . cctatctctactaaaaatacaaaaaactcgctgggcatggtggtggacacctgtagtcccagctactcgggaggctgagg caggagaatggtgtgaacctggaaggtggagettgcagtgagecgagatcacgccactgcactecagectgggcgacaga gagagactccgtctcaaaagaaaaaaaaaaatggcaaaggaaagaatgaaaaataaagcaaggtcccagaagaggccaaaa atcttaatcaaaattgactgaacattacggaatgaaatggtttttcctttactccaattaacgacttcacaagaagattc catcctcgtttataagattaacccaaaaccagcacttaaaaccagaagccttgaaaggatggagtttggggacccttctc 35 atgtctattcccagaaggggtcttcttctggggtcctgtcccctaaagagctaggcaaaaagtatgcttgccacatctg ttgaaagatagaaagttggtctaaaaatacatgagagggaactgaaacatttcagagaaggcaagactcagaagtaagaa accaaaagaggaaggtaaaattctagttacaaagaaaagaggaatggaaattaaattgtcttacagagaaaatccagaac tgccccctcttcccttactactccatcaaaaaaggggaaaaatagtcaatgggaaagttttgagaaaaatagatctctgc attettetggttgagaatteagacaettgaactagagagetgggtaatttettgaetaaaggtgtgttagatetgaaag ggtttttcttaaaattgtctgtgttcatccctcccatcttagagaggaacacaggataagagacctctggagctccccca gggtcaccgagctaataggatcagagacaaagctacaaagtcattttctgacatctctccagggctctttttttctgac gygttatetgygttattagygttatttattacattggattagcaactctccttgagctttcctcagtaccaggtttacatctc
agtctgtgggtctcagagaaagtacccaatcagcagcaacattacctggaaactcatcagaagtgccctcctcagcccc accccagatctatgcaatcagaaactctggaaatgcaggccagtcctaacaagcccaccagggaattctggtgcactaag 45 aatttacaaaagagctttatgctcttgttaaatttgagggtagtcttctcaaaatctctgtgaggctagaaagtcagata ttgaaacacctgttttatgggttcaaagataggttcaaaagagagtaaatgattgttggggtggcaggtccagagagggc aggatcaaaactgcaattgagtcttctgccttataaaccagcatagcttccccaaggcacgtcacttctcgataaaatgg tgacaactagagtgtcctttcagatcattcttagaagcatggagtgctaggtcaattgtgtgtaattgatgaggaaataata 50 atactaagaactcccatcttctacgtccttatatacaatcctgtcaggtagaagctgagtctcagagagaacaagttgcc ctcccaggaccaccaggtaagctcggcatagctgtgcttagaatgtaggctgtctggcttctgggctttccggcctgcccaggg aggetttgtgggttetacttggtcatccagatcacagagggcagcactgactcctacccagtgctcttgactgtacatc taatactttctactaagaaaaccccttctctttagaccaatggttttcaaatcttggtgtgcattggaatcacctggaaa gcttgttaaaacacagattgtcccaccccaagagtttctgattctgtaggctggggtggggacccatgaaagtgcatttc taataaggtcccaagtgatgctgatgccaccagtgtgtggacaaccctttgagtggtgaagctctggacaccctaatttg caaggctaatcaggcatatgtggcaaatgaatacgaactgaaattctgactccaatatcttcactgatattcctaatcca tagcatacacacagtcccattcgtttcccttttagcttttaatctacatttatcctttcttcctctgccactgccttctc tccagttagctcaaaccaggtaacacataaccgcctcctaactcatccgcccagttggtttctttggctttaatctagac ttottatctccaccagatttgccttaccaaagcaccaatttottaaggcagggttagaattaaaaatcttctgttcctcc 60 tcattgcctaaaactcctaaacttatgattcaaggtcttccatgaccttcatggaccagtctaacgttttagcctgtcct gcetttcatgaaatccccatcgagaggttttccctctctcagctctccaaagcacagatgtctgcgtttgtggctatta tettaegttgttttgtattaaaattteteeagetttacacatttgteateetettaaggacaaacatettattatggtea 65 atgtgaagctatagaggataatttaatgaaatattccaagggctagtcattacacatgactgatttatctctgtaaactc atccacactcatccacctgattttgattggccaagttaatgaatcagagggaaaagatggtaaaaatataataaaaatc cgggttctattgacagtgaagcaagacctgagagagaggctaaattcccttgtgtctagctgccacaatcttctgagaa taatggcctttcttcccgtctgccttctgaatcataggcaaatttttctcttttgqtgatccctaatacagaaaggggaag 70 tcaaataaaatatatacaaggagaaggattctggggagacagagtttcttgattcccttctgcatgctcctcctcaaaagc ctttatgagcttaccttacatttaaattcttttaaacaaggcattatgtggtctggtcttttccagctccacacaccttc acactacattccccccagctaattctgctctgggaacactgaccttcttttagttctttgaacacattgatttctggtca aatcagaaatagcacaacagagaataaagtcattgagccatcttctgagctccaaaagacaaattttctccaaaaagaca 75 aattcaggctctaaaacaataccttaaggaaccagaagtggaatagaaaattaaggtggtaagcagggctaaaccacatg cctgttgagcccaggtttggaagaagacaatggcaggtaggaatgtggtttctgatgggtaataggtactgttttcattt actttctgttgcttataacagaatatctgaaactgggtgctttataaagaaaaggaatttatgtcttgcagttagggaaa ctgagaagtcaaaagttgagggctgcaattgacaagtgccttcttgctggtggggatactctgaagagtcttgaggtggt cactettatgataacccattaatecattaactgattagecaattaatecatgaatggattaatteatteatgagggeaga gccttcctgacccaaacacctcttaaagactccacctctcaatactgccacatgggggattaaatttcagcatgagtttt tgatgagacaaatattecaatgatagcagttattaaaagtacatgettgagagaaggggattggagteageeteagtget

taaactcaaaagctaggatgaggctctaacactcctgaaagaaggagttgctgctggctccttaccagggctatatcttt tacagagcaggagacctaaagaggcaggaggacccggacatcgtttggaaaccaagcactaaaacaggccatctgttata cccccaatatcctctcaggacaagtgttttgaaccactcacacaaggactagtctgggcaagtgggctagatgaagaaac cacaaaatagctaagtggggagagaaaagaccaaaaatactattttattcaaaatgaaaatacaatccaaaattccatgat tcatgaagaaatcaaatggtatgtgttaggtggttcttgcattgctatagagaaatacctgagattgggtaatttataaa gaaaagaagtttaattggctcataattctgcaggcttcacaggaagcatggtgctggcatctgctcagcttctggagagg aaggtgtagggagccaaagtcccatgggacatgaccaactcagcattccactggaggctatatgatcaaacagcaaactg 10 tttatcacgaatgcaggatgtgagcaaactcacaactggtcctgccaacagaaggtttgttggaggcaatcactccctgg tgcctgaggtaatctactgcaacatctagagaatgcagtcttgcaagcctactctggacagggcagctggcaccttattc catececetteteaetatettttttttgeetaataaatacagagggetgtgtaaageteagggeeettgteeaetagagge aagttgcccctgaccccttcttccaaatatactctttgtctettgtcttttattctcacatttgccccctttgttcag ttccactaggtccgtgcgggttatatactggtgccctgagcagcaacagaatcaggctctcaacaagtgtcatccgaaca 15 tgggactttgaggacatgaacgaagaaggtctgctggagcagaggaacagaaattgacaaggtgaacagggaccctggga cgagtctgccagcagcggatataaggtcagttacctaaagaggtactgatcagtgccctaaagagatactgggagcagtg Ctttaaagaagtactgggaatgggaaattttctgaatcagggtaacaaggggaagaatttgtctattaaagaaaaacatt gtgaagagatccaccaacaggctttgtgtgggcaataaagctttttaatcaccttggtgcaggttgggctgagtccaaaa 20 aggttgggctcagagacctgacattcctatcttttatattaataagaaaaacaaaacaaaatagtggttaagtgttggg 25 30 tatattaataagtaaaataaagcaaaatagaggtgaagtgttggtgtcatgaggggaacaggaagcagttcggtcctatt tgcaaattgattttgggggggtaaagaaaactagtgtacctttgcctgtccaattaataagtagacacatgtagatggag gagccacagaggaagaagagaactttgtaaggcaaaactggaaatgtaaagggaaaagatgaggagcaccaaaaagag gtgtcttgcacccagactcagggatctagtgagagcagctgttagaggttgtaatggggattaatggggctactggg 35 tagagggggaggttcaacttttatggtgtatgagaaagcgcatagtgtctacaagcaacctttcattgctattcatagga ttgggtataagtaaacaagaaggggggctaggaggagagtctgaagaacaaggggaaggtagccaaggatggagtgaaa tgłaggcaaatgtettaaaggaaafgagaggttetaagagggetagtggettgtaacecacatggaagaggttacg aaaggatgatagaatggaatgagcctgtgaggctggaaggaggaattttccttggtccaagaaccatttgccttgtgtgg gaagagtitgataggtggaagtttcagtgggagggtaggggagtgactgatgagaaggagaaaactggccataaggg acagaagttggaatgctagctgctcctttagctaccttatcagcataagctttgccctgagtgatgggatctgatgcctt 50 cagcctaaaacagtaaggtcaatctgtttagacagaaaggctgcagggcactgtccaagctcttgtgtaaggattctgac cgcacagccttgtactttggctgtgtgtgaatgaaaagggttggggatgagttagggagagctagtgtgggagtagcttcta gggctgtttttaaggaacataaagaggagtggggaaaggatttaggatctatggggtcagctaggtttccttttgtgagt 55 agaattatgccgataggtaacggatgaggaagaaatttgggctttggagggggatacacgatattcccttgagaatagatgttggaggaggaggagggtgtcctgttgggaagattcataggaggggctataaagtagaaggccatcaaaatattgaata aggtgacaagcagatggacagaaaagtaaattatgagaaaagggcttgactgaagtaatggaggctgtccctgaagccttg tggcagtacagcccaggtaagttgctgagactgatgggtgtcagggtcagtccaagtgtaagtgaagagaggctggggtg 60 ${\tt aggagagtatatgggtttggcaccacagagtggataggcaagacaatttggttgataagctgaagatcctggacaggctt}$ tagtcccttcaaagcctgttgtgggatgggatactggcattgagcaggataagggtaattaggttttaatgggatggtag 65 70 75 agagcctaaatgctaactaatttgggagaggtcagataaagtaaaggaacattaatcttgactatgccttcagctcttg ccacctctctaagaggaaattgttgggcaagtggaggagtgctagtcgtggaatgaaaccataagctggactgggtgtga ggaggggaggtgatagaaggattacagcgtaggggagtagaggctgaggaagaattgggacctggctcagcctggtgagg agtggcctggtgaggagcagcctggggaggaggaggaggttagatgggttcgtagaaaagaaggattcaaaggactcgg ggaagggagtgatgtgtaaagaatgcctggacatcaggcacctcagaccatttgcccattttatgacaaaaattatctaa gtcttgtagggtggagaaatcaaaagtgccattttctggccatttggaacaattatcgagtttgtattggggccaaatgg tgttgcagaagaaaataagatgcttaggttttaggtcaggtgagagttgaagaggttttaggtttttaggaccacaggct

acagagagaggggtggtactcatcagccaggggaggtggtacttgccaccaaggtgatggatcaaggcagtcatcc tgtcttcccgagtccgtgaccggtgctggagttttgagttcacagataaaacacatctcctctgtctctaccagaaaggg aaaggaactgaaattaaggaagggagagattgaagggtggagagatagcaagagagttggaaaagagaataaaaagaggc cacttactcaatttaaaattggtgagatgttccttgggctgatctgaggacccaaggttgtaggtggatctcctcacgga atgaggtgaggacaggggactggtctccagaaggagttcccgagtcctggatcttcagcaccaaatqtcatqtgcatcc atgtgaagagatccaccaacaggctttgtgttatcaataaagctttttaatcaccttggtgcaggtgggctgagtctga 10 gtcacaaggtcgattgatcagttggggtggggcaggaacaaatcgcatggtggaatgtcatcagttaaggcaggaactca ctattteacttettttgtggttetteagtttetteaggeeatetggatgtacacgtgaaggttacggggatatatgatgg cttagettgggetcagaggeetgacactaaceteetgeagaagecacaaaaggttattacacataaaceatggtttecac aggcaggcactcttgatgtggaaaattgggatagagcaggattaaaacaagctcatcaaaaaggtcttaaagttgattct 15 tcagttttctccacttggagtttagttcatactgtacttctgccattatctccttattattctgcggaacagcaggctga atCtaaaaattggaaagaatttgttgtcctactcacagctccaattgaatataaaaaacaggagaggaggataaaaatt ggcctataccgcctcctccagatgcagaaacatctgtaccatctccttcagtggcagaaatagagatcccagtacaaaga attttatgctctgctgtcatagctggagagcccttaggaccttgtgcttttcctatttctgtaaggcctgatccaaataa tccacagcagtttattcatgaacactctccactagaatttaagttgttgaaggaattaaaaactagtgtggtcaataatg gagtacaaagccaatggttcctggaggaaggaatgctagacatagaactttgggagcaagtggggagaaatcttaaacaa caccaggcacaaaggcatcaggtcccagtaaaatcttttatgttaggggctttgagtagagcagccctggttgttacaca caaaagagcctaaaaagggaaaggaggaaatgtcacctgccttatcacctcccttccctcagtgccaatatcactg tacagctatcagtccctgtcttaagcaggcagcattagaaggagagctcttagccgggtgcagtggctcatgcctataat 25 $\verb|cccagcactttgggaggccgaggcaggcagatcatgaggtcaggagatccagaccatcctagctaacatggtgaaacccc| \\$ 30 atgctcagaggcagaaaagctcacagcgacaaagccaacaaggtctgcccaggacggcagcatccctctggcaaaggagc aagggagcagcacagacacaggcaaagcctaaacaagtacaatgtggccacctcccaggacctgcaccactqccctctqq ttaagtaaaacagtaacctttgaagggaaagagattacagagggcccatgaattagttgaagagtaattaaaagctaggc 35 atgtaaaaccacacttacgctttaaagaagaaatttaaacctaattaaatgatatttgttaaattagaaggtaaaaatg ttgtgccctgttgggaacaggcccccaaatctggccataaactggccccaaaacaggccataaacaaaatctctgcagca ccatgacatgtttgtgatggccatgatgcccaccttgaaggttgttggtttactggaatgagggcaaggaacacctggcc cacccagggcagaaaattccttaaaggcattcccaaaccactaatgatagcatgagcaatctgtgccttaaggacatgtt cctgctgcagacagctagccagagcccatccctttgttttggcccatccctttgtttcccataaggaatgctttcagtta ttgagttcctcagctagtgagtcactgttttcaagactgtttgaagtctatatgaagtccataaacttggtcagccgaaaac tcaattacaagatctaagctattctgcctgtggctttaagcacatggttaaagtatattatttaagtctctccttctaga 45 agttatgactgtgatatcatcaggattcctttaagtaaaaggcaattcaaagcggtattgcactcccccatacctaatgc tttaacactgtttactgatgggtctggtaaacatggaaaagdtqcaqtctaqtaqaqaccacataattcaatcactcqat 50 aaatgagactttgataacccaggattttaaatgttgaagaacacgggatatcagagtgaaaaaggtttagggaaaattct gacaagggaaaattctaacctgatatcaataactggaaagacaggttaaaccctgcaaggggatacattgacattttttc ttcctcacttgctcttttctgctgtctgaatatgggcatgagggcaagagtcattttagaccaccaagtgaccttgagga tagaagccttatactagaggtggtgggaaagaaaaaacagaaggactcataaagaaaaaataataaacctcagtattaa 55 gatggaaaaattcccccaattggtctataggttgaacttcatctctattaaatttcagctatgttttttgcagaatttgat atgctgatcataaaatttatatgaaaatgcaagagacacagaatagtcaaaactttgaaaagaagaaagttggaggactt acacttgttgattttaaggctttttacaaagctataataatcaagacaatgtgttactgacataatgatagacatattga atgtattetgteatecagaatacataaagaacacetteaaeteaataacaacaataecaacaagggtgecaagaecaate aatggaggaaataatagtetttteaagaaattttgetgagacaactaagtatttatatgeaaaataatgagtttgaatgg ctaccatatacaaaaattaactcaaatggactatattaggtcagtgcaacagtaattgcagtttaccaccattacttgtt ttttttttttggtttttttttttgagacagagtcttgctctgtcacccagaccagagtgcagtggcatgatctcagctca tttttttgtattttagtggagatggagtttcaccatgttagccaggatggtctcaatctcttgacctcgtgatctgccc 65 acctcagecteccaaagtgetgggattacaggeatgagecaccaegeetggeetaccattacttttaatggeaaaaatge agttacttttgcaccacctaatagaactaaatgtaagagctaaaactacaaaactgttagaagaaagcataggagcaaa tcttaatgacatgagagttggcaattgttttttagatatgacaccaaaagcatcaaggacaaaagaaaaaaatggataaa qaqaacattttttgcacataatatatttaataataggctqacatccaqaatacataaatacctacaactcaataccaaaga gacagcccaatttaaaaatgggccaaggatatgaataaacatttctctaaagaagatacaaaaatggtcaatatgcacat 70 gaaaagatgctcaatatcaatatctattaggaaaatacaaattaaaacacaaaatataaaacacaagatatcaatttaca Ctcaccaggatggctgttatcaaaaagacagataacaagtattggcaaggatttggggaaattgtaaccttcatacattg ctggtaggaatataaaatttgcagcaggtttggaaaacagtttagcagtttctcaaaaagcctgggcatggtggctcatg cctacaatcccagtgctttagggagctgaggtgagaggattgcttgagcccaggagttggagaccagcctgagtaacaca 75 gtgagacctcttttctaccaaaaagaagagttaaacatagggtaccatataagccagcaatccatctcctagatatgt acccaagaaagttgaaaacatatactgacacaaaaacttacatatgaatcttcatattagccttataataatagccaaaa agtagaaacaacccaaatacccatcaactaattaaaatatggtgtatctatacatattatttggccataaaaggaagtac tgatacatgtcataacacaaatgaaccttggaagcactatgatetetgtattagtcagctettgtattgctataaagaac tacctgagactgggtaacttataaagaaaaaggcttaattgagtcacagttccacaggctgcacagggatcatggcccag gagacetcaggaaacacagttatgatggaaggaagagagtgaaggaggaggtgetacataettttaaaccaccagatett gtgagaagteactcactatcatgagaacagcaagggagaagtccaccccatgatccagtcagcccaggccaggccccaa

 ${\tt tcccaaatcctgtgtccttctcacattggaagatacaatcatcccttctcaacagtttcatttcagtattaactcaaaaaa}$ atacaatggaggtacaggcattgggcaaatatatccattccaaaagggaaaaattagccaaaacaaaggggccacaggcc ccacgcaagtccaaaatcaagcagggaaatcattaaatcttaaagcttcaaaatgatatcctttgactccatgtctcaca tccaggccacaccaatgcaaggagtgtgctcccaaggccttgggcagctctacctgttgctctacagggtatagcccctatggctgctttcacaggctggcattgagtgctccagcttttccaggtacacagtgcaagctgttactacatatacacca ctagggtctggaagattgtggccctcttctcatagctccagtagacagtgccccagtggggaatctgtatgggggctgca accccacatttctcctctgcactgcccaatagaggttctccatgagggctccattcctgtagcatacttctgcacatccgcaggc
tccaggtgttttcatacatcctctaaaatctaggtaggggctccaagccttaactcttgccctctgcacatccgcaggc
ttaataccacatggaaaccaccaatgcttatggcttgcaccctatgaagcagtagtctgagacatatctgggcccttttg ttttcttttctactacatggtcaggtcacaaattttccaaacttttacgcttccctttgaaatgtaagttccagttgcag 15 gtcatttctttgatcacaaatataagcatatatttgtagaatcagccaggccacatcttgaatgttttgctgcttagaagctgcttccaccagataccctaaatcattgctatcaggttcaaaattctacatatctctagggcaagggcacaatgcctcc aagacctttgctaatgcataagaaaattgacctttgctccagttcccaataagttccccatcttcatctgaggtctcctt agcctggacttcattgtccatatcagtatcagcattttcatcacaataatttaactagtctctaagaagttccaaacttt cccttatettectatettettetgagecetecaaaetgetecaaeetetgeeeattaeeegggttecaaagetgetteea cattttcggtatctttatagcaatgctccattcctgataccaattttctgtattagtctcttctcgcactcctgtaaaga actacctgagactgggtaatttataaagaaaagaggtttaattgactcacagttccacaagctgtataggaagcatggtt gggagaggtctgcctccatgatccaatcacctcctaccaggctcctcctccaacattggggattatgatttgacatgaga tttgggtagggacacaactccaaaccatatcaatcccatttatatgaaatgtccacaatagataaatctatagagacata aaatagattggtgcttgcctagtgctggacgtgacaggagggtgtgagtaaaagaggcaatggagtgataggtacagggt ttotttttggggtgatgaaatattataaaattagattgtggttatagttgtataactottgaatatootaaaaatatat tgaattttccattttccattttaaatgggtgaatcttatggtatgtgaattatatctcaataaaactgcaaaaaatgcaca 30 aagggaataaaacaatggcatteteagcaaeetggatggaattggagaeeattattetaagtgaaataaeteagtaatgg aaaaccgaatatcatacattctcactcataagtgggagctaagctatgaggatgcaaaggcataagaatgatataatgga ctttgggaactcagggaaagggtgagaggggtgaggaataaaaggctacccattgggtacagtgtacactgttcaagtgatggctgcaccaaaatctcagaaatcaccactaaagaacttatttacataaccaaataccacctgtttccaaaaaacct attgaaattaattaatttttaaaaactgctgaaatcaatagtgaaaggatggactattcaataatgacacagttaattga atatcatattttaaaaattagatccttacctcacctataacattacattaaattccaggtgaattatagaccaaatatg aaaagcaaaattttaaattttaaatattttagaccaaatttttaccaggtgaattattaaattttaaaattttaaaaaccaggatgcaaaa acactaatcataaagagatattttaggccaagcatggtggctcacacctgtaatcctagtactttgggaagctgaggcag gtggatcacttgaggtcaggagttcaagacaagcctggccaatagggtgaaacatgtctctactaaaaatacaaaaatta getggaaategetegaacceaggaggeagaggttgcagtgagetgagattgtgccaetgcaetceagcetgggtgacaga gagagactecaceteaaaaaaataaataaataaabaaaataaagagagattttaataaggtgcattaaaataaaaaactatee ggagtettgetetgteacccaggetggagtgcagtggtgcaatcteggettactgcaaactteaccteccaggttcaage aattotootgootoagootootgagtagotgggattacaggtgtgtgccaccatgcctggctaatttttgtattttttgt agacacggggtttcaccatgttggtcaggctgagctcaaacccctgacctcgtgatccaccttcctcagcctcccaaagt gctgggattacaggcatgagccaccgtgcctggcctaccatgaatatttttttaaaggtagcatccagaattaataatct tetecaacaaattteattagtagteagggaactgeaaattaaaateaaagtaaaataetaettteeacteattagaetaa ttggagagaaattagtcagtatctagtaaaagttagtgatacaccttccattttcatctgttctgtgctgctaccaaaga 50 atacctgagactaggtaatttataaataatagaaatgtatttctaatggttctagaggctgagaagtccaagattgaagg acctaccctatagcccaacatttctactcctaggagtatgccctagagaaattctgcataaatatctaaagagaggccat 55 tgttgcattgttaggtactggaaaattggaatcaattactatgtctaccagcagcagaagatggctttttaaaagttttg gtttattcatgaaatggaatattgcataaagtatgctccatctcaccagatgaaaacatttttcactaggactatttcaa aagtagtettateaetgggettetetattatgeataaaaattttaagtgaaeatgttetttgaeetagtaeteetaettt acacaaggaaattttagttgcagctccaaatttttactttttacacaatgaagcgaatatggcaaaataagatttgttaa agttgggcagcaggtacacagatattctatcattatcctttgaatatttctgtagatttaagttgtccattaaaaaaata aaatacacacataatttttaagattagttttttctatttcctggccttcgcatgcactgttaacttttacctggaattctt tatgcagtaattaagagcaaaggtgtagagcaagactgcttgagcttggatcccagcactgagttgatttagggagaata acttaatctcttaatcccaagagaaaatatgatataatagttttgagctcataaagttttcataagcattaaatgtgacc tatatatgtaaagcaatctaacagtgcctatagtatttataagtgtctgcattaccaaattcatcattatcatggcatgt catgtcaccatcactacattaccatcactgtcaccatcatcatcaccaccaccatcatcattaactccctttgtct agtcaattcatatttgttcttcgtattttagatacctgttaaaatattttttcaaagatgtctactctgattcttcagta caaatttgatttaataagatcctatcattttgtccaaatacttataaaaatttgtagttctatatttaatgtgttttgtt 70 tgtttaacatctctccctacattgtgttaagttttttaaagagaaggtaagggttaaagagagagagagagagaaag agagacagagagagagagagagggttctacagcaatacaggtatattagaaaaacctgcaaaggtggggaccagcttaa 75 80 tcaaaagaacagcacgggaaaaatctgcctccatgattcaattacctcccacagattcctcccatgacatgtggtaatt atgggaactacaattcaagatgaaatttgggtggggacacagtcaaaccatatcagctgggtatgttttattcacctttt tatacccattgtcatgtcttctggacaaacaatggatgtaaaatggtatagactcctgagtactcatttgttgaatgaca

aatctatqaaccatttgaccagtatgcagcagccattaaaattatgtttatgaataatttacagcatggaaaaatttggg qttgctaqtaqaaaacaaaaaggtacaaaaggatatatatataataagcctacaatgccatataaacaatactaacagcaa aaacaaacctataaattgggggaagatggggcagatagaagtaacctaaaatactaacatgttgttttggggtcatgaaa ttataaatgattatgcaccccttaatttttactttctatgtttgatttttctatggtaaatgcatttttattgaggtgga attcacataacatqaaatqaaaatttagtggcatttattatattcacaatattgtacaaccactagctctacttccaaa acattttcatcactccaaaataaaaccttgtacccattaagcagttactccccattatttcctctttagctcctagcaa ccaccaacctgctttctqtctctagggatttatttattctggatattccataaaaatggaggcacaatatgtacctttta tgtctggcttctttcaccaagcatgtttttgaggctaatccacattgcagcatgtatcagtacttcatttctttttatga ataactqtatacaqaccacaatttgttatccatttttttggtttatggacatttgggttgtttccatctctcaactattgt 10 qaatagtgctgctatgtatatttgtgtacaagaatttggttacctattttcaattctttatgtatatatctaagatgaa ttttatattcctactagcaatgtaagcaagttccaatttctccatatcctcaacaacacttgttattttctatttttgtt atagccattctaatgagtgtaaagtgatatatcattgtggttttctttgcattttccttatgaacattgatgttgagtac cttttcatgtactttttggtcatttatatatcatctttggagaaatgcctcttcgtgtatgttttgcccattttaaaact 15 agattgtctttgttgttgacatgcatgcattctttaaatattctgcatactaggcccttatcagatatatgatttgcaaa tgtttttttctcattttactggctgtcttttcactttattgataatgtcctttgatgcccaaaagttgtttattttgatga agcatatttatcaatttatttettttattgeteatgettttgatgteacetetaagaatttataaccaaatcagaggtaa tgaaggtttacccctctattttcttctaagagttttatagttttgactcatttacttaggtcgctgattcatttttagtt aatttttgcatatgatgtgaggaagaggtccaactttactcatttgcatgtggatattcagctgtgccagcaccatttgt gaagagtctatcatctcctcatttaataatagtattgacacctttgttgaaagtcaattgataataaatgtatgagttta tttctggaatctaaattctattccattgatctacatgtctatccttgtatcagtatcacactatcttgattactgtagat gcaatttaatagggatatgaggattgacttttctattctacaaaattaaaattttgttagagattgcattgacactgtag gtcttctttaattttctttcagcagtgttttgtagttttggggtacaagtctttcacctttaaattttggtgaaatttatt cctaggtattgcatttttttatgctattgtaaataaaattattttctcaatttcctgttggatgtcattgcaggtgtat agaaactcaactgattctttgtgttgatcttatgctgagaccagctcagttggggagaccctaacctagaagcactagag gtatcccttatgggaaacgaagggaagggctgaataaaagggatgggttgggctagttatctgcagcaggagcatgtcct taagtcatagatcactcatgctattgtttgtggtttaagaatgcctttaagcggttttctgccctgtgtgggacaggtgt tecttgeceteatteeggtaageceacaacetteeagegtgggcattatggceateatgaacatgteaeggtgetgeage qqtttttatqqccaqttttqqqqccaqtttatgqccaqattttggggggcctgttcccaacaatcttataccttgcaatt ttgctgaatttgcttgttaactttgatagtttttttgaggattatttgggatttttctacatatcatgtcatctgtgaata 35 aaqataqttttqcttctttctttcttcttcqatttggatgccttttatttccttttcttgcctaatttccctggctagaacttcc agtatgatgttgaataaccatggtgaaatgggcattcttgtctttttcctgatgttagagagaaatttttcagtctttaa ccattgagtataatgttagetgtgggttttttacaaatatettttatatgttgaggaagtteetteetacteetactte ttggagtgtttttgatataaagggtatttaatttgtcaaatgctttttctgtgtcagttgagattatcatgtgagatttt ttttccttcattctattagtgttgatgttacattggttgattttttatgttgtactacatttgcattcttatataaatt 40 tcacttggtcatggtgtataacccttttaatatgcattggatttagtttgctagtattttgtttagagtttttgcatct atattcataagcaatatcagtccacaggttttttgtgggtttatttgtctggctttgctataatggtaatgctgtcttctt agaatgaatgagggagtgttttctcctctttcattttttaaacgtttgagaaggagtgatattaatttttctttaaatgt ttggtagaacttaccagtgaagccgtctggttcttaacatttttctgtgttgggaggtttctgattaccaatttgatctc tttaatttttacagatctttcagattttctatttcttcttgagtaactttttagcaatttatgtattttagaaatttgt tcatttaatctaggttatttaatttgttgtacattttttcatagtattatcttataatcttttaatttttgtaaagt 45 tgataatgtccccaccttacctgatcttagttatttgtgtcttctctgtattctttttgtcttcttcttctgtcttagca tatatacacctaagttgcattacaaaggagttgtcctccacacacttattctttcccaccatcagaggtttatggtcccc gcaaaagtcaccatcagttgggctcaactccaatcagtcatggtaggtcagggtccatctcattgtctccatcactcatg 50 cccacccagggtaagtctaatcatgttcaccaatcagaacctctgccacatcagctctgtgggtttcctctctatgccatc caatqatattcattaaacttcttcctgcaagtactccctctattgctccttctactcaccaagcttagtgtcagggaata tgctggtggggagtatgaatcttagcttctcactccagactcggctcccaacctgctgttgccaagtcttggggacatc tataaatgoottotaaataootgtottggootatooocagooacagattootooctagagoaggotacototgaggoato 55 tatactgagatcttaatcacagagacatttaaaacatctaggctacaaaagaattcctactatagggttcaaatgaattt ctttccgtcacttgagacagctttttagcaagtacatgtattaaagattctgatttccccttttttctcctacagtttgt ttggcctaaaggtatgacatctaatctgctgcatttacactctaagtcaaaattaccattttgttcttttaatttctatt tctaatcatacattcttgtctactcctggttcatctggagacaaagttgaacttagaagatggaggagaaattcttatct gccctctgctagttgacacttcctttccaagaatcatttgcagttgctgggctttcttgctgtgactctatgccctgttg tgttactttttcatttgtgacaaaaacagtggtaatagtttgcttcatttttattatgaagacttgaccaggataggtag 60 gaacataattactgctttttctgtgggcatcatattggtccagatcatgtttaaccagaattgaagatgtaaaatcctag aactcactaatctattttagtaggtcacaggaagcatgcaaaccataaaaaccgcaatgaaccaaaagcatctgtgttga caagaggcaagaatttctctattttctaaaggcactaactgaacaaatctattgcccattacttaggaaattgctaaggg catcgttaaagtacttcaggctgttgaaaaaccttttctgtcttcttgccccaccaccaattctctctagctatgctttc tctcacatgttcttgccatccatggagtggcagagaggttctgagtacaactctaactttcagtttcaatggcctaatccccaactctaactgctgaccttgagtgtaaaaataaacaagatcttaaacatcttagggccagcattctgggtcttcttttg 65 tratttggggagcataaactattctcatatcattggcttgcagaaaaattgagcttctcctcttccttgccccatgtcac cttgaggtgaccacagccctgccttctatgtaatcctgcttggtcaggcagcatcagggctcagtggcttgtgacata ctttccttcaagcctgctcgaagggccatactcatcattggaactgggaaccttagaaaccatgaacccagtgccaatgg gtagatacagaattctcaaactcatgaaaaaactcctttttaactctctccgtgtgcataaagaattctaagatgtact 70 acttgacggttgtgtgtgtgttatttgccacactcccccagatccactctgagtcccaggatgctgattttaggggctacatt gcctagactgtccattattccctcttcccatctggttcagtcactgggaagcactggtaggaggtcagagtgggagaagg aggttaggatactttctgcccctgctgtcctactgctttgctgaacttctagcagtggctgagccatcaacctgcagctc tcaattccagctgtctgtagcactcaagtggtattgtttattctttttgatccttctagctgttaaggaagaaaaaaataa tttttcctcaatgctcataagttcttggaatggacccctgtaacaaaagacagattaacacgagaaaagtttattaacg gcatcttcaacaaagttcagtaacattttagagatatgacaagacaaagaaaatgaactttgagcctctagggacagtga cttqtaggaaggcaaaaggaataaatggaggtaaaggctggttagtaatacttgttaatgaagattcctctggtgccatc tccaggtccacaaggatttaaatttgtcttcagtggtgaacctttgttcaccctggcagaaggtgtggagggggtgcag taattgccttcagctcaacaatccttatgcaaaagaggtacattttagggtgtcaaattctggtctcccacaaagcatag

ggatgacagaccacctcaccatccctgttgcttcttttaagcctgctcacccctccaaaaatattttcattctatactgt ctcttcaaaatctcageggagggtgecetctgttatcetgecetetgtgtcagtataagecaaaggtttgaatcetgget ctgcaactatctacctctgtgcctctccttgtttatgaaattacagggctggagacaaagatcacaatgtgaagacaaag ttggagagcggtcctaatcagccagagcaaaatttctggctcttgctcttccccatcctgggttgaatcataggaacaagg tggcaagatgccagggtcaggagattccagaagtggcagcaagctcagtgttaccaggtcagggatgacctgtcttattattgaaatctcagagatatgctccaattccggcccagagacacattgagagacaactggggaacttgctatgttcctgaac acaggacacatggttacaactgactgaaatctgggctgggtgtaggagctcacacctgtaatcccagcccttcaggaggc tgaggcaggcagattgcctgagcccaggagttcgagaccagcccgggcaacatgacaaaaccccatctctacaaaaaatagtcaggcatggtggcatgcacctgtagtctcagctacttgggaggctgagatgagaggattgcttgaggttgagactgca 10 taacacaacaacaacaacaacaacaacagcaaaaaagccaacttcttgaaatctggaaaggacacctggactgccct gagcatttgattgttgttggctctagcagtggatgcatccttcaacctctggcactctgcagggctcagactgttctgtt ctgtttgttacctgtggagtgcctgccagaccctgctctagctgctttaggtccatttaccctcatagacccccagtctt 15 gttattcatatttcatatttgggaaatggaaacttagaaacttgccaagtccacagcatgagatcctgcctccggtgtct getggattecagaaagtgecaggggecaaettagatgacaeeatgttetetgeacaatettaggaatgeteetagtetga tgtccccattgcaaaatttacattatettttaacaaaacgtetttccaaggaggggcatttaaaataactgaggttette ttgctaaggacgttcctgacacaagagataatttagcatttccttttcattaaaaagtttgaaatcctgtaatttgtgat 20 ggaatttttttttaaataagttgcttagccgggcatgatggcacacacctgtaatcctagctactcaggaggctgaggtg ggaggatggcttgaactcagaaggtggaggtagcagtgagctgagactgtgccagtgcactccggtctgggtgacagaat gaaacccaatttaaaaaaaaaaaaaagttgctatcttagaaaaagacagtagagcagtggttaccagagactggggagg aaagagaggaggtgagaatgggcagcagttgatcaacgggtacaaagttaccatgagataggagaaacaagtgctggtgc tgtagcaaaacatcacattgtgtcccataaatatatacaattattatgtgaattaaaataaaaaaattttaaagtctta 30 ccattactttctgattcataggctcaacgcacctcaaagctggaaatgccgggtctgggtacaccctggggaactgcaaa 35 qcctqcacacttgggggaaatgatcaagatgagaggcaggggtggggatggcatgtgcaccaggagatgttagagaaacc cagtccacacacccaggggctcactctgcccctctgagcacccaaggacgttaaagagctggaactgttagtctaaatat aggaccatccaagctctgaaccaaaatgtgtcccttgcctcaactcaggagatccacagaggcagaagtaaggaatttat tttctgaaagatagatttctatcagttctgggtgacatgttctgacacttgaaatgacacctaggacagcacatttcagg 40 catcttgctcattgttcactgtagtagaagctacatgctagccagttgtaaaaatgaaattaagtaatgtgtgcacagca tttaacatagcatctgagcttcaggagcactcaattaatgaccacagttgtgattctttaggcagatgcattttttcca actttgatcagaggtcttatttagcttctccagatttcaagaatctggctcagtgatatgaaatacaagacttgtgaaaa 50 gaggtggaactcaaatgacatgataataatacagggcatttctctgtgtccagatgctgtcctaagtccttactccattga tcttcacagcaactcagcatagttaatattttatgcataaagaaatcggcacttgaaggagtaattggccccagattaca 55 ctgcctataaggattcaaatccaggtttgtttggctccaaaaactggctcctaattttcagaaggagaagcgacccaggg caatgoccaattttgcttcttaggcaatggaggaatccacaatcggaaggagttttcagcagtgcccatttggggtggg ttgaatttgaggtccctgcatgatacccactttgctcacttcagtgcctaaaactgagtatggttcatagtaggtgttca ataagtgttgatgcagtgaatacatgcatggggagatatgcatcaggcaatgggaaattcaactctaaggcttaggggaa agctggagcttgaagacagagctttagaaaacagtagcatagaagggagtaggaaccatgagtttagacaatacaattca 60 ggaagaactttgtagcaaggataaagaggcaaaaaattaaagaggtgagagctaagtgtggtgcctggggaatcttaagg tgtgggcacgggggggggagatgccagcaaagaacatgaataaaaagcggtagcacagcccctcccatctggaagccaaaaa gaattgtaaatggaggaagttagcagaaggatcaaatacttgaagagggtggaattggaataaaaccagggcatttgaaa aattgggttgtcactgcaatcttaacaagagaagttttggcaggatgatggaggcagaaagctgagagaaatcatcagtta gaacgtttttgacttcagagaacagaaaatgcagttcataatggctttaaaacaggggcttgtttttctcccagcaattt gagaggccaaggcgggtgcatcaggaggtcaagagaccgagaccatcctggccaacatggtgaatccccatctctactaa aaatacaaaaattagcggggcatggtggtgcacgcctatagtcccatctactcaggaggctgaggcaggagaatcacttg 70 tgtggtgccagactatttggaagatcatggattgcggtgtttgtgtgttgtgtgtcatcattttgttctttgtttacagaa 75 cagagaaagtggattgaacaaggacgcatttccccagtacatccacaacatgctgtccacatctcgttctcggtttatca gaaataccaacgagagcggtgaagaagtcaccaccttttttgattatgattacggtgctccctgtcataaatttgacgtg aagcaaattggggcccaactcctgcctccgctctactcgctggtgttcatcttttggttttgtggcaacatgctggtcgt ttottattactotoccattgtgggctcactotgctgcaaatgagtgggtctttgggaatgcaatgtgcaaattattcaca

tggaataatttccacacaataatgaggaacattttggggctggtcctgccgctgctcatcatggtcatctgctactcggg aatcctgaaaaccctgcttcggtgtcgaaacgagaagaagaggcatagggcagtgagagtcatcttcaccatcatgattg tttactitctcttctggactccctataacattgtcattctcctgaacacettccaggaattcttcggcctgagtaactgt gaaagcaccagtcaactggaccaagccacgcaggtgacagagactcttgggatgactcactgctgcatcaatcccatcat ctatgccttcgttggggagaagttcagaaggtatctctcggtgttcttccgaaagcacatcaccaagcgcttctgcaaac aatglocagtittctacagggagacagtggatggatgacttcaacaaacacgccttccactggggagcaggaagtctcg gctggtttataaaacgaggagcagtttgattgttgtttataaagggagataacaatctgtatataacaacaaacttcaag ggttlgttgaacaatagaaacctgtaaagcaggtgcccaggaacclcagggctgtgtgtactaatacagactatgtcacc caatgcatatccaacatgtgctcagggaataatccagaaaaactgtgggtagagactttgactctccagaaagctcatct cagetectgaaaaatgeeteattaeettgtgetaateetettttetagtetteataatttetteaeteaatetetgatt ctgtcaatgtcttgaaatcaagggccagctggaggtgaagaagagaatgtgacaggcacagatgaatgggggtgagggat agtggggtcagggctgagaggaggaggggggagacatgagctggagcctggacaaagacaaaggtgagcaaagggc tcacgoattcagocaggagatgatactggtcottagccocatctgccacgtgtatttaaccttgaagggttcaccaggtc agggagagtttgggaactgcaataacctgggagttttggtggagtccgatgattctcttttgcataagtgcatgacatat ttttgctttattacagtttatctatggcacccatgcaccttacatttgaaatctatgaaatatcatgctccattgttcag atgcttcttaggccacatccccctgtctaaaaattcagaaaatttttgtttataaaagatgcattatctatgatatgcta atatatgtatatgcaatatatataggctcttgcttgatctctccaggaggtagtgattatgagaagggggtggagaatga tgagtteetteaceaggagcaaaggaegggategtgtggaaceactgcagaactattteeggaateaactaagtggaga gageeaggaaggetgeateagaaceagtaaagettettgtetggatetgagetggtttttgttttgtettgtettgeettgetttteeet geettgeeatececeteactetetetttteeceacageettttteacatagetettggetgtaggattgceceacteca 20 aaaaccagtgtgtgtggaggtccaggagtgagaccaggaaagaatgtgaaagtgactacacaaggactcctcgatggtcgtg gaaaaggaaagtcaattggcagagcccctgaagccagtcttcaggacaaagaaggagcctagagacagaaatgacagatc aaggctgagaggagagagactccagctgggttggaaaacagtattttccaaactaccttccagttcctcatttttgaata 25 Caggcatagagttcagactttttttaaatagtaaaaataaaattaaagctgaaactgcaacttgtaaatgtggtaaaga gttagtttgagttactatcatgtcaaacgtgaaaatgctgtattagtcacagagataattctagctttgagcttaagaat gtgggcacattagcctatgtgcatgcagcatctaagtaatgatgtegtttgaatcacagtatacgctccatcgctgtcat ctcagctggatctccattctctcaggcttgctgccaaaagccttttgtgttttgttttgtatcattatgaagtcatgcgt 30 ttaatcacattcgagtgtttcagtgcttcgcagatgtccttgatgctcatattgttccctattttgccagtgggaactcc taaatcaaattggcttctaatcaaagcttttaaaccctattggtaaagaatggaaggtggagaagctccctgaagtaagc acactgggcttctagaaccaggcaacttgggaactagactcccaagctggactatggctctactttcaggccacatggct 35 ttgataaaagatttaaaaacaactggctgtttttttacactgtggtgtggaagattgtgtgttgtgttcacaacttttcact tetteceetgtgtgattacacacacetgeeettgtggtgtgtacttgeagtgegeeetacaggeeacacacacecatgeee tccaccactggctctgctgctggaatgtgagcagaagtgacatctgcctcatccaagcagagcctctttgctcagccacag gaaggcccattccagatcacaccgtcagcccgtgcgccctggtgaatgagaagacacagggagctgcagccacatataa 40 aagcatcccggagggtctacctatgccagactgggttggaaacagaaagacagatgttaatgccagtgtcctttacacct ccaagtccagggccagctgtggagtgggaggggtagagaggtcctgtgcacagtcacagtgcgctgtgcagagcaggaa cagaggcatctgtgaaaagtgctgagaggcctggaggacagagtgactaatgcaatgacagtcttgcatcataggaataac tggcatgaatccaggaggcggagcttgcagtgagccgagatcgggccactgcactccagcctgggcaacagagccagact ccateteaaaaaaaaaaaaaatgeeageeatetetetetetaaagtggaateeteaagtetegtttattetggggaeat ttgagtaggctgttcgagttaagcaggtggaagttgatgatccctcatcatcattctgagggatgagtgtctgaagactt tttggtaaggaagggtcttggcatagcccaccccatgccactcccttgatctgtgatatccccagcagctggggaggtt 50 ctcattatgaaaacttccctgacaaattgaaaaggcttcaggtgagattagcccacaggaaaaaccaccaagggccaccc attggttecaggcatgggaggaatgaggetggaaatttetteagacattgccactteggcactetgtgtgtgtgtgtg tgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtaaacagagtcctgtaatgcaaggtccggccttggcagccccag cctggagccacagtgagatgtgaggttatgctgggaaaaacctctccccagcacctgaaaggctctgcagg cccagcagctcagcaagcaagggtaagggcatggactaacatcttatttcatactatccttataacacatcctaatgta at cage teaca at at gaa at tatte at the telegraph categories the attention and the constraint of thegtccctgcctagaggaggggtgcattctgtccctatgtccctcctgctccatcctccacagcacgtgcctagtggtct accttgtggggaattcttgtacctccctcttctaggcatggactagcattgagaagtgggagaggagtgttaggaaaag ggcaaatatagacataccttgtcttattgtgctttacagatattgtttttgttgttgttgttgttgtttacaaattgaag 60 gtttgtggcaaccctgcctcgagcaagtctattggtgctgtttttccaacagcatgtgcttgttttacatctctgtgtca cattltggtaattctcccaatatttcaaactttgtcattatttctatatctgttatggtaatctgtgatcagtgatcttt 65 aattatatatatatatatttttttttttttttttgaggcagagtcgcactctgattgcccaggctggagtgcaatgatgtg atttcagctcactgcaacctctgcctccccaggctcaggtgattctcccacttcagcctcccaagctgggactacaggtg tgcaccatcacacccggctaatttttttttttttttagtatttttaggagagacagggttttgccatgttgcccaggctggcctta aactcctagactcaaaccatccacctgcctcagcttcccaaagggctgggattacaggcatgagccactgtgcccagccc aagacacaataatattgaaattaagccaattaataaccctacaatggcctctaagtgttcaagtgaagggaaaagtccca 70 cgtctctcactttaaatcaaaatctagaaatgattaagcttagtaaggaggacatattgaaagtcaaggccaaaagctca cctctgcaccagttagccaaattgcgacttcacaggaaaagttcttgaaggatatttaagctctactccagggaacatgc aaatgaagagaaaacaaagcagccatattgctaatatggagaaagtttgagtggtctggagaaaagatccaaccagccac aacatttccttaagtcaaagcctaatccagagcaagactctaactctcttcaatgctatgaaggcggagagaggtgagga agctgcagaagaaaagtttgaagctagcggaggttggtttgtgaggtttaatgaaagacaacatctccataacataaaaa 75 tgcaagatgaagcagcaagtgcaaagggagaagctgtggcaagttatccagaaaatctagataattgatgaaagt gtctacacgaaacaacagattttcagtgtagacaaaacagtcttatgttggaagaagatgccatccaggactttcacagctagagaggagagatgtcaaggcaagctgccacaggacagctgactctctttttagaggtgaatgcagctgatga ctttaagttgaagtaaatgttcatttactattttgtaaatcctggtgtcattaagaattatgcgaaatctactctatctg tgctccataaatggaacaataaagcctggatgacaacaacatctgtttacagcatggtttactgaatatttcaagcccactattgagaacaatattgctcagaaaaaaagattcctttcaaaatattactgctcgcaccatgtcgatcaagagctgtgttgg agatgtacgagaatattcatgttgtttcatccctgctaacacaaacatccattctgcagtccatggaccaagactttca

atagctaccattgatagtgattccattgatggatctgagcaaagcaaattgaaaagcttctggaaagtagtcattattct agatgccattaggaacatttgtaattcatgggaggaggtcaaaataccaacattaacaggagtgtgaaagacattgattc caacccccatagatgactttcaggggttcacgtcttcagtggaggaagttgctgtagatgtggtggaaacagcaagagaa ctagaactagaagtggagcctgaagttgtgactgaattgccgcactctcatgatcaaacttgaacagatgaagagttgct tettacatatgageagtgaaagtggtetettgagatggaateteeteetggtgaagatgetgtgaacaeggttaaaatga caacaatcgatttagaatattacataaatttagttaataaagcagtggcagggtttgagaggattgactccaattttgaa agaagtgggtaaaatgctatcaaatagcatcacatggtatggagaaatcttttgtgaagggaagagtcgaccaaggtggc aaattgcattgtcatcttattttaagaaattgccacagccaccccagctttagcaaccaccacctgatcagtaagcag ccatcaacatcaaaacaagaccgccatcctcttcagcaaaaacactatgacttgctgaaggctcagatgatggttagcat ttttagcaatacaatatttttaattaaggtatgcacattggtttttctgacataatactattgcatacttaatagactac agtataggataaacacaacttttatatgcactgggaaaccaaaaaggttatttttgagatatttgctttactgtggtggt ctgaagetgaactcacaateteaccaaggtgtgeetgaacetetttagetaactggeeactgecacagteeactetgtgt tggtcaagatgccccagagtggcaggcacactgtgtgtggtcacatccaagggcctagatatggtgggggctccaaatggat ctagatatgtgagatctctctttgatttgatttccaacccaccattttctgggtgctgggctcatctcacccagaaa gtaggacccaatgtgacagttcctgcccagttccctcctgtggtagccacttgacccaggggcactcttgatccttgacag 20 agaggtgtctgagcccaggtgtcagtggttttctttggaactgtgagtgcataacacttctttgccttcagccttaggcc atagttgctagttctgggacaaccagaaaagccctacataatctcgtgttatgtgcagagctgagtatagagctccaggt atgatctgactcacttaagatcacagtgagtctattgtattgttgaactgttagcttagacatctgttactgtacctaca tggcactagcctcacgcctagacaccgatctgaaagaaatcccctaaatgcatagagaagacttctcagctgagctaagg ggctcccaccaggtttgagcctatctaatgaatccatgaggtagacagcctgcacatgtccacttggtttgatgaattgc 25 acaaatccctatgggggatgtggttcatgggctgggaagtgggttaccctgggaaaggtctacaggacagaggcagggat ggagacaacagcatggtgagttcccaacccaccacgatgataggtgtctgaggcagaaggtaaagaggctgtcacctgg tgggtgtcataagactcaagtgtcattgttgaggcacatgggtaacaaagcgtggcactggatggggtagattcttcct atttctgtgaggatcagggggactccctggctctcctgctaaaggtggctctagggacaggaagagtgtacttcttgaca gggatgtcagagcactgatggtgacaatcagtgtgacactgctcacatgactgaacaaccgagaagagcccgactgtcta 30 ccagacaggaaagaggacagtatctttaatccatttatagaagttaaagacaggcttatttaatctctatgaagacagag tggcccttacctctgggtggagcaaaaggcaccttctgaagtgatagggatgttccttatcatcttgatccggagtggta gttacatgcatgtatgcatatcaaaactcaccaagctgtaccactaagtgtgttcttcctcaataaaaataataaagaac gcctacagaatggtatatgcatgagaacaattaatcgaaaagtgcatgggaaaagtcaggattgaaacatcatgttttaa aagacattgttttgatactgtgagaatgtacctaagtttttccttttttctgtttttcccaattttatacaatgagcatg 35 tgttggttttataattagacattttgtttgtttgtttggtttggttttgagacacagcttgctgtcacccaggttggagtgcaa tggcccaatcttggttcactgcaacctccatctcctgggttcaagagattctccccacttcagcctcctgagtagctggga ctataggggcgcaccaccaccacctccagctaattttgtgtatttttagtagagatggggtttcaccatgctggccaggttgg tetcaaactectgacetcaagttatccactegeettggetteccaaagtgetgggattataggeatgagecacegeactt 40 ggcctagacatttgtttttaaaaataaaagattcatttgctctttttacagcccgtctcactgttgactgatattgacca ggagtcaactcaggccccagggattttcacaacagctgctgtatggcagggtttctgctcactgtgctcatgtagttggc ccttgcacccaaagtgaataattaacattctccccatcctgttgacgatgctctgaaaatatggtccagaaatggtgtga qcaaggagacagcaaagcaatgcttggaacataggtgcagtgactagacatggggcagctgtttaaagacaaaaaggccc 45 caaaaaggagggatggcacgaaacaccctccaatatgggcatggagtctagagtgacaaagtgatcaaaagttcatttcc cagacaccaagcaactaagtcacagcatgataagctgctagcttgttgtcattattgtatccagaacaacatttcattta aatgctgaagaatttcccatgggtccccactttcttgtgaatccttgggctgaacccccctgtcctgagtggttactaga 50 ccaggtctagcacgtcatttaacagatgaggaaatggaagcttgggcagtggaagtatcttgccgaggtcacacagcaag tcagcagcacagcgtgtgtgactccgagcctgctccgctagcccacattgccctctgggggtgagtatgtcttcacatcc tccaataccctaatgacagacaaacagaacatggcaaagcctcagctctgcatggtgaaagtaagaaccagcaattgcca aggcacagagcttcaataatttggtcagagccaagtagcagtaatgaagctggaggttaaacccagcagcatgactgcag ttcttaatcaatgccttttgaattgcacatatgggatgaactagaacattttctcgatgattcgctgtccttgttatgat 60 tatgttactgagctctgttgtagcacagacatatgtccctatatggggcggggttgggggtgtcttgatcgctgggctat ttetatactgttetggetttteccaageagteatttetttetattetcaageaecageaattagetttacetttteage ttctagtttgctgaaactaatctgctatagacagagactccggtgaaccaattttattaggatttgatcaaataaactct ctctgacaaaggactgctgaaagagtaactaagagtttgatgtttactgagtgcatagtatgttgctagatgctggccgtg gatgcctcatagaatcctcccaacaactcatgaaatgactactgtcattcagcccaatacccagacgagaaagctgaggg 65 taagacaggtttcaagcttggcagtctgactacagaggccactggcttagcccctgggttagtctgcctctgtaggattg ggggcacgtaattttgctgttttggggtctcatttgccttcttagagatcacaagccaaagctttttattctagagccaag gtcacggaagcccagagggcatcttgtggctcgggagtagctctctgctgtcttctcagctctgctgacaatacttgaga ttttcagatgtcaccaaccaccaagagagcttgatatgactgtatatagtatagtcataaagaacctgaacttgaccata 70 gcatagtgtgagtcctcataaatgcttactggtttgaagggcaacaaaatagtgaacagagtgaaaatccccactaagat cctgggtccagaaaaagatgggaaacctgtttagctcacccgtgagcccatagttaaaactctttagacaacaggttttt tccgtttacagagaacaataatattgggtggtgagcatctgtgtgggggttggggtggggataggggatacgggggagagtg gagaaaaagggggcacagggttaatgtgaagtccaggatccccctctacatttaaagttggtttaagttggctttaatta atagcaactettaagataateagaattttettaaeettttageettactgttgaaaageeetgtgatettgtacaaatea tttgettettggatagtaatttettttaetaaaatgtgggettttgaetagatgaatgtaaatgttettetagetetgat atoctttattctttatattttctaacagattctgtgtagtgggatgagcagagaacaaaaacaaaataatccagtgagaa aagcccgtaaataaactttcagaccagagatctattctctagcttattttaagctcaacttaaaaggaagaactgttctc tgattcttttcgccttcaatacacttaatgatttaactccaccctccttcaaaagaaacagcatttcctacttttatact gtctatatgattgatttgcacagctcatctggccagaagagctgagacatccgttcccctacaagaaactctccccggta agtaacctctcagctgcttggcctgttagttagcttctgagatgagtaaaagactttacaggaaacccatagaagacatt

aacaatccttacctctcaaaagaaagatttgcagagagatgagtcttagctgaaatcttgaaatcttatcttctgctaag gagaactaaaccctctccagtgagatgccttctgaatatgtgcccacaagaagttgtgtctaagtctggttctctttttt ctttttcctccagacaagagggaagcctaaaaatggtcaaaattaatattaaattacaaacgccaaataaaattttcctc taatatatcagtttcatggcacagttagtatataattctttatggttcaaaattaaaaatgagcttttctaggggcttct acttaaatagactaggcaagacagctggttataagactaaactacccagaatgcatgacattcatctgtggtggcagacg aaacatttttttattattattatttcttgggtatgtatgacaactcttaattgtggcaactcaaactacaaacacaaacttc acagaaaatgtgaggattttacaattggctgttgtcatctatgaccttccctgggacttgggcacccggccatttcactc tagttaagagtgcaggcttcccgcattcaaaatcggttgcttactagctgtggctttgagcaagttactcaccctctc tgggtatgatgcttagaacagtgattggcatccagtatgtgccctcgaggcctcttaattattactggcttgctcatagt gcatgttctttgtgggctaactctagcgtcaataaaaatgttaagactgagttgcagctgggcatggtggctcatgcctg taatcccagcattctaggaggctgaggcaggaggatcgcttgagcccaggagttcgagaccagcctgggcaacatagtgt gatcttgtatctataaaaataaacaaaattagcttggtgtggtggcgcctgtagtccccagccacttggaggggtgaggt 15 gagaggattgcttgagcccgggatgatccaggctgcagtgagccatgatcgtgccactgcactccagcctgggcgacaga 20 aaagagagttaattcaatgtagacatctatgtaggcaattaaaaacctattgatgtataaaacagtttgcattcatggag gtcaagtccaatctatgacatcaattattatacatcggagccctgccaaaaaatcaatgtgaagcaaatcgcagcccgcc tectgectecgetetacteactggtgttcatetttggttttgtgggcaacatgetggtcatecteatectgataaactge aaaaggctgaagagcatgactgacatctacctgctcaacctggccatctctgacctgtttttccttcttactgtcccctt 25 ctgggctcactatgctgccgcccagtgggactttggaaatacaatgtgtcaactcttgacagggctctattttataggct tcttctctggaatcttcttcatcatcctcctgacaatcgataggtacctggctgtcgtccatgctgtgtttgctttaaaa gccaggacggtcacctttggggtggtgacaagtgtgatcacttgggtggtggtgtgttttgcgtctctcccaggaatcat ctttaccagateteaaaaagaaggtetteattacaeetgeageteteattteeatacagteagtateaattetggaaga atttccagacattaaagatagtcatcttggggctggtcctgccgctgcttgtcatggtcatctgctactcgggaatccta 30 $a aaact \verb|ctgcttcggtgtcgaaatgagaagaagaggcacagggctgtgaggcttatcttcaccatcatgattgtttattt|$ tetettetgggeteetacaacattgteetteteetgaacaeetteeaggaattetttggeetgaataattgeagtaget $\verb|ctaacaggttggaccaagctatgcaggtgacagagactcttgggatgacgcactgctgcatcaaccccatcatctatgcc| \\$ tttgtcggggagaagttcagaaactacctcttagtcttctacaaaagcacattgccaaacgcttctgcaaatgctgttc tattttccagcaagaggctcccgagcgagcaagctcagtttacacccgatccactggggagcaggaaatatctgtgggct tgtgacacggactcaagtgggctggtgacccagtcagagttgtgcacatggcttagttttcatacacagcctgggctggg ttaaagtagattagatcttttaagcccatcaattatagaaagccaaatcaaaatatgttgatgaaaaatagcaacctttt cctcagagaattgctgattcttgagtttagtgatctgaacagaaataccaaaattatttcagaaatgtacaactttttac ctagtacaaggcaacatataggttgtaaatgtgtttaaaacaggtctttgtcttgctatggggagaaaagacatgaatat gattagtaaagaaatgacacttttcatgtgtgatttcccctccaaggtatggttaataagtttcactgacttagaaccag gcgagagacttgtggcctgggagagctggggaagcttcttaaatgagaaggaatttgagttggatcatctattgctggca aagacagaagcetcactgcaagcactgcatgggcaagcttggctgtagaaggagacagagctggttgggaagacatgggg aggaaggacaaggctagatcatgaagaaccttgacggcattgctccgtctaagtcatgagctgagcagggagatcctggt cctcaggtcaggttgaggatggcctctgctaagctcaaggcgtgaggatgggaaggaggtattcgtaaggatggga aggagggaggtattcgtgcagcatatgaggatgcagcagcagcagaactggggtggatttggtttggaagtgagggtcag agaggagtcagagagaatccctagtcttcaagcagattggagaaacccttgaaaaagcatcaagcacagaaggaggagga ggaggtttaggtcaagaagaagatggattggtgtaaaaggatgggtctggtttgcagagcttgaacacagtctcacccag ggaggagactagatttatgaatacacgaggtatgaggtctaggaacatacttcagctcacacatgagatctaggtgagga ttgattacctagtagtcatttcatgggttgttgggaggattctatgaggcaaccacaggcagcatttagcacatactaca cattcaataagcatcaaactcttagttactcattcagggatagcactgagcaaagcattgagcaaaggggtcccatagag gtgagggaagcctgaaaaactaagatgctgcctgcccagtgcacacaagtgtaggtatcattttctgcatttaaccgtca ataggcaaaggggggaagggacatattcatttggaaataagctgccttgagccttaaaacccacaaaagtacaatttacc agcctccgtatttcagactgaatgggggggggggggcgccttaggtacttattccagatgccttctccagacaaaccag aagcaacagaaaaaatcgtctctcccttccctttgaaatgaatataccccttagtgtttgggtatattcatttcaaaggga gagagagagtttttttctgttctttctcatatgattgtgcacatacttgagactgttttgaatttgggggatggctaaa accatcatagtacaggtaaggtgagggaatagtagtggtgagaactactcaggggaatgtacagaataataagag gtgctactgactttctcagcctctgaatatgaacggtgagcattgtggctgtcagcaggaagcaacgaagggaaatgtct 60 ttecttttgctcttaagttgtggagagtgcaacagtagcataggaccctaccctctgggccaagtcaaagacattctgac 65 ttttcttttaaataatttttaaaattgacccttttcctgagacaaattgccagaatagtttgtatttagagatggtacct ctaagagtaaggttgctggttgctgagcaattgacttgaaaacttttaaaattcaaattttaattccactactcaaaaga cctccccaaaacttggctctaattgcagtcatgacaatcatgtacatttggatttatgtgcacgagtctcttaccctgag 70 agaggacaggtgctacaggtggaggggacccgtctgggtcacgttcacattttgaacatgctggttttcagtcactgcac actcatctcccagcgcaggtcatgggcagcagatgcaaaagctgcccgtggtcctatttggaggtgcatgaaatgagcag aagacagaatagcttgatctgactagaagggcagcttgtccctaccaagacttgaaggattgcctttcatctgttagggt 75 ttgctcgtttttccttttccatcttattaaatgtcttccaatgttagcacgaagaaaagctatttgcagtgttgccagcc tttccagagcccgtccccattacctccccaggcccatgcctttactccttggagtttcaactcacgaccttcaggatctg actttattcaccaactctggggtgaacgtaccttctgtctccacccagaggtctctatcaaagaggagattgcatgccat ggataaagtcaaagtagaggtgactgtccttaggaagagtaatgtgaaaattcataaactgggattccgtttacattttg tactccaggggttcttagtttaaatcgctctgaataaattaagatgcaatggcatttcaactgttatgattaaatttaca aatcatttattttctatcacggggagagatagagctccaaatgcaaatgcactactgctcaagtgttaacacttataatgaa aacataagaattaccaccaactaccctgggggctagaagcagaaatgtgaaccagaaaacaaatcatgaactttcctttt
ttttttgagatggagtctcgctctgttgcccaggctggagtgcaatggtgcgatctcggctcactgcaaccactgcctc

ccgggttcaagcaattctcctgcctcagcctcctgagtagctgggactacaggcatgcaccaccacgcctgggtaatttt ttgtatttttagtagagacagggtttcaccgtattagccaggatgctctcgatctcctgacctcgtgatctgcccgcctc ggcctcccaccgaagtgctgggattacaggcatgagccactgtgcccggccaacaaatcatgaactttctaactgcagtt ccttgtagcttgttaacacatccacttacttattgtcagagtacgtggagattttccacaaccctcgggggataaggctga acagaagaggcaaaaacgtgaaaacatttcgatagctcctatactttgaaataaaattcactgtaaaagttgcttgtatt ctgacttctattttgcctccttattgttactacgtggtttgataatccgttttgtgtcattgtgattctgtcatgttttgg
ggacttatttttgcttctctgggtggtcactagttttttaaagcattcatggaagagtgtgaatcttttacaagctagg
aagccatggcaagccttgggtcatactgccccgcgaggccacattggcaaaccagcaagggtgttcaacttccagactt
ggccatggagaagacatacgaggaggcttttcacattcagctctttaatgtttgtctctgccggcaccatcccagttgtg 10 aataagaggtatttccacagggtctcagggtaggtagtgcacagctcacattcatcatttctgaaaaccgaggaggagtct ccattcggggtacaggttgatgcctgtcgtggaatgaaggttccaacacccagaccaatctctgcagtgtgctgctctca tgagcttgcaacaagatcagaaaatgttttgtgactaagcatttttcatattgcataaaatgcttcaagctcctcccttg 15 tttctctctataatcctgtatatctgatgattgtgggtaccaagtgtttgaaataatcaaatgtgatttgatgttggtaa tagttacatatgtatacatgtgccatgctggtgcactgcaccactaactcgtcatctagcattaggtatatctcccat gctatccctccccctccccccaccaccacagtccccaaagtgtgatattccccttcctatgtccatgtgatctcatt gttcaattcccacctatgagtgagaatatgcggtgtttggtttttgttcttgcgatagtttactgagaatgatggtttc 20 Caatttcatccatgtccctacaaaggacatgaacatagcaaagacttggaaccaaaccaaatgtccaacaatgatagact ggattaagaaaatgtggcacatatacaccatggtaaatttctttatcattcgcactctcctttctctattattgttattg taactgaaccgcagattagtcactcattgcttgcagaatccaattaacaagagcgaggtcagatataaagaaaatgattt attocaaacctccttcagggaagaggtgcagcctcctgcctctaaatgcactgcttcgccaggcgtggtggctcacacct gtaatcccagcactttgggagaccgaggagggcagatcacttaaggtcaggagttcaagaccggcctggccaatatagtg 25 aaacccctgcctctactaaaaatacaaaaaattagccagacgtggtggcgggtgcttgtaatcccagctactcgggaggc tgaggcaggagaatcgcttgaacctggggaggtggaagttgcagtgaactgacatctagccactgcactccagcctgggtg cagaaagcaggcactitgaaaaaggcaggggaggaagtgagcaaggggagggcatgggtctgcacactggcatggtgcctgatct atccaggcagttgaattggcactttcataggcagaaataagttgaaaaagtggcctaaaactctctaggtgggagtggat 30 agtgggcatgccttcaacctgcctttctggagggtgagttccatggcaaccccctgaagggtgagagttccatggagatcatgctttggtctgtaaatcagctgttaactctctagaaagttctgtcttggagcatatagttagatgaacttgccctgta aagaatgtctggtgaaggggaagtaaaaggtgagattttgcatttctaaagggctaagtagaacgtggggtacaagaggaa aggagaaaagagaaaataattttaaaaaataattgtaacttattcccttttacttagaaaaaagggaatactcagttacat tätcacctcgtttacatcaaaccctcttatggaatcctatggtttgaaaacaaaaaggttgttgaggaccagtgagccca 35 acccctttgctttataaatgaagagcattgcctgccctaagccccagagactctgatgtcgtgggtctggagtgggctcc acceptive translating against get get control of the control of th 40 gagcaagactttgcctggcctggggtggcatgtgcaccaggaagagtetcaactttcataacagaacattccccaagctg gttttttttaaagcatgtgaatctagacttcattggcaataccaaagatctgtatttgaggctccaagtatttcactttca tttttggttttgggttalgttttcacccttcctttccaagtgaaaagtaaacagaagtgggatgtclggcgcccatgctg tagattttgcttatgtggctaaaggattcttctccccccatttccttatcctgcagtgagccatccttcttaactcttt 45 ccatgaaagcattattcctgaagaactgggaactcatgccagccctgatcaggcaatgataattctgcagagaattagaa tttactgaagagcagatatctgataacttaatctttttggttttgagtcaagacaattcctcttttgaaactgcatacc gctgaalataalaaatgtaaltaagattaaaaataagaaactaatgggagaatttcaatattgtctctgttcactttaa aatteetetaettaggtitaetgeeattaeeaaagaetatteaaaaateettttaggagaateetaatggttteetgae 50 agggacttgaaagtcagactgactcgagttccagccttggggctgtgggagcttgggcaagtgacttaacgtctctggct agcctgtaaaattgagctgcagacatagataagcaagctggaagcttgcacgggtgaatgccggcagctgtgccaatagg 55 60 tgtattaccccatacaaatgatgctgcttcattactaatagcaacctgacagggttgtgttggggtataaattatctaga ccagggagatccaatataattttttgtaatgacgggaatgctttgtatctgcatccaaaatggtagccaccaggcc agggtgaaatgtggccagtgtgactgaggaactgaatgttttccatgatttaatttaaatgtggccaatggctactgtag gagacagtgtgagtctggcatattataaataataatattaatattaatttgaactttggcatcagtgtttcctagatttg aattactatgcaagttgcttactgtttccaagcctcagctttctaatctgtaattggggctaataatagtatctgcctta 65 caggtttgttcagaggataaatgagaaattgcatgttgagggcttaacacagtgcctggcacataaaagctctggtaaca gttagccactttaataatttgctaataatggctatttcttcttcagattaggatgtgctcccccaaacagtgcacttaga catagogggcaatccagotcactototgcagtgagagagaagcactggccgaccagagtcagccaggggctcatgggtat gaaatcaacagcatgattttgtaagtaatggatggaaagggcctcacaactttatggcactgtgttcaattttgcttggtc ttctgtagctccttttgaaagccttttagggtggattaacctgctaccaataattctggtcagatgtagactccatagct 70 caaagcaaactgagagagtgagggcagcaggccaattccccacccettccttctggactctgacagaagcttacactcaa ggaagagcaagtaggaattaacgtgttaagagctaggtaagcaaaacccaatgagaagttctggcaaagccccatgggca ggggtggettäggcacaggaaacaagtaggattteataccacgcgeetcagtetactteeggggeeetcateetcagetg tgcctatgcaaaggagagcaaccaataaaccccaccgccactctcctactgtggaggccagggatggccaggggtaagag agggatgggaagtgtttcctccagccgtcctctgagaaggagaggaaactgggcagagcttctgtcctcctccagcaga 75 aacagaaacaaaagaaacccctaagggggttcttacttcccctctagttcagttgtgcactaaccatctgcagctcaaca ttcagcattcattcattgattcagcaaacattgaaggagggccagctatgtgccagatgccaactcatgccatgaaagag

gaatccatgttgaacatgcctggcccccagatagtcttttcctattggcacagctgccggcattcactcttgcaagcttccagattgcttatctatgtctgcagcccaattttacaggttgctcttttgctagaaaagaaatgatttgggggctgcttttc attaaaaggaaaaccttaccaaggttaaaaagaaaaaaatttcttttaatgcctatgttactgtgaacagtgtcgggat aaggetetgagageeagatgaggatgagttateeaateeaaggatgggggtetggaggaaaaaateetagagageattge tgcagttgaataaggattagttagaagctactgagtggagcataggagtaggaactcttatgcaaatgtgcagaggtgaa ğłgtggggtgtgtgtgtgtctgcgtgcatgcattccttctgcaggagatcaggagcagtgggcagtatggagtgacaag aagattgggaggtactccttctagccctcccctctgctctgccctccactggagcagaagcaaagcatatggtgaagggg 10 aacaaggagtetecccagcacagtacccgagtgcattagctatttatcactccacagtecccattcacgtgttaattcag catttattgaatgcttactgtttgcaatgtctatgtcaagctgtcaagtgtagtttttattctacaggccacaggcaccc cctaactgtqttaaacaagatggtagtattgagacaggaataataagggtggtcacaggagaatggaagattccaggcag cagtttgactagtaaaaaaggaaactgttgaaatagctgcataatccaggggtcaataagaacctgagaaccagggtgtg agccaaggctggttaaaagcaactggatccaatatggtgctgagtttctcctaggttttgcctggaacctcattatatgc tcaataacataccaaatcacaccaccagggccattccatttcctggaacactcatgtttggtgtaaaaatgggtggc accacagetetgagaaatetttacettttcaggaaaettcatgaatattecateetttggttaaagaaaeccataatgt tattatttatttatttattttttagatggagtetggetetgteacecaggetggagtgeagtggegeagteteageteac tgcaagctctgcctccagggttcaggccattctcctgcctcagcctcctgagcagcagggactacaggcgcccaccaaa 20 cgcctagctaattttttgtattttcagtagagatggggtttcaccatattttattttattttgagacagggtctcactt tgttggctcgctgcaacctctgcctcccaggctcaagcaatcctccaacctcagcccccaagtagctgggaggacagac aactcctggactcaggtgatcagcctgcctccaccttccaaagtgctaggattacaggaatgagccaccccacccgacca cactcccatttcttgagtgtgtgcattttgctctgcaataaatctctctactttcactttctctgactcgtccttgaat 25 teettettgtgacagegteaacageetggacaccaggtgcagteaacgtetcaccagtgtttagggaceteccetaatee actggtatcagcatgatcagacttgctttttcagaaaaagccttctgtccatagaccaaagggaagtgactcagagaagg ggcaggaggaatcacaagctccctgcctgaccaggcctggactatggcagagacagtgagatggtgagaaagcaagggta gacagccagccaaatccagaatatagaaagttctacaggaaaaggtggggccaaggtgggacagggggaaaggaattgtt gcacattaacagtgcaatgcagagcactggtcttgtttatgtccaggttagaacaaaccaatgagaaagcacatctttga gacaactggagaaatttgaacactgactagatataatattatgttaattatgctttaatttggggtacaataatgctttt gtagctatttctaaagagtccttatctcttaaggatacactctaaaatactagtggattaagttatatgatgtttagact ctttttaaaataatccagtggggtgagaggcagagggaagggagaggagcatagaggaaacagtgttggccatatgtttgtaattgttaaaactgagtgatgggaatatggagatttaacatattaatactatttctgcccatgtaatattgaatatt 35 acccaagatgagtcaatcggatcctagcttccagaaatcgtgagcatgatgcagccctacagacgcagtgccctggaaag gagacccatgaccatccaaggaagatgtcccatcacagaactgccctgggtcatgtgttttccaagtccacatgtccggt agttccttctttcctatgaccaatgccaccagtcttccagcactgtcctttattgctaggcaaacctgagccatcctctt cttcttgcaacttgtgcctgaagtaacatggacacaaagtccccacttttcccaccattctcagaatgaagtagttctccc 40 tccacactttaggtgctagaggcaagtggattgcttgagctcaagagttcaagaccagcctgagcaacatggcaaaaccc cgtctctacaaaaaatacaaaaattaactgggggtggtggtgtgcacctgcagtcccagctactcaggaggcagagaagg aggatttcttgagccctgaaggtggttgtgttacgtgcattcatgttaagagaccaccaaacaggctttgtgtgagcaat täägetttttääteatgtgggtgeaggeagaetgagtetgaaaaaaggeteageaaagggagatagggatggggeggttt tataggatttgtgtaggtagtggaaaattacagttaaagggggttgtcctcttgcgggtacaggcgggggtcacaaggtg 45 acaaattacaatggtggaatgtcatcagttaaggcaggaactgggtattttcacttctttgtggttcttcagttgcttca ggccatctggatgtataagcgcaggtcacaggggatatgatggcttagctcgggctcagaggcctgacattcctgtcttc ttatattaataagaaaacaaaacaaaatagtgatgaaatgttggggcagcgaaattttttgggggtggtatggagagat ttcatttaaaaatatacagagttctcctttctcagcagtgagtaagtcaaggcctcagcagttttggaggaaagagaaat 55 qqqtgaaagtattggagggtgccctgtcagcaaagatcatctgtccactccaagagggagtcaagagtggcggattgggg atagtaccaggagatatccactatgatggtttggaggaaaagtgtaaactggcagtgtaaacaggggcagggcatttatg aqtcattgagaatggtgaataggagtatgactagacagaagatagtggagatgacaaattttgggggcacagtccaaata 60 gtgggggtgactgcgtagagctctgttgcaaaaagtagggtaaggataaatagacttaatagaatgaagagatgtattag ggaagaggagatcaggctggctgtctgatgggcacagctttattctggaacagtgaatccaatggggagggtcgtgca gacggatggcagttggggtgctataaatgaccaggtagggtccagtccatcaaagctgtagagtgtgaggggtcagactt gacaaggactgattgcccagctaaggtatcttcacatggctgggagtttggaggaggcaagagaagattagcagcctggc 65 gaattteetgtetageetgetggaggaetggaagataaaggeaacaggtegtgggeetggateetgtgtgaggaetetag cagcacagccttgtatttcagctgtgtgtaaaggaaaaaggatgggaacgagtcggggagtgctagtgtgggagctgtccc aggtcctttttgagagagtgaaaggaagaatggggaaaagacttatggtctatgggattagttaaattaccctttgtgag gttgttgtttggtggtgggggttgggggtctggggattaactgaacagagtctgcaggaagggtatgtgtatgttgatgg agcattataccaagataggtaatgctaggggaagaaatttgtgcctcagagggcaatactttgtacccctttgagtaaag gaggagggatgcaaggggatagtaaagaaggcatctttgaggtcgataacagaatagagttgtggaagggtgtattgaag ataggaggtgtacgggtttggcactataggatggatgggaaggacgatttgatcaacaagacgaagatcctgaacaaac ctgtaagacttgtccggtttctggacgggtaggataggggagttgtaaggagatattgtaggctttaagaggcatgttaaaaaaggcaggtgataacaggctttaacccttttaaagcctgctgtgggatagggatattggcattgagcgggtaagggt gattacattttaatgggatgataaggggtgcatgatcggttgccaaggtaggagtagaggtttcttatacttgtggatta aggtggggagatacaaggggaggatgtgaaacaggtcttgagttgggtaaaagtgcagcaaagagatgtggctgcagccc aggaatactcagggaagcagataatttggttaaaatgtctcagcctattaaggaagctggacaggtggggataactaaaa aagtgcataaaagaatgttgtccaagttggcaccagagtgggggagttttaagcggtttagaagcctcgccgacaatacc

 $aggggacagact \\ taccctccactg \\ taagagt \\ tacccaa \\ agcatctg \\ tgatggtccaggaggct \\ tctg \\ aggtgatcaggca \\ tacccaa \\ agcatctg \\ tacccaa \\ taccc$ ctaatttttggagctttttctaatgtcaggagcagattgggtaataaaatgcatattgagaataagacggccttctggca cctctgggtctagagaggtaaagtgtctaagggttgttgccaaacaggccatggactcagctgggttttcatatttgatg aaaaagagcctaaacgctaactgatttgggagaggtcagctaaagaaaaaggagcattaaccttgactatgcctttagct 10 gagactgaaggaacagacaggagagaaagagaaagathtgggatgagtcacatttgggagcagaagactagaaggactg atgtgtaaagaatgcctggacgtcaggcacctcagaccatttgcccattttacgacaaaaattatctagatcttgtagga 15 tggataaatcgaaagtgtcattctctggccacttggaactattgtcaagtttgtattggggccaagcagtattacagaag aaaataagatgtttaggtttttaaaagagtgcataaaagaatgttgtccaagtccatgccttcttaatcaatatgggag ctacccactccacattaccttcttttcaagggcctgtttcccttgcctccataactgttgtgggtattgatggccagget tataagccccttaaaattaccccactctggtgccaacttggagaggtcaggtgttagtcaaaggtgttttaagttttaag aacacaggctaagggggaaagaaggggggaatgaaggtggaaggttgcccatagtgaaagaggtaagtttaaagagaaaag 20 tagagacatggagaagggggaggtgagcagccctgggctgtcatgtgggttagcagccaaagctggtgtcccagcaatt ttttgagttcatggataaaatgtgtctcctttgtctctactagagaggaaaaagaactggaatttgaaggacagggagat tgaaggtagggagagaggctgaagaagaggtgaggagaccgcttacccggtttgaaattggtgagatgttccttgggc 25 tggtctgaggacctgaggtcgtaggtggatcttctcatggagtgagggtgaggagaggggaccaatctcccgaaggagtc aagctttttaatcatgtgggtgcaggcagactgagtctgaaaaaggagtcagcaatgggagttaggggttgggttgt ataggatttgggtaggtaatggaaattacagttaaagggggttgtcctcttgcaggcaagggcaggggtcacaaggtgc tcggtggggagttcctgagactcactgtccagaaggaatgtcacaaggtcaattgatcagttggggtggggcaggaacaa 30 aagaagaaaaaaaaattttttttccaccaagaatttagtaaaaaattatagggaaaagtgtcactaattcaagggaattg cactgaaaattattcattcaatcaagatatttattgagaagcaagtatgctggtgctagggttacaacatgaggcacaaa ttcttgtattcaaggaatgaggtaagagtatgcagatgaggccagagaggtcaagaggcaattgcaacatagagtgaca 35 cgtgctccagaacacataggagggcttccaggcccatgctgggctatcagagctggcttcctgcaggtggtgtggctca gctaaaacctgagaaccaagaatgagccttctgatatctcagggttaaatcggcacaaatgaaaccattttataaccaaa ttcagtcaaatgcaagatgcgtaggattccttttctgttcagtgctcccagccaatctttttcccttctcccaccccac 40 agttactaattccagcgtttcagttctcagcagaggatgacagttccaccaggagacatcagtgttatctggagacattt tagttgtcccagctgagggcacagtgctgctgcatctagtgggtgaaggtcaggaatgcacctcaacatcctggaacac tcaggacaatccccagcaacaaaaacctacccatccagaacatcaacagggctgtggctgaggagccctgctctagtgct tcctccttactgtatcctcatcaaggagggctctggggcatgtcaggggctgctacaggctcctggcagatttcggcgac ttcacccactcattcctgtcactctaccatttccactgccttcccaaatgcccatcgtgagtcccaccaggggccagaac accactototoaagcotocccagtggcgcgtgcacacctggagaacatgtotoacatococcagccagcgagacgtootg 50 55 tcctgggggacctccaggtggcagtgtcaggggaagctggatgtgctgacactgaactcagcagagtgactgagtagaga caaagggagccctaaagaacagtgaggagatqtgccaagaaagagccaaatccgggggattggctgtgggagagagggct gtgggagtaagaggaagtgtcagcaacgtcaaatgttgcagagacatagagtaaggtaagagtggaaaaaacatccatgg 60 atacaaagtaatgttccctccttccgcctagaaaagcacaacttctgcccccaagccctgggctctcctgagaggacagg tgaaggtcctggtttaccagatagggaaggggccctttccaagaccctttccagaaggtgtggctgagatgggaaccgtg gactetgtgcagatgtaggagetggetecagteaagtgetaggaggttgtgggteetgggaaggagggetetggagee tctgtggagactctgggactgtccttgggggagacgtgagcaggaagaagcagggccttcacagtccccagcttaggggc 65 ctcaccaccagactgaagaccaggaccaaaccctttcctgcacagttacaatgtgtcatttaattttactaaagggaat attttttaaatgaggatgctactttgtgtattaatttttacctctattcataaaagaaacgtttcttatctatttaagat agtccccagcagcatagtttaagggagtgagtgggcagtgtggcctcctgtgcacgtgacttcctccttcagtgtgccca catgtgggttccacggtcttgtgacattgtggctttagaaatttctgtttccattttctatcattcagagtaaatgaaat ttgcaggaaattcagaaccttccacctgtacagtggatactgtgagactctgcccagatgcctcttcaagccaatgcat ctycctgatattcctattccattgtatcagggatactgtgagactctgccagatgcctttcaagccaatgcgct cttccatgctcccactcccatagatgggaacagaggtgctgagccattcagatctactccctttctgggaactg ctgcccaggcaatgccccttcccagggatggctgagccaatgactggttaatgttggattgcagaggccta 75 gtaggtggtccctcaagaacctgaaaagcagacattaggaggaaaggaggagtggggcaagaggcccacacctcacctg geeggeteccatecatgegeeettgaetgaggtaacacetaeeetgggaateetteccetgeetetegtgageeaggeeg ggtgctcttgggacagctcccactgctcctgtgtgctccccagcttggcacatgactccctgaattatagtcagttccg tacctgaatctccctctagaatgccagtgccacgaggacagaggacggttccactttgttcactattttccccagggc ctggcaaagttcctgggacttgggaggtgtccttcaggagcttggcagaagccaaacggcacacttaagtagggcaac tgaggtgagtttaatgaaggattctatacaaaaatttggacaaggtatagggaggccacaatacacagtgcagtgcctgg

tgccagtgagagcagggcactattcccactgcaaggccagacagggcaaggggaggtgcctgacaagagctgccttacgtcaagggacacatcagcccactagaccccatcaggaggagccagggcctgactcccttgaccttgctctccaatc ttctgcctaaaattccccatcagccaaacacaactgaaaactgaaagacaggggagcctgctgttaataaggtgagcttc ccccagaataaagctgggtagagagtggagaatggatatggaagggcaaaaggaagatttataagacagtgggcactaaa tatctatgagatgaataaaggaaccacattttacaacaaacggtcattgaaacgctactcaatggaaagagatcatttcg gtcactgtctggtgcagacaaatcaaagcccacatgcatcaaaaaggccatgtccgtgtaactccgacacggggcagaca gcaaggctgaagcctatggggtatgtggagccggaactgagagatcctgatgtaaatctagcacttgggaaaagggggac tagaagaaattcacccacaggcagaggaaaacacaaacacttatctatttttgcctaggctttaagtggtatgggaaaaa tctctgagactacaaatcctgtgcttcatgcacaggtttataataccctcaaaatggaagaccccaaaaccaggcgcgga cttcaagccatgaaaagctactgcagagaaaataatccccagtcaagacacactcacattgaaactgcaaggcacacaag gaaatggatcaccttgagtgatagctggcagagctaataaacctctgtatacctctaagaagctccacgcactagtataa cccttaaagatttgatgaaatcattactttattaaaattgtttttataaaaaatcaaaatccaaaaaagcaacaaattt tataccagagccaattcggtatatacaagggtgtcttactcttttggaatttgtcttattgtcctaactcagcacattgt cctggtctatgaaaagtcctagaaacccttctaccctctgtaatgtaggagctttaactcaatagggttttttaaattct tttttcttgtctttttttttttttaatttttccatttttcaagtcaaactgaagaaatatttttcttttttatt qaatgcatattcaccccccaaggccacttgtctcctgattggagagtattagacaattctcaggatttcttattttcct tetttattecataggattgggaaacccagtaggattgggtttaggeatatetetaaagcaccatgtttcaacgttttgat gtaagattgtgccctatttcttgttcagttgctgccagcagatgttatagttttaaaactagtttttggtcattgagata 20 attaatgtttttagattctataacattttaacaggtgtcaaaaaatcttaagcaccacttcagcttgggaatctctaaat gtaatggtgtttgtgggctggactgatgtctgcgtcttgttgttgttattgtctgtagtaatggagagccgggagatcct ggacacttcctgttcatgggcacttgatgcattagctgccccagcagctgattacatttaaacaaggatgtgtgggtgaa cccagggagaccaatctcagtggaatggtgggggcagaagccaggctgcagggtgtagagtagaggaatgagcagtgatga agtagaaacagagtttggacaactagtgaaactgcctggaagagggggagaagagacagtaaatggtctgaccaatgttt 25 gaggtcaaagtgggtttgtaatctttatttaagggacagatctgagcatttaaaaattctgaataatctaatagagagga aaaagttgggactcaaagaaaatgtgggaaaaaatgatgaggttaaacggaatgagatccagagtgcaggggaggagt tagcctttggtgttagaggagcaactctgtccatggagaggagaaaatgtagacataccacagttgcatttgaagttgg ggcctgaggagttgaggagttcagagaaaagcagaagatgagatcattcctgagagtaaatgggagtcattagaacggg ggtgaagagctggaagctttaggtagcttgaaatagttgatggaaaaattggataaagtgacaatttgtcacactcaga 30 acagctatcagggaatctagaagaatctctggaagctagttgaagatcttaaattaccaatgtatcttgtccacatagct aageggttttacttatttttttttgaaacagggteteactetgteacaeaggetggagtgtagtagtagtagcaea atcacageteaatgeaatetetgeeteeegggeteaageaateeteecaceecageeteegggeetgggactacagaca cacaccaccactcccagctatattttgtacatttgtagagacagggtctcgccatgttgcccaagctggtcttgaactcc tgggctcaagtaatctgcccacctcggcctcccaaagtgctgggattacaagcttgagcccggctgctaagtggttttaa acagctgttctcggaaacacacactcaaagaaaaaatgtagaggataatttatctaaggctggggcttcaagagaggtca gggtgttgacaagagaatgactaagtggcagactactggatctcagctagataaagagggatgtgatcgtgggaggggct gatagtcagaggctggaaggcttgatgaacaacacatattacacaaagaataaatggagtgagagaaaccaaaggagtaa aagttgtcatcagaaaagtgagaaattttattgtgagaattcagtggtaaatcaatgttaacaaacctcagctgggcact agtggagtgaaaccgaaggccagggagttgagttaatgagctgagacttgggcaccagatgggggtccacatggacaact 40 aagccaccaggatgatgtgggaaactggggtgaatagaagccccttatccatgtgcacaagtcttgaataaaataggggc aaccaggcagtcagtggatgatagcagtgaggtggagcagagagcaatgtagttggagaagtggagccacagcagtctcctttatatctagaagggaattaatagccaaaaaatggcaccgaggccaaggatgtcaccttctgactcccaaatctgaga cagatgtgagagggaaggagtatcctcaagggacaggagatggtgcgaatgtttttggcataaatcaaagatgtcaggga aattgtcagaattcaggttccagagacacagaggaaaagcgtgggagaaagtggaatattgggaggtgagattagggcag 45 aggaagcacaaatcaaagaacgaggaatagaaaaagtcatatgagctgaggagttggccaaacatgacagaatgggaata tgatggaattaagtggctttatgtgttccaaaaaggattggtccacgcaggccacaggaaaatgggaaggtaagaagaaagg actatgttagtccaaatctttcaagataccgaagcgtggggtttggcatacaagaagtataatagaggaaatgtct gtgacatttgcaggactgcaaagggagccaggagaagctgggaaagccatgagatcacaagcaggtctgactccaagtga aggagatggggaatgacgcaaggtttggctgaagcatgtgccaaaggcacccatcagaggagtccctctccaagggatgg 50 gcctatcatagtgtccctaatagtgtcatggagtgggagcagcccacggagggcacagccttggcatgaacgcagacatg ggtctcagagtgcagcagctgggcccctcagtcaattaggctccctcagagctggggcaggaggtgcactagaccacaca actagaccacacagtagtatttgtatgtctaaggaagcatttctcagaatatactcactgaacttttagcctataagtac ctgtatgaaaattttaaaaggggtttcatgatcaaaacattttgggaaacactccataccctttcttcctcatgaaggat cataatgcctattagtatatgaagggctctgagaagtcctgtagtaaagaaacttgctttagtttttagtccagcaatt ttatcaacacagetgtattttagaaatattatetgeeeteecaggtatcacagetactaattattgggtaetgaggtgga 60 attttagggatcagccaattatgggaaagaaatctgggggcaggataagatggtctccgaagccttaaaattatatgcc tctacatttcccattaagaagcagtggtatttaaaacttataatggctattatgtgagattatcactatcatagtttttc ttatatttgaagaagccatagtaagggacagattaaattatcatcagtctaaacattctaatacctatttctttttt 65 gaaattttccaaatttgttattatgcatttaaacaataattttttgaacttttattttaggttctggggtacatgtgaaa gcttgttacataggtaaccttttgtcatgagggtttgttgtacaaattatttcatcactcagctatcaagcccagtactc aataggtatettttetgeteeteteeteeteeteeteeteeagteteaagtagaeeteggtgtetgttgtteetttttgagtteatgtgtteteateatttageteecaettataagtgagaatacaaggtatttggttttetgtteetgtgttagtt tgctaagggtaatagcctccagctccattcgtgtttccacaaaaaaacatgatctcgttctttcatggctgcatagtat 70 tccatggtgtatatgtaccacactttctttatctaatctgtcattgatgggcatttaggtttattccatgtctttgctac tgtgaatagtgctgcaatgaacattcacatgcgtgtgtcttcatggtagaatgatttatattcctctgggtgtataccca gtaatgggatttctgtttttagctctttgatctaatacctatttctcaagatcaagttagatctctaaaaaaaggcatcat acatgaacattaaatataatgagttattaacttataaaagggtatgaactactaaagggggtaaggagaatgctgaagaa 75 tgccctccctagctgatccaccttgttggagggggtgtggctgcaacccaatggatgcccaagaagtttgcagag ttgtggcaggttggggctgctgagcaggaaactgcccgaaggggtaccagtgagattcccaagaatgtgggcatgcctct ggcgaggaagacgctcttggagtgccagcaaaatttactaggaagctacccagtagggtgccagcaaaagtcagcaggaa gccactgtcgtggtgtcggcaaaattcactgaggagtgggcactgcagggtctccacccagcactggcaaatcagccaaa

gctgaaaggcgataaatcagtaactggagcctcacatcctttgcctttttattgagggtcaatatattaagaagaatat caagaaagaatgagacaatgatcatgaactattggacccaaccatttgtggctttagtgcccatcttctcagcaaggctt cccaggccggagtgcagtggcacaatcttggctcacggcaacctccacctcctgggttcgagtgattctcctgcttcagc ctcccgagtagctgggattacgggcacccatcgccaccctcctggctaatttttgtatttttagtagagatgaagtttt ggcatgagccaccacagccagctctcagcaaggcttttttctgactacactatttaaaatgtgatccctgagccaccttgg cctctcttgctgtccttccctgcttcgccttctccatagcacttctctactactactactactactacttgagctctgtg aaggtcaggatitttgcctatittgtccattggtgcatccccagcacctggaacaggctaggcacaggctaggcactct agaaatacttgctgaataattgaattaagtaaatgagtgatctacacgtagtggggaatgagagtatacagtgatagttc cttcgactaaaactggggtcaaattatagtgataaagaggaactcagaccttcagaggtaagctttgtggaccacttgcc aaggotgoagaatgtgatgtogtttoacaaacaaggaggoootattatggottoagatatgagaataataaagagaactt tectttegeeteaactgeageettetaaactetteetteetteetatgtagaagttteaaggaceteatggeetgagtgt ggataggcagaatgctgggaatcaggcaaaaataataatactgaaagtgaaggtcatgctaatattagtaagccaggg tgatcctgaatttacaaaacatttttctttgggaaatttcacacctcacatgattctgtgtttttacttgggaaatttca catctcacatgactctgtgacatgcggtacatgaggtgcctgactgctgtttttgtcctctactaatgaggaagagtgtg agtaaagctgcccgcacctactcattcaagatcctgagtgtcctgcccagctgcaggaggtggagagcccaggaggagg acccacacaagagagagagggcacttacagcttaggttcccaccagcaccaactcctctgccatcaaacatcattgtgt ttctctttctgccttgtctgtcggcacacgtggagttaaatttaatgctcaatcacatatttgtctgggctctttctgtg acagtgtctcgctctgccacccaggccagagtgcagagtggcatgatcatggctcaccgcagcctccaactcctgggctc ${\tt acgtgaacatcccaccttggcctctggaatgtctgggattacaggcacttgccactgcatctggctaatttttatattgt}$ ttatagatcoggatctcactatgttgcccaggctggcctcaaactcctgggctcaagcgaccctccacactcatacttc
tgagtagctggggctgtaggaatgcgcctcagtgccaggctagtttcttaattttctatttctattttgacaggtacaaa
ttttgtattcaatcctacctcagacacatctttggtgggaaaaggatgtcatttaatcaatataaaattctaagcaaat
aggtctgatccccaaattaggttagtcacagctgctgagtcgttgacccaagagaagctcatctagatttttcattat
ttcaagttcctcttctcggttcgtccttcttccagaccatgccctccccgtcccactctcttcccacagcctccccccc 30 cacagoctoctoccaccattocaaatctgggctgttctctcaatttccttctctctggactcaaacctaccctagcccc gattttcctcctctgggttctccttttccgagtggggtcagctcccccatgagtcacagcaccaatcacttctggctgct tgcaaacccctttgctttcctcagtgttgacacccagggcagccctatgctcactgccgctgagaccccacctctgcccc tggccttttcccagctgacatcaccctgtggcttccattttcctaaaattctcttttgaggcctcagtcttaaccaaagc acacagtgcccctcaaaaatgacaataaaaacccaaacaccgtgactgtcatggcaggttcctggtccccgtattgaa tcagcgggtgggtttctgcgaacactggtgagaggccgcattagagggtcaggaccctcaggtctggactcgtggtcacc acatacetteeteeetgetgacagtagetggtacetgttaceteeteagagtgteacatgeeacaageeagagegtettg geagtteteageacettgaeateaetteettgetaeeaeteagageggeagtgaeaeagtteeettateteagaaggeea tttcagacgcttcagagatcctctggaggcctgggggagcttttgagtactttatttcagttggtccctgagctcggtga gtggggcgggtagagccaccaggggaatcaacagtggtttctcgtgcccctcagggtcaggagcagtctgatcaaaagga gggcatccactgtccggggccattccacagctcccggatgctgggtctggggctgcgcccttcccctgcaggagctca gcccagtggtaagtcatctgtgtgtcatctatgtatttaaccccttatggccatgttgatgctgagcatggtttcacttt tgcaaacatttatttataccettcgagagaaaaacgtetcagetgtcacaggaagetgettcggggggtgagcaaacttt
ttaaaatgcagaaattatgatctacacccgtttettaaaagtaagccatcgtacttggttctetttaattatatttte
ttacatattgtgttcatgtaggcaagtcctgtttetgctaaaaagaaggtaagttctaccaaggcggtgtcatgccagctt
tatttcccgtggcacctggcacactgctaagcacttacatgcttaacaactagattgggaatggtgctctggggaag tegggcacacgttaaagaaatgtttattteagtcttctgaaatagggaatttacttgggatgtagtagtagtccagaaaggg aaagtggggctgtatgaatccaggtccagtttgttgttcctccaggataaggcagctgtcggaggggaaaatcatctcc 50 catttetecacagggcagtetgaagatggccaattacacgetggcaccagaggatgaatatgatgteetcatagaaggtg aactggagagcgatgaggcagagcaatgtgacaagtatgacgcccaggcactctcagcccagctggtgccatcactctgc tctgctgtgtttgtgatcggtgtcctggacaatctctggttgtgcttatcctggtaaaatataaaaggactcaaacgcgt ggaaaatatetatettetaaaettggeagtttetaaettgtgtttettgettaeeetgeeettetgggeteatgetgggg 55 gegateceatgtgtaaaatteteattggaetgtaettegtgggeetgtacagtgagaeattttteaattgeettetgaet tgtcctggcatgggtaacagccattctggccactttgcctgaatacgtggtttataaacctcagatggaagaccagaaat acaagtgtgcatttagcagaactcccttcctgccagctgatgagacattctggaagcattttctgaetttaaaaatgaac atttoggttottgtootcoccotatttatttttacatttototatgtgcaaatgagaaaaacactaaggttoagggagca tcctgtccactttcaaagaacacttctccctgagtgactgcaagagcagctacaatctggacaaaagtgttcacatcact aaactcatcgccaccacccactgctgcatcaaccctctcctgtatgcgtttcttgatgggacatttagcaaatacctctg ccgctgtttccatctgcgtagtaacaccccacttcaacccagggggcagtctgcacaaggcacatcgagggaagaacctg accattccaccgaagtgtaaactagcatccaccaaatgcaagaagaataaacatggattttcatctttctgcattatttcatgtataaattttctacacatttgtatacaaaatcggatacaggaagaaggagaggtgagctaacatttgctaagcactgaatttttctacacactttgtatacaaaatcggatacaggagagctccttcgcctcctaccactttgtccatagtgtggata 65 ggactagteteatttetetgagaagaaaactaaggegeggaaatttgtetaagateacataactaggaagtggcagaact gattetecageeetggtageatttgeteagageetacgettggtecagaacateaaactecaaaceetggggacaaaega catgaaataaatgtattttaaaacatetatttaatgtatttaaaataatttgtaagttgattttaaaaccaatttaaet 70 etcaggcetcaccagcacataactacaaaaggttgtcccacttectttctgtggctgagttagtagaacacaggetccca 75 cctgccacatcagcagaaggtcacctcaacatgtgagctacctccccggagaccccccagatccgtaaggatgatgcatc tggccctttgaggcctcaaagctaccagggccttgctgccaggggacaatcaccgctcccggctgagtcctgcagacata tgctaaaaacctacccaggccgccactgctgccgcactgcagggcaccagcccacactcctcctcctggcatcaggc

ttcaaagagcctattaggatagcggatgagacccccaagggacatgcttatacaacaataactggctccaaaccacactc catggcagtggctctcaaatgccagctcacatcacaagccctgtgctaaaacacagagttctgggccccatcccggagtt tgtggttcaggaggtctggagtgtgacctcagaatatgcatttctaacaaattccccaggggatgcagatactgctgacc aggcagagaggaaatatgaagcagcgtcagttggagagaaattaggaagaggaataaaatgatatatgccagggatttcagtttgctgagcccatgatgacagactcttctctggcaccttatgccactcattgagggcttgtagctggctctgctctt gttttgctgagccatgatgacagactcttctttygaccttatgtcacttattgagggcacaagtaatagataaaactgcaagaagt
tcagagtcataatagggctatgggtctgaccttcaaggtgagctggaatgggcacaagtaatagataaaactgcaagaagt
cactcaagggtccttcctagaacaaaggatccctacattccaaaggcgaatgccggtcactatcataaaagaaaag
aaagaaactgatggtgacattttaaatggcaattttctaagcttctaaaaggttgtggagcaactggaactttcatacc
tgctggtgggaatgtaaaatggtataatcactttggaaaaattggcagtgtcaccaaaaggcaaggctatacctatac agcctggaatgcaatggtgtgatcttggctgactgcaacctctgcctcctgagttcaagcaattctcatgcctcagcctc ccaagtagctgtgactacagtcatgcacaagagcaactgactaatttttgtaattttagtagagaggggttttgccatg ttggccagctgctctcacactcctgacctcaggtgatccacctgcctcggcctcctaaagtgctgggattacaggcatga 20 gtcaccgtgcccagccggaagccagatattttttaaaagtacttattttgtgattctatttatataaaattctagaaaat gcaaacaaatccatagcgacagcaaatcagtggttgctggagatgttggaggggagagggagagggaatagattgcaaaggg gaacaaggaaattcggggggacagtggatatgtctgctattttgactgtggtgatggtttcattggtatatacatatgtc aaaaacgtaacaagttgtatacgtgatttattatgtgttgactatacctcaaaaaggctattttttaaaatccccctcag gctccaggcactccattacgttggtgtgacttgtcttggaaatatactttgagcatttgccggaggagatccagtgcctg 25 ggcctctgtttcttctcccaagtagaattggcagctaaaacgggatgcccatgggcacaacttgtcacccccatcaccga aCagggagcagaaggaggctgctgggggtgccccacagggagcacagtctcatcgggaatgacctgccatggcaaataa aatcaccagggcaagtcaagggagagaccagggaagaggtgatccagtctatattaaaaaaggatgagaaaggttgaag aaaaagagaagaaggacagaaattetetteacacatttgcagaagtaggtccggactetccatecactteteeteeteetee gataggtaggacaggaatctcagaggaaatggcatcatcttcccatgtttacagacacagcaatgaactcaaagaacaat 30 cttatcaggattttccaaatgaaaacatggagcatatagagaataaagatccataaactcgtatggtggctgagactgaa atggttaatgaaaagcaaaagtgtgtgctgaatgacaccagccacaatggcctgaacacttaagtagtgtaatatacttg gaacattgacagctaacaaggtcttcctcccatgtcagaccaagaacacagtttcctaaagataaaaatagcacatgctt ttccacttttccataagtgactgcattagaaaactaacaaaccatgaaaagcaaaatatggctagtctcttcaagaaaaa aacteetgaeeteaggtgateeaceeaceteggeeteecaaagtgetgggattacaggegtgageeactggaeetggeee 40 ggaactagttttaaaacaggaaacagttgatatactgaatggaaaaacaatacaatttgaagttgaaaaaacaaaataag atgcccagttaaatttaaatttcagttaagcagctaatagttatttagtataagtacaacccatatacgacaattgcagt attigttattiatcigaaattcagacttacctgggcatcctagtatcctgtttttgttttgttttgtttttccctttgt gccceggccaggcctttcctcttccctaaactgccacagcaggactgccacacttgggaatcccagtttccatctgagca gcccctccagagtttggaaggagtcagtgctttagcctgaggagccgtggatggctctaacactttgcttgtcggttgaa taaaaatcaacccaaaggtggcctacactcattgaagtaggaatgccagaacttcagtggtgtcacatagaagaaaatat act t taag t t tag g g tacac g t g caca a a g t g cag g t t t g t tacat a t g t a cat g t g c cat g t t g g t g cac g cac gccttgaggaaggaccctgttacatttccggcattttattctgataatcttttttcccagccttccccaaagcaacttagg gccatttaccagggaaagccatggaggaaaaggaaataattatggctatttagagattccaggacactggctctacgctga caccagttctaagagacccaaaaatatctttgtggtctaccagccaaagtagggcttcatagaggtcaggggtcactagag 60 tttgagotcaggtctgtttcactgtgagtctagagggtccctgaacttatcctatagttattcccccagttccagaatgc agaattgagetgagageagtggetcatgettgtagtcccaacactctgggaggegaaggtgagaggatcacttgagccaa gcggtttgagaccagcctgggaaatatagtgagaccccatcttttaaaaagacaaagaaaaataaagaaaattgacatgg 65 aaaaataatataaaatgtgaataatctcacatctactaaagaaattcaatctgtaattagaactcctcccacagagaact tctgcatcggggaagaatccccatattgattctctgatccatagagtgaaggccaagtggaagcctttggaactccctct acctgccaagatactaaacaaaaacaacactgcacgtctggaggaattgtagcaagaacttgaaagatgaaggatgatgat gtccacctctctccattcagctcacctatctggtttgtgcagaagacaaataggtgttggaaaatgacagtggaccagtg 70 taaacttaatcaggcgggggctccagctgcagctgcaggatcaggtgttgttgtttcatttctgcagctaatcaacccttctc ctggcacctggtgtgcagatggcaatttttcttttctattatctgttagtaaagactatcagaagctgtttattttcagt cccctteaccgtctccaaggcctagtcctctgctcctgctactggagcaaatccacgcaggtctgcaacaacctcaatt cctgcctcctcagaagaagaattcaattgagggacgtaagacagaaggagagactgaggcaagttttagcacaggagta 75 agcaagtgcgtggtttgaccttttgacttggggttttatacgtcagcatgctttcggggtcttgcgttattccccctg gttcttcccttggggtgggctgtcccatgtgcctgcctgagcccactggctcaactcctgagatcttatagggaaactac

tgccacatgttgcttatgggtacctgtggtaaaaatcctgctactagctcattttgcagtgtctataatgacaggtaatg ctccattcactcctttatgacacttgcaaaaactgagaacataacgcctcccagttaagcaggcatctgggcaatgtgag gagaacagaaatagaccacgctgcatttatctctcttgatgacaggcattgagatttccactttttctggtttcttatta tgtctctactgggcattcttacatacatcttgcacgccatggaaagtttctctagggcagtggttcacaaactttttgga tacagaatacttttatgtgcttgaaaactgaggacccatacagctttagtttatgtgggtgtaaggttctagcccaaac tgaagtccgaagggagttggtgggtgaggggtagctgaaaaaacacccgaggaatcataggcagtttgaacatggc cttatcctctctgggcacgagccatatgtccagtgtcagcagggtaattataccttttacagacaatagaggctctga agcaatcacgagctcacgtgagtggtcacctaatgcacctcaagtggcatggttcataatgtgcggagtcgtgtgcctac gctccaaacccactgagtcatggtgcaccaaaaagtggcctcagcctgctcctgactaaagcgcagccatcttccttaca ctccacccctaggccagggcatcctccaggtagggacatgtgcccgtagggtggagccctgaatccataatccacagca acaatacggagagcaacagctcatgactaggattccagctatgctacttatgactatcagggcccagcgtaggccagagc ecagggatgtetaccatetetgeagggggteateagtaaggetettgaetacettaateteetgtgagacccettgeagg getgetgttatgttetgecaattgteagggataaaggtacaacattgtgtteetaaaagggeacaggtgeeteettagge agcagttactatgtctaagaccattcggtttcgcaacaccacctttctgatctgatcaacctcatccattaatgggaaga 15 gggccactcaggtgtaattcagagcctgagcagcatgctctgcaagagcagtaacttggcttctacagttgtgacacaca ctccagggctagtgcctgtcaaggggtaaaaccaccagggtgctcattacacttgcaaaaaccgagagtgtagcacctcc cagttatgcaggcatctgggcaatgtgagaacagtggcaggtacatgaggccaccctcaggtataatgtccagtccagtt tgcttataggtaaggccaccctgtgtccccacagacccataaactcccagggggcacacagtccatcgaggccccttggt cccatcataaatgctatgggccagccagggaatggctgtgctgtgggtcttgtggcatcctttgtccaaaacttgccacg ggcaagccatctgcagctgctagaagggcggtgcagatccaacagttggaaacattggtcacttcagtgtaggtgtgggc ccagtccacaatgcagttggagcatgttaacctacagttggaatgacagagtaggcataggtactaacagaggaaaatca 25 catccctcaggtaaaatacaggctaacctttcatccctggataacaatgcagcccccaaggggttctgccctgggcaata 30 Cttcagccctgcaaagacaggagtgtgacatgcaagtaaaacccattcttcaagagctcgctatatcactcaatcatacc cacagcttgcaagttgtgcggtacatggaatccctactttatgtccattgttgtgcctgttgtccagtaaaatgtgtccc 35 caccctgcaaggataggcaaacaacaggcctgtggctgtgtccacagctgttagcgcatgagtatacccttgtgacttcg gcagcageccaatgtagtetaettgecaeetggteaagggeaettgeeetgttgteaettgtgtageaetggaeagetge ccaacatttattgacttgttgcatcagtttaccccctgcatgtcccagtttccggtgtagctacaaggccacatctcatg tagatgccaactetaaccateggaeettggccaaggettetgeetegteattgetgggggtggeeagaggcatatggeet gacaaatgataaatagttacatctttgcaatgacccatttcccagaggtcttgctacatgggttggtggccccaaatggg ttggtggccaactagccaattctgtattttccaagtagttaaacacaaagttaggcctccatagactgcccagctatcgg agcctcctggcattctcaggcactctgtgtgctgccacaggcccaaactaaaaccatctgtggtcacatgcatatccagt tcaaatgggcaccccttgtcaaatacccacagggctcgtgcctgctgaatagcccacttggctgccaggaagccagtctc agccacatcagcccaatcccagattgctcccttctttgttaactgatacaatggttttatcatttgagctaaatgaggca ggaatgtccaccaatatcccaggaggctcacaaaagtttgcagctgcctcaccgtggtgggccagggatatgcctaaatt ttgtcaatgatagcctcttgtatggccttcatcttacccgaccagataactcccaagaatttagcaggtaatccaggccc teggacettggatttgttgatggeecaactgeatgetgeeaaatgttgeeacaagaggggtgeeactgettetaaatetg 55 caagagaatcagaggttaacataatatcatcaacgtaatggaacaagtggactccctttggacattttcaggctgttaaa tccatggcaacaagaccatgacatatggtggagctatgcacatagccctgcagcaacactgtgaaagtccattgtcatca ${\tt aggcaaactgttcctggctctctagagcaaggtcaactgagaagaatgcattggccaagtccaccacatagtggtactgt}$ cctaattccattgtcgagtggttcatcaaatccatgatagatggcacagcttccaagccatgtaaaatatccacctccag ${\tt aatgtattcaggtatgggagagacatacacagtgtataagcaaggagccaagtggccaatgccaaggtacagagatacag}$ gtttcactttcactgactggcctccgtaacctttaatatatgcagatttgcccaaaaacttaactgggttcccataaaca aggotacaatotatgocagtatotacoagoacoagoacocactgtacattggtgggggacoagtggattgccaattocac atgtggcctctggtcatctggtgtccccccaagccagacactttggccagttccctagttgaacagaaaaggctctaca 65 70 gcttgcctaattcctgcaactcagttggggtacaggcaatatacgaaatgtgttgcattatggtggggagtccctgagtc caccettggagecccagtggetgttcatgatetacettetgtcagaccaccgggtgageccgcaacaggggttettecte 75 cttggtatgaaactgagtggggatctccagacaagatgatggacccaggcctgcattcatggtagcctctaattcctttt ccaagetetgaagecacacetecaggeatectgcacetggaggtecccatteatggcagectetaattatttteca gatcggtgtagccagacctccagtctgcatccctcagggactgggtgtgtacttttcttagcacagttaaaaatgcccat ccaactctgccagcaaaggctctctccttcttggtgctctgcacttccagctgcttcagcgccttctccatggg ggacccatctactgccacccaggtttccactcaagcccaccctcacagcacggctaccaccgggtaccacaacccatgtt gtggtcacatggccaacctggaatcagcagggaccgaaggctcacttaccttaggatcctgttcgtgatgccaattgtca cgacatggctttattctctctctgggtgcaagccatatgtagtgtcagcagggtaattttaccttttacagacaatagtg

gctttgagccaagcacgtgctcatatgagtggtcacctaatgcacctcacatggcatggttacataatgtgtggagttgt gtgcctgcctccaaacccactgagtcatgctgcaccagaaggctgcctcggcctactcctgactaaagcacaaccatctc ccttagagtgggctaaatctactgctatttatactattagaaattttaacacagaagttttaaatatttacattgttaat tgattttgaaataataagcccattacaggttaacataattaacatacttttattaaaaatatctgtattttttaaaagaa aaaaaattagcaacaacagtgatccttggaatcgtcccacctcagcctcccaagtagctgagaccacaggcgcacatcac catgcgagctaatttctatatttttttggtagagatgggatcttgccatgctggccagggtggtctcgagctcctaagctc aagtgateeteetgeeteggteteecaaagtgetgagattacaggtgtgageeaccaettetggeeagaagetggattet ctgtcttgttctccatccatctgttagactgtcaaatgccaaataacctttggaaaattctactcgtaaaataaggaga gagataaataacttctgagtatcatcattaaaatagtttgacctcatggacccactgggtcccatgtggagaatagctct aagctaaagagtagaatggctgggaggggacataaacattcagcccatagctgctgaccacaataacacattttaagtct cttcctctcctgctccttgtgattgcagacagactcaatctgtaggagagctgtagagagaacaagctcaagcccctgat tttgcctacaaagaagctgagcccagcaaagttaagggacttacccaaggtcacacaggccacacagcagagctggggct gagetecaggtgtectgetacagaggecacttettteteccactagggaetggeetgtgattaetteagaaaacaatggt cagetaactgattetgaacgccetttgctggtaaaagctaatetectgaggaaaaatgtatgcattggetgggegeagtg gctcaagcctataattccagcattttgggaggtggagacaggtggatcacttgaggtcaggagtttaagaccagcctggc tggagagactgaggcaggagaatcgcttgaacccaggaggcggaggttgcagtgagccgaggtcgcaccactgcattcca 20 accacaaagtccatgacttttccctcagaagtgaatgcatggctaattattttgtatttttgtagacatggagttttgc aaagtgaacacacatgctggggaagaggcctgcaggcacccctgccagttctgcaccagagcacactgtagcagccctgc tgtgatgcaggaagcagctccaggtcctgcagtctgaagcatggagcctgaagcctggagccccccatccaatgctgcgc catgctcaccagtatcccccagcatcagcaccgaggcaccagctgcagataaatttctccacctaaaatgttgagagatgt tgctaaactgtccttctaagggtatgtataataatacggtcctgccgatactgaataagactatctgtttcattacatcc tcacaatactgaatatcattagcaacttgaattttaaattgtgctaatcaatgaaaatgattgcctaattactagtgagt tgaggttatttaacattaatactccttctgatgaaatattttgcatttatcacattttacataaattctctctatataat 30 tägcactagaatgtccgacttggttttcattgttcctcacctgtttggaaacacattaagaatgagggagagaatggatg gggactcacctagggatgcatggactggtcggcagccactctgaggccctcttaacacttccccaccaccacttaatt tggattttatgactgaagtggcaaaaagaaataagggattttattatgggggaggtccaaaccctggtgaaaaacgaaat tcattgaaattgtttgaaaattcaaggattaaatcagattattttggattcagtaggaattagattactttaaagcccca ggatactttattctgtagaatgcatggaaagtatagaaaagagaaacaaagagggaaagtcatggctaataacctggaag gggtaaatagggagccaaaggcctgtgggacgtaaccaactcagcattccactggaggctttatgatcaaatagcaagct atttatcatgaatgcaggatgtgggcaaactcacgactgctcccactgccagaaggtttgctgagggcaatcacttcctg cactagaggcaaactgcccgctgaccccttcttccaaatatgctcttttgtctcatgtcttttattcccgctttcacccc gggatcccgggacaagtctgccggcagcagatataaggtcagtgccctaaagaggtactgggagcagtgccttaaagtag tactgggaatgggaagttttctgaatcagggtaacatggggcagaattggtctgttgaagaaaaacattatgtgcagttg cttaaagttttgttgaaacaaactggtgctcaggttagttctcacattaactacgatgctacaggaagtcattatgcata acccatggtttccacaggcagggactcttgatgtagaaaattgggatagagcagaaggattaaaacaggctcatcaaaaa ggttttcaagttgattcttcagttttctccacttggagtttagttcgtactgtacttctgccattatctccttgttattc agagggaggataaaaattggcctatacogccccctccagttgcagaaacatctgtaccgcctccttcggtggcagaaaca gagaccccaatacaaagaattttacgctctgccgccacggctggagagcccttaggaccttgcacttttcctatttccgt aagtootgatocaaataatocacagcagottaatcatgaacacattocactagagtttaagttgttaaaggaattaaaag tgagtgtggtaaataatggcatacagagcccattcactttaggattgctagaatctatgtttggtgctatgtgtctttta ccctttgatgtgaaacacttggcatgaacttgcttgtctgctagcgcatatctgacatggaatttaaactggcaagaaca gggtgcagaccaggctagacagaaccatgctgctggaaatggagacattacagaggataggctattgggtaatggccctt attotgacotggtacatoaactagcactoacaaatgotgottatoagcagtgcacacaggotgotaaatgtgootgggoo ataattootgaagagggagtoocagtactatoattittacatatoatgcaagggtoacaggaaccotacgcacaaittot tgcaagattacaagaggcagtgaggcatcagattcctcataccttggctgcagaaatgctaacctttactctagcttttg agaatgcaaatgcagattgtaaatgtgcactggcaccggttaggtgtacaaaaacttgggaaattttctcagagcttgtt aagatgtagcaactgagctttatcgatctgcaatgttagctgaagcaatggctaatttagctgttgacaaatctaaaaag 60 agccaagggtcaaaccctaaaatgggaaaatgttataattgtgggaaaaactggacattttaaaaaggaacgccaccagat ctcaggacagaaaggatcttacaatgcttttccccccggcccccagcggaaagaacacctggactttgtcctcgctatga caaaggaaataactcggctaatcagtgctgctcaaaatttcatcagaatggcaccccctgttgggaaatgagatggggg cctgtacccgggcctcacaaacaatgagggcattcccaattcagacctcaaccctgtttcaggcatgggttcccagaggc 65 ccaccttaacttgcaaaggcattactgtagtcccagaagttgttgactctgattatgaaggagaaattcaagtagtttta ttgtcacgagatcttcgggtttttqaaccgagagaatacataatgcaattattacttattccctqcaaattacaccttc 70 ttaccagcaggtctttgttcttagagctcccaagatggcggcaagccttttgttctctgacctggagttcttggcctcac agattccaaggaatggatccttgggccatgcagtgagtgtcatagctctattagaagctcttccaaaagtcgtgctgcta tctatggactaaaacatactcaaacaataatgacctctggcgtttaggctcaatgctcagagctaattgcagtcattcag gttttacagetcacagettcagateetgtcaacattgtetgtgttcagtttatgtegtaaatgtageeggtcacatagaa 75 gctccttttcatatttctcatattccttctcacacacacttcctgggccgctatctctaagtaatgagaaacagacaa actgattgcctctgtgtttcagcaagctcaaccatctcatgtgcttctgcaccaaaatacttccgcccttactcacatgt tcctacaggtttgtattatattatgcagtatatccctcgagccacacctatagaaggatgtaatccacgaggtttggctc caaatgaaatctggcaaatggatgttacacacacagcaacctttgataagctgagctatgttcatgtgactatagacact tcatatggggatatctaaacaattaaaaactgacaatggacccgcttatactagtcatgcttttaaaaatttcttgcagc tttgggctataacccataaaacaggaattccttataatcctagaggacaaggcattatagagcaggcacatcaaacattacaatgcatgttgaaaagacaaaaagcgggtataggaggccaactaccacctcaataaaaactacatttagccttatttac

tttaaattttttgactcctggtatggatggtaagactccagcagaaagacattggcaagtgttagaagaaaagaggaaaa tttatccaaaaqtgttatggaaatccctggaagaaggaaaatggaaaggtctggtggatttactgacgtggggaagagag tatgettgtgtttttacaggagatggacaageegtgtgggtgecetcaaggtgtgtgcaaccatggaacgggagactaga ggaacccagggtggccaaccatggacagggtccccccggtacgagccatgagccagctgagcctgagtgcaaagacggag agaaggccaactggagtcacaacacagttctaatgttatatttgtaaagaatatcactactcaacttacagtttgtgttt atagatatagatatagatatagatatagatatagatatagatatagatatagtatagtatagatatagatatagatatacacttta agtictagggtacatgtgcacaacttgcaggtitgttacataggtatacatgtgccatgttggtttgctgcacccatcaa tecetgecetgtgtecaagtgtteteattgtteaattteeacetatgaatgagaacatgcagtgttttattttetgttee 10 tgtatlagttigetgagaatgatggtttccagcttcatccatgtccctgcaaaggacatgaactcatccttttttatggc tgcatagtattccatggtgtatccttatgtctttttgacagctaagaaggaccagctccaggtaaacaatacccaattga cctgtaaatcttaccaattatatcactgcattaatcatagcacattgcaaacacataatatctctactttgatgatttta ggccacatecetgggctatgtattectgttaatetgteegaggettgggetgeeacacetgetttgeattttgtgaaact tcttctaactgagcttactcatcatgtctgtagagccttagacataataattttagctattgtttccttggtcgcactaa 15 gccgaccaagcatggctacttcagaataaaattaacactgagttacaaactgaagtggtgttatgggaagtcagggaccc caaagagaggaccagctggagccacagcagaggaacgtaaattgtgaagatttcatcttaatacggatatttatcagtt ctcaaataatacttttacaatttcttatgcctgtctttaatctcttaatcctgttaccttcgtaagctgaggatgtgcat ttcctagcaaggaatattaatattaataccctcggaaaagaatgcattcctgaggggaggtctataaatggccgctctgg gaatgtctgtcttgtgcagttgagataaggactgagatacgccttggtctcctgcagaaccctcaggcttactagagtg ggaaaaactctgctgtagtaaatttttggtcagaccagttttctgctctaaaaccctgttttctgttaagatgtttatca Cctacgtgaaatattgggggttgggttcccccgatatgtgatgtcacccctggtggcccagctgtaaaattcctcttttg 30 ctcccaataaagtggtaatgttgaaatccacagttctatggttaggggaaaagcacaaagcttgcaattgcagcagcaat tgcattgtcattttaatcacactcatatttgtgtaaccaacttagaatataaccaaagtgagtatctgtgggacgttgtg aaagcccatttgcagggagctttcacatctaacatcacctttgatattggtgaattacaaaacaaaattcttgatttaca taggcaaattcaagagtttctgccttctttagaagactggaccaaattccagcaaggcctggagagcctcaatccttgga 35 cttatctaaggcactacattaacatcttacatgtagttcttggaataatattgttttgtctctgtcttctgtcatagcc gaaagggggātatttagggageetaāggetegtgggaetgaceaaeteateateeategaggetatatgataaaaeag caaactgtttatcatgaatgcaggatgtgggcaaactcacgactgctcccactgccagaaggtttgctgagggcaatcac ttcctggcaccaggctccttgaggttatctactgggacatctggagaatgcagtcttgcaagcctactgtggactgagca gctgatcccttcttccacgcccccttctcactatctcttttgtctaatcactacggagggttgtgtaaagctcagggcc cttgtccactagaggcaaagtgccccctgaccgcttcttccaaatatactcttttgtctcttgtctttttattcccacgtt tgccccctttgttcagtttccctaggtccatgtgggttacatagtggcaacctgaacaatgacagaatcaggtgctctac agaaataactttttaaggaaagatttgggacttagagaccccaggagacatacacaaaaatgataagaggatgtgcccaa accagtettaaagttgtggcacagggtgaggaagatgaagctgttactgaacctcagagagtgactggttacagcaaa agatccagccacacctaccaggccatgctctgggaaggggtgggacctgggcaaaggacacctctctaggactgcacag 50 cactgttgcactaaccccagtcctctatcactgccccttcctcctgggcgacttcactgatgttgtggccatgtgaattc tctggccaatgaaatgataaagatgatatggcctctgccaagcagacactgtaagtattattgtatgatgcttttgtctc tttttttaaagttaaagcagtttattaagaaaataaaggaataaaagaatagcactccataggcagagcagctgcctctg tetettatatitteeeeteigeeteaageeeaacatgeeeaaattggggetgetggtteageetgggteteagaataaa gacatgagccacagatccattgctgacccatgatggagatggacacaaagagagaaacacatttttgtcatgttagccact 55 aagattttgatttggaggccatttgctacagcaatataacctagcgtgaacagagagacacagogatgttccatttcttt tcaacctggaacaggagaatttcataggtgggcctcaatttcactttagtatcttatttagacaagaaagttcatactgt tcaaatgtcatgtttaagagtgctggcattatcactgctgtggctaccccatcagatgttgctcactgactaatcttctc atgttagtgaggatggacaacatatcaggccataattcaaagtagcaaataggaaaagagcttcatcctagcattatggg ggaacatggccaaatggttgcccccacaatggaggcagagtttcaggacacttgtctgatctctgcccttgaaggaacag totcaccotgattgacacttttgcotgttatgtccaaagaaccaatggaaaagcaggaaaattattcottottcatttct agagcagaactctctcccaccaagagactaccttgagacataacagtcaattcacaagccaaaatatgcccgctatgaaa 65 ctctcccatctggaaatttttttggctgcttttacaacctagttttgcccacaaaggcaccagcagtaaccaactcaactg cctggtagacaaggcaccaaagccagtacccagaccctctacctgctcacttcctgccttgcatgccacgcccccattt aaaagcctctgctttctgctccaaaggtgaagcagttacccttaaggaaagaagcctgtacttcttcccctaaggtagct ttggaataaaagtcactttataccaaacctagctcttgttaattagactctgcaagtgatgagcaactgaacctacattt cagttataatteetatgettgttetteetgeeetgeettggggaeaegeacaeaeteecaggeaeataeatgeaegtgea 70 ctgagacagctatgtgaataaccaacaagatccccttaggaaaaccggtgcttggcctggccttaaattccagacccttg ggcatcatacccaagactgcaagaaagaggagggctggacctgaaaaacttggaagggaaggtccaactgtacaggtat tttqtcaggcatgtgatttcagtataaaattctagaaaagatgagtgacactttataaggagagaatatcaacaaaattt caaggcccaacacacctggggagaagagctgggggcagtgaatggctgaggctttcttggggagctgggccatcttctt 75 cggttttacttcctgaggaattcacaggcttccaggagggctgtggggacacaacagagcaagagattcagaaactgattt cttccattaaaccagttatttaatccaataaatcaaagagaatactaagagttttctctgcccttctcccatcactgagt cagtgottgccacactcatattcccactcccctactcctagcgactacggtgttcaagggagccagagtctagccctcac cagccagggtgtttccctgctctggcctgagagacacaaccaccctgcacttgtctctgattgaatcgactgtcacattc tcaagttcacaagacattggtggtcctctagcttctccggaatgtgaacctgtttgcaatcatgttcacctgcagattc

ctatttgttaccagcagcaccctctatgttgtaagaatcaaaaaatgcttctcacattgtcaaatatcccctcagggga aaaattgtctctcattgaaaactaccgataaagacatttctggccctgccccatccttggaccaacagcatccctaatg ccccaactctgggtgagggaccaggaataggaatctgaatgattgcagtgcacagggagctgtgcacactgaaatccca cagttatcaccgggagccttacaatactctgtgatgtcttctaaatatttttaagggattaaattaatatcaacatattt ccctggttaagatgtgttttcctacacttgaatttttttgagattttgtttctctatagttggcatctatggtaactgt ctagaatcagattttttttttttttttttgaggaagggtctttcggtgtcacctaggctgtagtgcagtggtacaatca tagctcactgcagcttcaaccttctgggatcaagcaatcctcctatttcagcctctcaagtagctgggactagaggtgct tgacaccacaccaggctaatttttaaaattatttttgtagaacaaggtctctctgtgttggccacattggtctcaaactc gtcatttctcaatgcatatgtatatatgcacctttcattttactgaataaaatggattatcagtttccaaagatttcatg 15 agcactttttcagattagtaatgcctgcgacatactgtggtcccaaatatttttcatatgttgttttgccatggagtctg gccagacactcagtgttgtcattgaacagaaggtttttggtttcagactggaataagcaaaacttgtccgggcagtcaga tccatttctcccaatttagcctgcgacaaaagggcagacagtgagtaagctaaggaaaagaggaatttgtgggttaaagg aggcaaaggggtatttcttccacccaagaacagccctgagaaaaccatggggcagaaggagctgagttctggagtcattc cacctccttagtggagtccccaccccacactcctggtggcaggcccgccttgggcagcatccaggcctcacacctc tggtcctacctcctaccatctgccatctttccttccttcttaacctgtgaccttttcccatacaacttcttatgggtgac aaggcaacaatggagggttttgagatctgccctcacaagtcaattgctcaggacattctaatatgcagctcttctagag 25 30 ccacagcatgaagccaatactctcaccatgagcttcaagtagaggactagagggatcgagtgggctggtgcacctagct ctgtgatctcctcacctaacatgagcccacacagctaagaaagcactagaagccctgtggtccatacctgttggtggagc aaCacctgtttcaggcgttccaccttatccatccgagacaccacggcatgattcggggccatggcaagatggcagcttct agcctcagtcacaggcttccgtttgccatcgaggcacagcagcgcaaagtctgccagcttcaaatccttagcccatgcgt cattgttatttcctggggagaaaaagaaggtggcatcatccacgcctcccctgcttagccaagaagtctcttctgggtgg 35 gtgtggccattccactgacctcccaaatgcacacactggggttgtggtgatgtgaggaacagagaaggagcttcatccta cacaagotgtacaaacttcaaatataccaaatattagtgctgtgtccatgcaatggaatgttattcagcaataaaaggga gtgaagttctggtacatcctgcaatatgcatgaacctcgaaaacgatgctaagtgaaagaagccagtcacaaaagaccac acaataggctgggcacggtggctcatgcctgtaatcccagccctttggaggccaaggtgggagaatcacttgaagctagg tatgaaatgtccagaataggccagcctatggagacagaaagtggattgatggttgccaatgctgaagaaggatagggcaa tgactgataataggtgcaagggtttctttatgggaggatacaagcgttctagagttggattgtgttgatggctgcacaactctgtgaatgtctggaggatcactgaattgtacactttgcatgggtggattttttagtatatgaattctacctcaataaagctgtttagagttcttatttttaagagttctaattttttaagagttccagaaaaagaat agatggtttacattcaaggagaaattggtttctcctccctttcatattcaaatgctattagtgtaaccagagaaaggaaa ggaacttttataggtttatcaaatatatacagccaattctaacaaatacagttgtaaagtaccggagaaagttaaaatt aaatttgacatcaatctgatccctggagattacttcagttaatggcttgtaaattctaaatgtaattgtatgcatgtcta tgtttgtgcagatgccggctcattgttccggctcccgtttgtctctctgctctctccctttaagaaagcactttattcat tctcttggattcctctatttgatattgaaataatttcaaatttacatgtcttgttttaatctctgtcccaagagacacta 50 tttctcaggaaacagaatagcaagtcacctgctgagacttgggggttggaatgctgaagtgggctaaggagacagatgc ctctacttcctttttcataaagggaggcttcatttgcatatgttcacccagtttgtagcatcatccacagtttccaatag gcatgcatgatctcatgtgggcagacagtgtgtttctgtggttgactagaggaagccagggagacatttgctactgagca cgtttcaaaatccatatgacacctacagatgttatcatgttgtctattgagataaagaattttggagttcttttaatcac aaatatggaaaatgttataaaaccttcccaaaggcaaatctgaacactaagatgtgttgtgatgccaaagactctgcttt gaaggagaaaaggaaacacettcacetaccatcagtgttetgcaagacagtgacatetttcacaaatgcaacgtetecag cattctcagccaggcacctaaaatgttccagaaaatatacacataattacagaagaaactagtggggctttcataaat atttgtaatatgcattccaaaaactgaaatatggaagtaaacatctaaaagacaactatttctaggaatttactgtttacagggggaggattgaacacaggtgtacctgccctcttttaaaaccctatataaaagacattacaaaaccaagaaatctaaa gtgctgaagagagttgaagtctgtggttgttgtggtggaaaaggtgctgggggcagtgtgagaggctagatcttcttctat actacagagtcagcagaaagttaaaaattaagaaccagcattataaggatgatagaaataaaggggtatgacactggttt 70 cagcttttaatgattttgctataaatttccccaatctagattctagatataatttaaacaaagacaagggattttcttc gagcacatgctictttcgggctcttatgagacatgtgttcagcatttctgagtagaatcacatttccatttgcaaatcct caaaagctacttttctgtcattccattactggaacaaggctgttgaatttatattaaaaagttcagacacctcaqacac 75 atgacgccatctggtcgtgaaatgtactcttggcaaatggaggaaaaggaacaggggaagatcctCtctgcacccttcac actggtaaatagtgcccctgagaagcaacaccggatgaatggtgctgtaaaacgtggggtgtggttacaagtcactaag tggttataacttatgaattetgaaaacttgttttttggcttattttcacttcgttactggagaataacactgcaattct gccatctctttgccatttctaaggccaaagtcagagaaaaagggaaacctaagccatagtcatgacctaggtgagaagaa aaggggcggcgatgggaaagagaattcttccccataaatggaattgtaggaagcacttaggataccacactctacccatt tgattttcaggacgaggctattgaggcctactgctgttgatcttggctcaaagccacagggagaagcactgcggagctga agetgacccacaggatgacccccactctgctgtgacaggtcacatctggctccttagaactgcaatgctgacatgctgag

ggatgaggtaagtccccatcctgatggagctcagtcacagactcaccggaaagccccagtgtagccgtagtatctctcgt tgctgttgggcacgcacttattctcaccctgctcgtcgccaatacacagagcacagagattagatctcgggtcagaccca ccaactaaggctggggatgagagctgtggctgcctggagggtcccgtcatcacagccttgagctggggactcagctcatg accgtgatggctgtgtgcagcagagcctgtgagttgcctagtccaggatctgattttgtttttatcagtaatggaaaccc tgctttgtatctgggtgcttggccctttggtataaagactagacttatcagactccctggggctcatatggccatatggg agaataaacaaaaggtgacaagaaagctctgccccactgagcaaacgtcacccattatcagactcccactgctgctggaag agccacactatgtytcaacctcaggaaaagctgggagttcccattccatcctggcagtttccctacagctcagaggctgccatggagctggtgaggagcaggagcacgtgaaagctgccctggccaggatcaaaaaacccatgcagtgagcccctg ccctaggagacgccatacaagaaggagtcacattgaggatgtgctacacaccatgccacggggcccacaggaggcagg gtgtggctgatgctgactaggatgagtgtggggtgtggtggggagagaaaactgcagaagcaggtggagccaggctcttg aggtcttattcaggctccgttgcagtgtagagtaagcgtcagttttgcttagtaacaggagtcactttcatgaggcagg tggggcatgggaagtgctgtgcagggaaacccccagtgcacccacgcctccagggggcagccacagggagaatttcctta ctacctccagggtggccacccaccgcacctttggaactccttaccaaatttgcaggagcccgtctggttgaagagcag 25 gcccatggggatattccagcctgcagtcctgtccacggcggtgtggcaggacttcttgcctttcacagagttccaggtaa ggctagtgtctgatctcctaaccaccgccacagcaagatatcctggcataacagatgacagaaaaacaagtcttaacctc Caggaggcctggcacatggattccagtggagctgtctacagcccaggccaaaacaggccaagaagcaacaccaggcaatg attccctcaaagaactggcctttttaggtagaccgagaaagcataagctgccttatgttaaggtgagattgatgaaa taaaacagtaagaaaagctgattattttagtgattacaggggactgtcttcaaccagccacacaatgtccctgagttaca 30 aaccagcaatgcatctctcagtgtaagcttctacagcaacaacactataaacaacaagagagaccccaacagtgcataa cccagggactgccctgagctgagtctgaacccaccctgcactggttgaactcaacatggttgccgttgtcctcctgagag gtgcacagagcactgggacacgagtcccaggtcacgaggacccggggtcaagaccaggatctaccacagtattacctatg tetgtttttttacagttcctgccacttcctcttccagcaacaagaacttatccttgaccctgaaagtggctaatgccaa ctcaccttccacaggtctattccacacagttaggatcagggtcactgctttgttgggattctgaaagaataaagacaagccacaacattattattattcaattcagatgtagtgagaagccacaaactcttaaatctcaatgatgcagaatcaaatccaaagagac cgtcccagcagttccatgcaggagaaatgcgtctatatgttcaacaaaagacatggcacagagattcacagctgcattat tcaccacagccaccaactggaaactactcaaatgcccatccacactcaaatgatgaataatcacagtagactcacacagc gacgagactgaacagtctacaactacacacttaggtggatgaaaagcataacgatgagcaagagaaaccagacataaaaa aacacatgctgtgtaattcctttaacatgaagtttaaaacataggcaaacttagatctgcgaccttagaagccaggagag ccgagagcatggactgtacagtgtgtaaagtgccatgagttgtacatttatgtgcacttttctgtttgtatgttataatt acacggcccctttcatttcttctttccctgattctcccttttgaatgtatctgttcatcataatgtttcacctgcattca ${\tt ccgaatgggattactcatagccccactcccatgacccagagggaatataccagaggatgctaactccacttactgtagtt}$ gaatggttttctgtcaggtgaccagtgaaacagcagaaagagatggactattcaaactgagcagccagaggaaacaccgt aggacacagatgggaacagctggcctcatctaatctgaactcattagcactccactccaagcgctacacagaagttgtcc aacacataagetgaagtegteatattggeeeaccaccagaatgaacaagteeaggetacaacaagateatggaeteat cagtagtatgaaacttcctctttgacccagtaatatttttacaactatattaaaaatagagaagtggacaaagatttcta ctcaagaatgctcaccacagggttattgataatagcaaagtaagggacaaagaggaatggggcatgactaaactgagccatatcccaataaaagagtatcctggaagcatgtttaaaaaatgttttcgtccgagtgctgtggctcacacccgtaatccca 60 gcactttgggaggccgaagcaggaagattgcttgagcccaggagttcgagacgagcctgggcaacaaagcgagacctgt cgctacaataataataataataattatgcaggtgtggtggcgtatgcctgtagccccagctacttgggaagctgagatgg gaggatcacttgagcccaagagttccaggctgcagtgagatgtggtcgcaccactgcactccagcctgggtgacagatca agaatctgtctcttaaaaaaaaaaattaatgctttccaagagtaaatattcatgtggaagaatgcccattatacgctg tgggaaacccacagtaaactgctttttgaaactaaaatgctttctggccctgagcacacctctccaggcatccctgcctc acccaggococogtggcctctttgactgttgacttcactttaagcagatgccaggccctaggtcttccaccgggcccac cgcccgccctgtgatggagctccctaccagcaccagggcgatgcagtcctctgtggtggaggccgaggagcaggtcacg ctgccttcgctcaagccactccactggttacacttgcgcagctcctgctcgcccaccgcacaccacacaacaccacgcgcacg ccgggcagccacttcctcctcacctgccagagggaagaccgcaggtggctgggcaacctgagctttgccaggttgtccaa cctccccagagccagggtcctgcccagactctccctggaacaggagctacagtacatgtgtggacatgtggacccatacc ctetectectecactteteagetecaageceettetteaggtecacagagetecetgtgttteccacttetgttectttg gagaagttccctggcttctaatctatccattaatctttagagtcaggaggcgcctattgtctctgtctctgaggataaac gctccatgacccagagaccagtgacagtcccaagagatggcctaggggaccttgagcccaaccctgacttcccctaacgc getceatgacccagagaccagtgatagtcccaagagatggcounggstccaccccagcccccagtagagaaggag ccatagctgagttccccaccatggtgtccccaactaagttcaaggtctgggctctgggaagtgtgggtaaatccaggccc ccggattcatccaggaggggtcctggctatctttgttcatgttcatgtttctcacttaataggaggcaaactgatttttc cagtgaagtagccggagccaaggtacagcccagaatctatcctcgggggcaccctcgaaaacccaatggcagagtccttg

aacagcagatctttctgcccactaggggagccaaagagctggaatttcggtgacttgtcctttccaaacttttcctaatt aagaaaaaatagaattatggtgtcaatggtaaatagggaggaaacaaaaaaatgatgttaaaaaagagtatctggagctt tgggatcattctaactgagagcaggagcctcggttgagaccctcctgcagagggacttgtgccatctcggagacccaagc tcagctatggctcattctttgaagagttgctgaggtccaagcaccttagggccctgagaagattgcatcgaccacccct gcttctgctcccatcataagacgctgtcagcccgtgtgacagaagagtttcattgcttctgctgtccacagtacagcctg ggcaagcagcccaatgcattagtgtgctatcctgcagcaaagctacaggacttctggagtggcagaagtcagggaagtaa gaaaccttgctccctgccccccatatccaagcaagtggggaggaccgtgggtgaagatacctgtgcctggcggagaagat tccagatggcatcctccttgccattcacacttcgtgccacaacggcatgagaagggacccgggccagatggcagtctttg aacttgtccactggcttccgagtgttgtctgggcagagtaactcatactcgtccctttcagcctcgtctgacaggtcctc tgcagggaaggtgaggtgggagggagtctagataagccgactccagcagtaacctcgagctatagttccccttctcccta tagaattttgagettggggagatagetgaeaaaaetgagggteagaaaggeaggggtttgeteeagaaeaeteagaaagg taaaggtagtgccccaaaagcctcagggggcagccgaggtgtgatcctcatcctaaatcacttaggccaccctggggttc ccgtgcagctgctgctggcaggccagagaggccaaaccagaccgtctgtttctgcggcatctctgcctggaaaagtca ctttgcagagacaagctcagggggccaccaagggttgctcccttactcacatctctgggaagaataaaaatgacaaaaat tatgaatgagttcaggcaaatgtggaatatcatatataagttgcttcagaatgtgtaaagtgaaaaaaatcttgcccgag tcattttatgagattagtacaaccttgatgtcaaaatcagaaaaagtataggagggaagaattaaaagtttattttactt $\verb|atgaaggtttaccagtgtattccattaacaaaagaatggctgaacatcaaaaaaactaaagtaatctgcatttaatggca|$ 20 cccagcctggaatgcagtggtgcgatctcagctcactgcatctccatctcctggagtcaagagattctctttgcctcagc ctcccaagtagctgggaccacaagcgcacgccaccaggccagctaatttttgtatttttaatagagatggggtttcacc atgttggccaggctggtctcgaactcctgacctcatgtgatccacccgcctcagtctcccaaagtgctgggattacaggg gtgagacaccacgcctggccataagttattggcttgataaatgccattaatctacagcaaaaaccttactaaaagaagaa tcatctacaaaaaaccaatgaaaccaacagaaactaataaaactactcagaggagtaacaagttataagaggaacctaata aaaatcagatgttatcctcattaacaataaccaaatagaaaccaatatggactataagatgttacaatagcaactaaaa cattaagtagctaataattagcctcccacaaagacacatcagacccacaaaggaaaaattttagttctatcaaagaaact aaaaagaggtgtgatcaaatgggggagatttagcatcaccatggactggacaacttaatgttataaatatgctgattttt catggaacaatttaaattcagtacaattcgaatcaaaattaaagtatgattttttccagaaattcaacaaaataattctg teteactggetetetetetetetetecaccagatagtaagacceattggtaagccacagtaacaaaagcagaaaaaatge aaatacaccaatgaaataaaatagctcagaaactggtccacttggatatatacaaacttggtgtagaattggcttcacat atggcagaaaaatatactttttttattgtaaggtaaattgcctcactgtaaaggggataaaatgctaaagccaaatcta tatctgactttctaggtagagcacatataaatagatgaggaaggggatcttcaaatcttattttaggaaataattatgat ttgggtgtgaagaagggcatctttgaaatatctcaaaactacaaaccaacaaggtgaggcttgtggatttgaccttatca atatcaaggatttttgatcaacagagactaccgttgtcagatttttgactgagaagaggttttactaaagtttaaaatca gcaatagtttgatacctagatagaaggaacttctgtccttgaatcaaaatcatgcagaaacaaggtgtgaaactcaattt gcatgaaatgtagtgagcttatgtccactagtcctgggtgcagtgtgtttagcctctacatactcatcaactgctttatt ataagtocaggaggacgotgtocagcaggtaagtaaggaacacaggtgaaggtatcagtcqtqtggctqcatqtqqtaq aggaaaagagagcacaacctctgtccatcactatggtgacagagaagtaaaaggtggatgtattccacggaacactcctc aactgttaggacccctgagctagacatgtatacaacaataccgataaacctctaaaacaaaatgctgagcagaaaacca agtagcaggatttctaatgctcactaaaacctctatgaacccagaaaccggaaacacaaaccagcacaatctgttctgca tgagcacatgtgtcttggaggactggaggacgcattgccaagcacctaggcatgggtgtctatgaggggaagagaaaggc agtaggcacaggaggtttgaagaaaactgatcatttaaaatatgaaagatcataaaatcagagctgtgccctgtaggaat cttgaaaatggtctgccatgaacttaggaatctaattagctcaaaggtcagagtcatgatcaagtaagataaaaggggtc agacacetgtgaaaagagaaaccateaggggtaageacaggcageeeteeccageeeteeetgtggaacagtageeetg gcactcagcatctatgggtttctactccctgcagggcagggctctgaagcttaatgagttcaggcaaatgtggaatatca tatataagttgcttcagaatgtgtaaagtgaaaaaaatcttgcccgagtcattttatgagattagtacaaccttgatgtc actaactcaatctcacagagtatttaaaaagctaatagattggaatgaaggtttaccagtgtattccattaacaaa 60 65 70 actaataaaactactcagaggagtaacaagttataagagcaacctacaaaaatcagatgttatcctcattaacaataacc aaatagaaaccaatatggactataagatgttacaatagcaactaaaaccattaagtagctaataattagcctcccacaaa gacacatcagacccacaaaggaaaaattttagttctatcaaagaaactaaaaagaggtgtgatcaaatgggggagattta gcatcaccatggactggacaacttaatgttataaatatgctgatttttcatggaacaatttaaattcagtacaattcgaa tcaaaattaaagtatgatttttttccagaaattcaacaaaataattctgaagttttagctgagtatatttgaaaaggaata 75 atagtaagacccattggtaagccacagtaacaaaagcagaaaaaatgcaaatacaccaatgaaataaaatagctcagaaa ctggtccacttggatatatacaaacttggtgtagaattggcttcacatatggcagaaaaaatatactttttttattgtaa ggtaaattgcctcactgtaaaggggataaaatgctaaagccaaatctatatctgactttctaggtagagcacatataaat agatgaggaaggggatcttcaaatcttattttaggaaataattatgatttgggtgtgaagaagggcatctttgaaatatc tcaaaactacaaaccaacaaggtgaggcttgtggatttgaccttatcaatatcaaggatttttgatcaacagagactacc ctgfccttgaatcaaaatcatgcagaaacaaggtgtgaaactcaatttaaaaagtagtcaaatgtcacaaaataagaaag

ggaagcccaaacggctagcaaatatgttgaaatgatcaaactcaccagctgtcagagaaatgaaaattaaaaataaaacg aactatetattgcattacaaccateatteggacaaaaagtatgaaagteaaaaatacttetaactgaagttgtggggaaa tgtctctttctctqqtggtcctgggtggatgtggggtgtgtctctgatggtcctqagtgaatqtgggtgtctctctt ctctagtggccctgggtggaatatagtagccctgtctctattggtcttgcatgaaatgtagtgagcttatgtccactagt cctgggtgcagtgtgttttagcctctacatactcatcaactgctttattataagtccaggaqqqacgctgtccagcaggta agtaaggaacacaggtgaaggtatcagtcgtgtggctgcatgtggtagaggaaaagagagcacaacctctgtccatcact atggtgacagagaagtaaaaggtggatgtattccacggaacactcctcaactgttaggacccctgagctagacatgtata caacaataccgataaacctctaaaacaaaatgctgagcagaaaacccaagtagcaggatttctaatgctcactaaaacct ctatgaacccagaaaccggaaacacaaaccagcacaatctgttotgcatgagcacatgtgtcttggaggactggaggacg atttaaaatatgaaagatcataaaatcagagctgtgccctgtaggaatcttgaaaatggtctgccatgaacttaggaatc taattageteaaaggteagagteatgateaagtaagataaaaggggteagtaceeaeggeteattaceetgetettacea aacactgtgctctctctgataaaagccacgtctccagccccgtctctcagacacctgtgaaaagagaaaccatcaggggt aagcacaggcagccctccccagcccctccctgtggaacagtagccctggcactcagcatctatgggtttctactccctgc agggcagggctctgaagctt (SEQ ID NO:12209) cctctttcaccctgtctaggttgccagcaatcccacgggcctcctgacgctgcccctggggccacaggtccctcgagtg ctggaaggatgaaggattcctgcatcactgtgatggccatggcgctgctgttctgggttcttttttcttcgcgccggcctcg agetacaaeetggaegtgeggggegegeggagetteteeeceaeegegegegggaggeaetttggataeegegteetgea ggtcggaaacggggtcatcgtgggagctccaggggaggggaacagcacaggaagcctctatcagtgccagtcgggcacag gacactgoctgocagtcaccctgagaggttccaactatacctccaagtacttgggaatgaccttggcaacagaccccaca gatggaagcattttggcctgtgaccctgggctgtctcgaacgtgtgaccagaacacctatctgagtggcctgtgttacctcttccgccagaatctgcagggtcccatgctgcaggggccctggtttcaggaatgtatcaagggcaacgtagacctgg tatttctgtttgatggttcgatgagcttgcagccagatgaatttcagaaaattctggacttcatgaaggatgtgatgaagaaaattcagcaacacttcgtaccagtttgctgctgttcagttttccacaagctacaaaacagaatttgatttctcagatta tgttaaatggaaggacctgatgctctgctgaagcatgtaaagcacatgttgctgttgaccaatacctttggtgccatca 30 agaaqctgaaagatctattcactgagctqcagaagaagatctatgtcattgagggcacaaqcaaacaggacctgacttcc ttcaacatggagctgtcctccagcggcatcagtgctgacctcagcaggggccatgcagtcgtgggggcagtaggagccaa ggactgggctggggctttcttgacctgaaggcagacctgcaggatgacatttattgggaatgaaccattgacaccag aagtgagagcaggctatttgggttacaccgtgacctggctgccctcccggcaaaagacttcgttgctggcctcgggagcc cctcgataccagcacatgggccgagtgctgttgctattccaagagccacagggcgaggacactggagccaggtccagacaat ccatgggacccagattggctcttatttcggtggggagctgtggggcgtcgacgtggaccaagatgggagacagagctgc tgctgattggtgcccactgttctatggggagcagagggcgggtgtttatctaccagagaagacagttggggttt gaagaagteteagagetgeagggggaeeeeggetaeeeactegggeggtttggagaageeateaetgetetgaeagaeat caacggcgatgggctggtagacgtggctgtgggggcccctctggaggagcagggggctgtgtacatcttcaatgggaggc acggggggcttagtccccagccaagtcagcggatagaagggacccaagtgctctcaggaattcagtggtttggacgctcc atccatggggtgaaggaccttgaaggggatggcttggcagatgtggctgtgggggctgagagccagatgatcgtgctgag ctcccggcccgtggtggatatggtcacctgatgtccttctctccagctgagatcccagtgcatgaagtggagtgctcctattcaaccagtaacaagatgaaagagttaatatcacaatctgtttccagatcaagtctctctacccccagttccaa ttgccagcctctctgtggagctgagcctgagtaacttggaagaagatgcttactgggtccagctggacctgcacttcccc ccgggactctccttccgcaaggtggagatgctgaagcccatagccagatacctgtgagctgcgaggagcttcctgaaga gtccaggettctgtccagggcattatettgcaatgtgageteteccatettcaaagcaggecaeteggttgetetgcaga tgatgtttaatacactggtaaacagctcctggggggactcggttgaattgcacgccaatgtgacctgtaacaatgaggac tcagacctcctggaggacaactcagccactaccatcatccccatcctgtaccccatcaacatcctcatccaggaccaaga agactccacactctatgtcagtttcacccccaaaggccccaagatccaccaagtcaagcacatgtaccaggtgaggatcc 55 agecttecatecaegaecaeaeataeceaecetggaggetgtggttgggtgceaeageeteecagegaggggeecate acacaccagtggagcgtgcagatggagcctcccgtgccctgccactatgaggatctggagaggctcccggatgcagctga ttccacctctatggcagcaacgcctccctggcccaggttgtcatgaaggttgacgtggtgtatgagaagcagatgctcta aacggaacctgaaggagaagatggaggctggcagaggtgtcccgaatggaatccctgcagaagactctgagcagctggca tetgggcaagaggetgggateceggetgeetgaageeetteatgagaaggaetetgagagtggtggtggcaaggaetg tectttgeaggeteataggaagaeetgetgagggaceageeaagagggetgeaaaagtgagggettgteattaceagae ggtteaceageetetettggtteetteettggaagagaatgtetgatetaaatgtggagaaactgtagteteaggaeeta gggatgttctggccctcacccctgccCtgggatgtccacagatgcctccacccccagaacctgtccttgcacactcccc tgcactggagtccagtctcttctgctggcagaaagcaaatgtgacctgtgtcactacgtgactgtggcacacgccttgtt cttggccaaagaccaaattccttggcatgccttccagcaccctgcaaaatgagaccctcgtggccttccccagcctcttc 70 cacacacttggttgggtcctcacatctttcacacttccaccaccctgcactactccctcaaagcacacgtcatgtttctt catccggcagcctggatgttttttccctgtttaatgattgacgtacttagcagctatctctcagtgaactgtgagggtaa aggctatacttgtcttgttcaccttgggatgacgccgcatgatatgtcagggggtgggacatctagtaggtgcttgacat 75 aatttcactgaattaatgacagagccagtgggaagatacagaaaaagagggccggggctgggcgcggtggttcacgcctg taatcccagcactttgggaggccaaggagggtggatcacctgaggtcaggagttagaggccagcctggcgaaaccccatc tctactaaaaatacaaaatccaggcgtggtggcacacacctgtagtcccagctactcaggaggttgaggtaggagaattg cttgaacctgggaggtggaggttgcagtgagccaagattgcgccattgcactccagcctgggcaacacagcgagactccg tctcaaggaaaaataaaaataaaaagogggcacgggacatccccacccttggaggctgtcttctcaggctctgc cctgccctagctccacaccctctcccaggacccatcacgcctgtgcagtggcccccacagaaagactgagctcaaggtgg gaaccacgtctgctaacttggagccccagtgccaagcacagtgcctgcatgtatttatccaataaatgtgaaattctgtc caaaaaaaaaaaa (SEQ ID NO:12210)

ggatccagaagggtcattcaatcagttctcagtcttatcaggtctaagttcctttcttatcaggtcctaaaggcctaatc ttctcccttttattccaattcaacaattttcatggctttttgtgttttgttttgtctggacatatttacagaaaattacc tgaagagttccaacctgaggcctcctcatggatgggtcaaacgtgacatcatttgttgttgaggaacccacgaacatctcaactggcaggaacgcctcagtcgggaatgcacatcggcaaatccccatcgtgcactgggtcattatgagcatctccccagtggggttgttgttgagaatgggattctccctcggttcctgtgcttccggatgagaagaaatcccttcactgtctacatcacc caccigtetategeagacateteactgetettetgtatttteatettgtetategactatgetetagattatgagettte ttctggccattactacacaattgtcacattatcagtgacttttctgtttggctacaacacgggcctctatctgctgacgg ccattagtgtgggagaggtgcctgtcagtcctttaccccatctggtaccgatgccatcgcccaagtaccagtcggcattg gtctgtgcccttctgtgggctctttcttgcttggtgaccaccatggagtatgtcatgtgcatcgacagagaagaagaaga tcacteteggaatgactgeegageagteateatetttatageeateetgagetteetggtetteaegeeeeteatgetgg
tgteeageaceatettggtegtgaagateeggaagaaeaegtgggetteeeatteeteeaagetttaeatagteateatg gtcaccatcatttggtcgtgaagatccggaagaacacgtgggcttcccattcctcaagctttacatagtcatcatg
gtcaccatcattatattcctcatcttcgctatgcccatgagactcctttacctgctgtactatgagtattggtcgactt
tgggaacctacaccactttccctgctcttctccacaatcaacagtagcgccaaccctttcatttacttctttgtgggaa
gcagtaagaagaagaagaattcaaggagtccttaaaagttgttctgaccagggcttcaaagatgaaatgcaacctcggcgc
cagaaagacaattgtaatacggtcacagttgagactgtcgtctaagaactgtgagggaagttgtggataaaaatggtgga
acacaggtcatttttagttgtgcttggaatatgacttaagtatccctaaatgtgatacagaagaacatctcatcccat
atgcatgagatactaattaatgatgaaa (SEQ ID No:12211) 20 tacaatattaaacccattgtcccaggcactccctctccttactgcttatggcacttcatgtattaaaaaatgacagtggc aagatgaaatgattttcaaaatgccattaggaaagctcaggccagaactggaaatgggtcccgcacagggcactcggcca ggatccagaagggtcattcaatcagttctcagtcttatcaggtctaagttcctttcttatcaggtcctaaaggcctaatc 25 tgaagagttccaacctgaggcctcctcatggatgggtcaaacgtgacatcatttgttgttgaggaacccacgaacatctc aactggcaggaacgcctcagtcgggaatgcacatcggcaaatccecatcgtgcactgggtcattatgagcatctccccag tggggtttgttgagaatgggatteteetetggtteetgtgetteeggatgagaagaaateeetteaetgtetaeateaee 30 cacctgtctatcgcagacatctcactgctcttctgtattttcatcttgtctatcgactatgctttagattatgagetttc ttctggccattactacacaattgtcacattatcagtgacttttctgtttggctacaacacgggcctctatctgctgaegg ccattagtgtggagaggtgcctgtcagtcctttaccccatctggtaccgatgccatcgccccaagtaccagtcggcattg gtctgtgcccttctgtgggctctttcttgcttggtgaccaccatggagtatgtcatgtgcatcgacagagaagaagaag 35 gcagtaagaagaagagattcaaggagtccttaaaagttgttctgaccagggctttcaaagatgaaatgcaacctcggcgc caqaaaqacaattqtaatacqqtcacaqttqaqactqtcqtctaaqaactqtqaqqqaaqttqtqqqataaaaatggtqga acacaggtcatttttagtttgtgcttggaatatgacttaagtatctcctaaatgtgatacagaagaacatctcatcccat atgcatgagatactaattaatgatgaaa (SEQ ID NO:12213) ggatccagaagggtcattcaatcagttctcagtcttatcaggtctaagttcctttcttatcaggtcctaaaggcctaatc ttctcccttttattccaattcaacaattttcatggctttttgtgttttgttttgttctggacatatttacagaaaattacc tgaagagttccaacctgaggcctcctcatggatgggtcaaacgtgacatcatttgttgttgaggaacccacgaacatctc aactggcaggaacgcctcagtcgggaatgcacatcggcaatccccatcgtgcactgggtcattatgagcatctccccag tggggtttgttgagaatgggattetectetggtteetgtgetteeggatgagaagaaateeetteaetgtetacateaee cacctgtctatcgcagacatctcactgctcttctgtattttcatcttgtctatcgactatgctttagattatgagctttc ttctggccattactacacaattgtcacattatcagtgacttttctgtttggctacaacacgggcctctatctgctgacgg ccattagtgtggagaggtgcctgtcagtcctttaccccatctggtaccgatgccatcgccccaagtaccagtcggcattg gtctgtgcccttctgtgggctctttcttgcttggtgaccaccatggagtatgtcatgtgcatcgacagagaagaagaagagagtcactctctggaatgactgccgagcagtcatcatcttatagccatcctgagcttcctggtcttcacgcccctcatgctgg tgtccagcaccatcttggtcgtgaagatccggaagaacacgtgggcttcccattcctccaagctttacatagtcatcatg gtcaccatcattatattcctcatcttcgctatgcccatgagactcctttacctgctgtactatgagtattggtcgacctt tgggaacctacaccacatttccctgctcttctccacaatcaacagtagcgccaaccctttcatttacttctttgtggaac
gcagtaagaagaagagattcaaggagtccttaaaagttgttctgaccagggctttcaaagatgaaatgcaacctcggcgc
cagaaagacaattgtaatacggtcacagttgagactgtcgtctaagaactgtgagggaagttgtgggataaaaatggtgg 55 acacaggtcatttttagtttgtcttggaatatgacttaagtatctcctaaatgtgatacagaagaacatctcatcccat 60 tgattgttcacactttaagcaatattggtacaatattaaacccattgtcccaggcactccctctccttactgcttatggc acttcatgtattaaaaaatgacagtggcagcattgcccagacatgcgttttgtcatcaagtcttaatgcagtccacctgg tccctcaggcaaatgaatggaggcacagaagatgaaatgattttcaaaatgccattaggaaagctcaggccagaactgga aatgggtcccgcacagggcactcggccactcttgcctggccatctcctttttggcactaagcacacaatgatatagaatg aatggttatcactggggatccggatccagaagggtcattcaatcagttctcagtcttatcaggtctaagttcctttctta tgaggaacccacgaacatctcaactggcaggaacgcctcagtcgggaatgcacatcggcaaatccccatcgtgcactggg tcattatgagcatctccccagtggggtttgttgagaatgggattctcctctggttcctgtgcttccggatgagaagaaat cccttcactgtctacatcacccacctgtctatcgcagacatctcactgctcttctgtattttcatcttgtctatcgacta tgctttagattatgagctttcttctggccattactacacaattgtcacattatcagtgacttttctgttttggctacaaca cgggcctctatctgctgacggccattagtgtgggagaggtgcctgtcagtcctttaccccatctggtaccgatgccatcgc catcgacagagaagaagagagtcactctcggaatgactgccgagcagtcatcatctttatagccatcctgagcttcctgg
tcttcacgcccctcatgctggtcccagcaccatcttggtcgtgaagatccggaagaacacgtgggcttcccattcttc
aagctttacatagtcatcatggtgtccagcaccatcttggtcgtgaagatccggaagaacacgtgggcttcccattcctc
aagctttacatagtcatcatggtcaccatcattatattcctcatcttcgctatgcccatgagactcctttacctgctgta
ctatgagtattggtcgacctttgggaacctacaccacatttccctgctcttctccacaatcaacagtagcgccaaccctt 75 teatttacttetttgtgggaagcagtaagaagaagatcatagagtcettaaaagttgttetcgaccagggetttcaa gatgaaatgcaacctcggcgccagaaagacaattgtaatacggtcacagttgagactgtcgtctaagaactgtgagggaa ጸበ gggcccagagaaagagctgtccccgggggccttggggacagggtgacagccacccagagatcatggagaagggacgtaag

ccacaatgccaggctcacacctgcagaggagggaagaagaagaagggctcacatcagcccagcgggggatgttacgccc aatgttcccagcaaggcaattttacttctatagaagggtgcatctcacagatggagcaatggcaagagcacacctgaaca agggaagggaaggggtttttatccctaaggcaggtagccctacagctgtgttgttcccctattggctagggttggacca caccgtctgagctaattgttactggctattttaaagagagcaggggtaagagccggattggcagggtaagtagtttggca ggaaggacggtcacagaacaggtgactcaggatgactcaggtcagagcaggtgaccagtggtgactcagttcggagcagg tgatagaagctaggagggggttgtttactgaaactaggggcaaggagacgaagagaacatgaaagttaaactttaagatg 10 aagaacaaagctgaacatactgatgcattggatctttggaggggatctcagaactcattgtacttaatttacaggctaaa accttagaagaggaatttattatatectacacaagactecagggaagcacatggeettggaetgaaggetggeatetgga ccaggctgggcctcaaggaagaaaaagattttcatttgtcagaggcggaagggagaggtggagggaacagcagcagcg gcccaggggcagggaagcacaggaccattagggagacacgagaaagcccatttgtctagaacagaggattcaagcagtgc accaaggaaaatgagggccaggccaatgtgctggagtggctttgttcttggctgagggttttgggtagtgccaaagcgta aggtaagccctgctttccagaagaatctagcagagtgtggagcccagatgggactggaaggcctgggaggggtcaggtgg taataaaattataaaaattagccgggcgtggtggtggtacctgtaatctcagctactcaggaggctgggtcaggagaat 20 cgcttgaacccaggaggcggaggttacagtgagctgagatagcaccattgcattccagcctggacaacaaaagcgagact ctgtctcaaaaaaaaaaattagccaggcgtggtggtggtggttgctctcgtcctcgggaggctgaggcatgagaatca ctccgggaggcagaggttgcaatgaaccaagatcacaccactgcactccagcctgggtgacagagccagaccctgtctaa aaaaaaaaaaaagacagaaggatgtcagcatctgatgctgcctgtcaccttgaccctgaggatgccagtcacagctccat taactgggacctaggaaaatgagtcatccttggtcatgcacatttcaaatggtggcttaatatggaagccacacttggga 25 tctgttgtctcctccagcatggtagaagatgcctgaaaagtaggggctggatcccatcccctgcctcactgggaaggcga ggtggtggggtggggtggggctcaggcttggggtcatgggacaaagcccaggctgaatgccgcccttccatctcctcc tootgagacaggggcagcagggcacactagtgtccaggagcagcttatgaggccccttcaccctccgatcctccaaaact aatcacgaggettegaccectgtggaccagatgeecagetagtggeettteteeageeeeteagatggeacagaactaca aaccccagcatgcactctggcctgaagtgcctggagagtgctggtgtaccccacctgcattctgggaactgtagtttccc tagtcccccatgctcccaccagggcatcaagctcttccctggccggctgaccctgcctcagccctagtctctctgctgac ctgcggccccgggaagcgtgcgtcactgaatgacagggtgggggtggaggcactggaaggcagcttcctgctcttttgtg 35 teccccacttgagtcatgggggtgtggggggttccaggaaattggggctggggaggggaagggataccctaatgtcagactc aaggacaaaaagtcactacatccttgctgggcctctatccccaagaacccaaaaggactcaagggtggggatccaggagt aggaaaaggccagggctctgctggagcaggcagcagagtggacgcacagtaacatgggcaacttgaagagcgtggcccag gagcctgggccaccctgcggcctggggctggggcttgggccttgggctgtgcggcaagcagggccc (SEQ ID NO:12215) ggatcccatgccctgcctcactgggaaggcgaggtggtggtggggtggggctcaggcttggggtcatgggacaaagc ccaggetgaatgeegeeetteeateteeeteeteetgagacaggggeageaggggeacaetagtgtgeaggageagettat gaggccccttcaccctccatcctccaaaactggcagaccccaccttcttggtgtgaccccagagctctgagcacagcccg tteetteegeetgeeggeececeacceaggeecaccecaaccttatectecactgetttteagaggagtetggecaacac taaacttteteteagtetetgaggtetegaaateacgaggettegaeeeetgtggaeeagatgeeeagetagtggeettt ctccagcccctcagatgacacagaactacaaaccccagcatgcactctggcctgaagtgcctggagagtgctggtgtacc 55 60 ccccctcctctcggtcccctcctttcctaaggaaaaggccagggcttgctggagcagcagagctgggcctcggcacacttgaagaacttgaagagcagagacttggcacactgggccttgggccaccctgcggcctggggctgggcttgggcttgggcttgggcttgggcttgggcttgggcttgggcttgggcttgggcttgggcttgggcttgggct gcggcaagcagggccagccagccccggccctgagcccagccgggcccagcatccctactcccaccagcgccagaacac aggtaagggccaggcagctaggagcaggtgggcaacaagggtggtgtcaaggcctgaagcctggggctgggaaggtctgg aacttgtagctgagtcgggagggccaggtcacaaatgcaaaagggctattaatgtgcatagaacaggacagtctgggagg ctcagaaaggagaccaggatcagagtcggcaggtgaagctgggagtaagggtgccagctatagaatctggccagggtttg aatgctgctctgccgccaggagctgtttgactttgagcaagttacttaatctctctgaacctccatttatataaaacgag atatggcaatacttactccatggggaagtaagtttctagctcacagcaagccttcaacagcagcgatgattatttagctg gagaagaaaggagctgacagcagtggttacaggagtgagaaagtggggtctcccagaagagggagagagttgggcaggaa actogggcccttggggtaagcaggctgagaagacagagccaccaggcttttttcccctgctccagccccctctcctcgtg ggaggcctggtggggtgccaggccgggggcaggctggggctgcaggctatgcagggaaggctgagggccct gctgctcaggcgcacccttggcctgagtccctcccttcctcctgccgctggtggctctgggaggaagtgataaggcctg cgaggettecetteacacatggggetgetgteaggaggggttgtgagtgeggagggaaateagagetgaggaateeetge agcagccctgcagcccaggaccctggtctataaacggaggcacagctcgcctctagctcctaaggcatggggaacgcca gaaggcatgcggcaggtgggctgtgagatcgccagtgctgtaacaggggcctccgggtgacatctgggaaggctgaaaag aaacaaacccttcctgatgaccctatccctggctcccaacagcccccgagctccccgctaacccagccccagagggg 80 ccaagttccctcgtgtgaagaactgggaggtggggagcatcacctatgacaccctcagcgcccaggcagcaggtaagg

gacttgggtgaccctcagcctccagccttacccccaaccctggctcaaacttttcccccatcccacccctgcaccccttt cctcctctccccgtcccacccctaaaccccacctcctgtccccctctaaacccctcctgtcccctctaaacc ctctccccatctcacccctgcacccctcttccctctcccacccctgcacccctcctcctccccgtcccacccttgcac tecegecetetecagegteccaceetacaceetectectetgececattecaceetgcaceetectectetge 10 cccgacccacccctgcacccctccctccctctcccccgtcccacccctgcatccctcctcctctgccccgtcccacccct teleccegteccatecetgeaccettecteceteteccegteccatecetgeaccetectectectectecateccae ccctgcacccctcctccctctgcccctaccccacctctgcacccctcctccttctccccatcccacccctgcacccctcc tecctatgecectaceccaceetgeaccetectecticteccateccacetetgeaccetecteceetetecctet 15 ttetteeeteteeeeateeeaceactgeaceeteeteeeteeetgtteeaceeetgeaceeeteeteeetgee ccaactcccatcccatccctgcacctgcctgtcctgacctttgcactccttcgacccaggatgggccctgcaccccaa 20 ccctcccgccttcccccagcacttgcacaaagcctggaggagggcctccctgtcccacacaacttcctgcttgtcccctt cccaccctttcctccccaggagcggctcccaggcccacgaacagcggcttcaagaggtggaagccgaggtggcagccac aggcacctaccagcttagggagagcgagctggtgttcggggctaagcaggcctggcgcaacgctccccgctgcgtgggcc ggatccagtggggaagctgcaggtgcggctggccagcgactgagaacccgggcgctaccaaaaggggagcggggtggc 25 ggggcagttcctaaggcttcccgggggctgggaggtcccaaactgtgggggagatccttgccttttcccttagagactgg aaaggtagggggactgccccaccttcagcacccaggggaacctcagcccagtagtgaagacctggttatcaggccctatg gtagtgccttggctggaggaggggaaagaagtctagacctgctgcaggggtgaggaagtctagacctgctgcaggggtga ggaagtetagaeetgetgeagggtgaggaagtetagaeetgetgegggggtgaggaagtetagaeetgetgegggggtg aggacagetgageggagtteeetgggeggtgetgteagtageaggageageeteetggaaaageeetggetgetgettet 30 ccccaagagagagaggcttctcccgccaggccagtccagtgcagcccttcacccacactgctaccccagttcccct gcttcggcccgcacctcctcacaccccagcccacagactcggggctggccttagttactggaacgcctgtgaccacag cactaagagaagcaagctgccccatgggggacttggtccccatgggccttggcctccttcaccatcactggccgccaaaga gtttgaaataaagccacgtgcccagtgaatcccaaaggaacctcaactaaaataaaaacaatcctatctgacacttgcct gaccetetaagteatteaaagetttageteaaettegateeatetgagetgeeatagtggaccecaeteagagetgegte 35 40 cctcggctggctcaggtgttcgatgcccgggactgcaggtctgcacaggaaatgttcacctacatctgcaaccacatcaa gtatgccaccaaccggggcaaccttcggtgagtgccccccaccatgccaggccccagccttcttccccaaggcagggaag gcggggctctgaccagctctttccccatgcgtgccagctcggccatcacagtgttcccgcagcgctgccctggccgagga gacttccgaatctggaacagccagctggtgcgctacgcgggctaccggcagcaggacggctctgtgcgggggggacccagc caacgtggagatcaccgaggtgggcaccgagggccacccatgagggtgtccccaaggtggagaatgaggaaaccagtggg agaaggctcgggggatccaggcaggaagaggggagcctcggtgagataaaggatgaaaaacaccaaaggaggggtgcctg catgaggctcagccccagaaccccctctggcccactccccacagctctgcattcagcacggctggaccccaggaaacggt 50 tgaggtgcccctggagcaccccacgtgagcaccaaagggattgactggggtgggatggagggccatccctgagcctctc aagaagggcctgcaagggggtgctgatcccacaccccaacaccccaggctggagtggtttgcagccctgggcctgcgct ggtacgcctcccggcagtgtccaacatgctgctggaaattgggggcctggagttccccgcagccccttcagtggctgg tacatgagcactgagatcggcacgaggaacctgtgtgaccctcaccgctacaacatcctggaggtgaggtgcgggatggg 55 60 ggtgtgtagggggtgtgtgtgggcttgtaggggtaggcgagtgtggggtttgtggggtgtgtataggggcgagtgtggagagtg taggtatgtgggtgtgagtgtggatgtgtgtaggcggtgagtgtgaaattgtggggtttgtgggggtggggtgggtgtgagt gtgtgggtttggggtggggtgtgggtgtgagtgtgggtgagggggcatggggatgggtgtgaacatgtagttgttct 65 ttcaggcataggacccatagctctagagctttcatcagattctcaaaggggaccttgactcggaaaaggttaagacccat tttagagatgagaaattaaagootggagctgaggagcgactggoocaaagtccctctotgctctgaggtgcttcgcaggc aaaaacctgaaccagcccctaggcagccaggcctcccaatggacaccactcacctcaccccttccagccatgtacggga aacagagatagtctccccaccccaccccgtgatcacctctgtccctaccgatgccacacacccttctgccccaggatgt ggctgtctgcatggacctggatacccggaccacctcgtccctgtggaaagacaaggcagcagtggaaatcaacgtggccg 70 tgctgcacagttaccaggtgcagaggcccagactggccaggaaggcaaagggtttgcatacgggggcagcagcggggg gatggaggaggcagccatttagaaactagggcaggatttggacaggagaagaagttccgtagtcccagtgccatggc gcacactggctgcggttcggggacagggcaggtactattccaggcgctgtcatctggtggcttactgtgtgccagggacc ttgctgtttactgcatgcccagtcatgctgattctcagggcatattggggtattgcagtttgtgggacccgctggatcctg gaaacaaataccaggatcaagggcacaccaggagtcgtagtttgaggaagccggggcctgctgagaatttctgtgggcta 75 aggccaggggggggctgccctgcagactgggcctggatcgtgccccccatctcgggcagcctcactcctgttttccatcag gagatggtcaactatttcctgtccccggccttccgctaccaggtgcccaccctaatggctctgccagcctgggcccagct cagacccctggaaggggagtgccgccaagggcaccggcatcaccaggaagaagacctttaaagaagtggccaagtgggtc

ccctgggagccccgctctcccacacaccctgggggccccactctccccacacaccctgggggaccctgcccagcag tgttctggacctaccactcagtatcccaaaaccctgttgtgagggggttggacccttgcctggggaggccctgcctctgt gcacccgggacaccctcacaccttcctctcccgcagcgccgtgaagatctccgcctcgctcatgggcacggtgatggcga 10 cacacacacacacacacacacacacacacgccaggatggaaagggagatgctaagagacccctggagcctgaaacccc acacaacgtacgctcccagcccacccatgtggctgcctccctgcaagcacatttgcttaactgcgcgtccccaagtcatt tocattatoagtgcaagtttttaatacaaggaaggcacatootggotgaccaagaggttagactgtgctcgggcactgac aagaaaaacagggatacgtcactgagggcggcttctaggatgcgggtaatgtttcttaatgggatactggttacacaggt gtgttcagtttgtaaaaatccacagagctgtacatttacaacatgtacaacactattccagcattttattttatttgtt tatttattttgataacctatttacgttgcccaggctggccttgaactcctagcctcaagagatcctcctgccgcaggctc ctttttcaaaagaagaaattgagcgctgtttagatgccaacatagattaaataacttcactttttaaaaagaaacacaaa gctagagtaccatcattgaattccttctcttgcaagcttaggtatctctgaggtgccccaggctaggctcatttctgagt 20 tgagacagggtctcactttgtggcccaggctggagtgcagtacaatcacggctcactgcagcctcaacctcctagac tcaagcaatcctcccacttcaacctcccaagtagttgggactacaggcgcatgccatgatgcctagctaatttttgtatt ttttatagagatggggtttcgccatgttgcccaggctggtctctaactcctgggttcaagcaatccacctgcctcggcct cccaaagtgctgcgattatagacgtgagccactgcacctggcccgcagtatcttaagcaagttggaatctcgtgaaaccc 25 tttagcataaaggtgtatagaacccatataacctacagccttcacaaggcatagcacattttcaccaccctggaaagttc 30 aattaqctqqqcatqqtqqcqcacqcctataqtcctaqctactcaggaqqctagqcqqqqaqaattqcttqaacctgggaq gtggaggttgcagtgagccgagatcacgccactgcactccagcctgggtgacagagcaagaattctacttaaaataaaat 35 attttatcccaaatttttaacaaatctaggaatacagctcacagaaaatggggtatattcactaaaaataaggaatattt atagcaaatttgtttgtaataccccacactggaaacaattcaaatgaccatcgacaaatactgataaattgtggtatatt caagtgccatatcgcactaagtgtgaacgaaacaacaacaacacacagtgcaggtgaatctgaaaaaatgtgaagaga agaaaaagccagaccaaagaatacatactgtactacagggttcactttatataaagttcagaaacaggcagaactaatcc 40 ggagtgcaatggcgtgatctcggctcactgcaacctccgcctcccggttcaagcgattctcctgcctcagcctcccgag tagotgggattacaggtgcccgccaccatggccagctaattttttgtgtttttagtagagacgcgtttcaccatgttggcc aggotggtcttgaatcoctgacctcagctcccaaagtgctgggattacaggcgtgagccaccacgccacggggtaatgttccagtggtgtggagcaccacaggccacgggtaatgttccagtggtggagaaacttacagagttgtacatttacaacatgtgt gcacctctggacttgtgttgcacgttgacaaaacattcaaaaatgaaattcaaatcgttcttgctaactctggcgcactt tgatgccacttcttcatggcagcacaaacaaggccatggtcttctgaggagggcaacctgcacaatgtctgctagtgacc aggacactgctgaaggaactgagagtttgtccacccatgaaatccactaaaacaggaaagattttgctctagccgttgtt 50 aqccaqqaqtqaqqaaaqaqctqtqccctcccctgcagctgcgaggacgatctgcctgccccaacaagtggggattcagc aactccacttctaaggattacccagctgaagcatttaaaagtgggagcaaggcacacgtacaagggcgtttgagagagca cctqttcccaqaccaccqaqctqcccttcagtctcagtgaagtacaatgtagccactaaaaagactgaggtcatgttttg qaaagtccaggccggaggatcgcttgagcccaggagttcaaggccagactgaacaacacagcgagactccatctcttcag aaaatttaaaaattaaccaagagtggtggcacgcacctatagatctagctactaggaaggcagaaaaatcccttaagccc 55 aggagtttgaggttacagtgaatgatgatggagccactgcaccccaacctgggcgacagagcaagacccatatctaaaaa caatactactacttacgtcaatattgttgtattgacctggagggatgtctgcaataaattattgattaaaaccaaggaag tacagtatggtaccacttttacttaaaaaaaaactataaatatgcacgtgcacgtaagttcaaggaaaaagggctggaag gttaacacctgtgaatggcgcatatgcccggaggaagatgggtggtctttgtcttatcactttacacatttctgtaatg tcatttttcaaaaacatcagatcgcttttgaaattttcaaaacaaataaaaattaagtgacaaatcaataataatgagga 60 tcagctggtacagttttaaacttctatgtagtttgaaatgaaacaaaactaaccetgatgcaaacactcccctcgccaga gctttgcagctgccctgatggagatgtccggcccctacaacagctcccctcggccggaacagcacaagtgagttgggtga 70 głggtacgatctcggcttactgcaacctccgcctcccgggttcaagagattctcccatggcgtgaacctgggaggtggag tattctcctgtctcagcctcctgagtagctgggattacaggcaccaccaccacgcccagctaatttttgtattttagt agagacggtgtttcactatgttggccaggctggtctcgagctcctgacctcacaatcctcccacctccgcctcccaaagt gaagtettgeeegetetegeageeaggaaceaaaagteetggtaggactgagaacagtteetaggetgeeateagetggg cctggtgattcaaatccacccaggtggctaaactacaaataaaccgtacccatctactgaacataaactaaataccacta ttaaggatacttaaaataaacacacttagtgaacccattatgaactgaaagtgtctttcacccttcccacgtttcctaaa tcccctgagtcatctaagtattcttcaatccaaaatgaactatatttcctttggtgcaatctccagaaaccacagatcca

 ${\tt tccttgctccaccctgcatggtgagaatggtggagcaggaaaggcaaaggggacctgatggagtgtctctcctgcc}$ agggctccctccttccggctgccacccgatcccagcttgccctgcatcctggtgggtccaggcactggcattgccccctt ccggggattctggcaggagcggctgcatgacattgagagcaaaggtgaggctggtgactaaaggactgcctgaagggagt cacacaatctagggacagaggggtggggctggaaggcaggaaataggaaagagagggcaggaaacaaagtccacaaagct gaaaagacgctcatgagaccaaggggagggcaggtaccaaaggcaagggctgggccctgagcttctggcttcctggtgcc tggtacatagtaggtgttgactggattgaggacaaaggaaaatagaattttcaaagggattagggctaagactcaaagaa gaactgcccaaggtggattcttgactgtgccagagctgaccgaggtctgtccaagacctaaggatgctacaaggtgttca tattgagcatggggtgcccagggtggtctgtcaatcaaagaagaggctgtgactgggaggaggttataagtatggga gggctgcagccactcccatgactttggtgttcqgctgccgatgctcccaacttgaccatctctaccgcgacgaggtgca gaacgcccagcagcgcggggtgtttggccgagtcctcaccgccttctcccgggaacctgacaaccccaaggtgtgagacc tectecegecectgecectttggetetgecetttgacaaegececagggeaegeaggeceaecaggecegete 20 gggttcctgctaaggtctccgagtcgggttctgatccactgtgctcttttccgacaggatcagcaacgctaccacgaaga cattttcgggctcacgctgcgcacccaggaggtgacaagccgcatacgcacccagagcttttccttgcaggagcgtcagt tgcggggcgcagtgccctgggcgttcgacctcccggctcagacaccaacagcccctgagagccgcctggctttcccttc cagttccgggagagcggctgcccgactcaggtccgcccgaccaggatcagcccgctcctcccctcttgaggtggtgcct cctgttgcctcgggcctgggtccgccttaatctggaaggcccctcccagcagcggtaccccaggggcctactgccacccgc ttcctgtttcttagtcgaatgttagattcctcttgcctctctcaggagtatcttacctgtaaagtctaatctctaaatca agtatttattattgaagatttaccataagggactgtgccagatgttaggagaactactaaagtgcctaccccagctcatg tggattacagttttttttttttttttttttttttttgaaacggagtctccctctgccgccgggctggagtgcagtggcg tgateteageteactgeaacetecaceceacaagtteaagtgatteteetgeeteageeteceaagtagttgggattaea ggtgcctgccaccgcgcccggctaggttttgtatttttagtaaagacggggtttcaccatcttggccaggctggtcttga act cct gac ctcg tgat cca accg cct cag cct ccca a agt gct gg gat ta cag gt gt gag ct act gcac ccg gcg tg gag act acc gg tg tg gag ct act gc gag tg ta cag gcg tg gag act acc gg tg tg gag ct acc gg tg tg gag ta cag gcg tg tg gag ta cag gcg ta cag gcg tg tg gag ta cag gcg tg tg gag ta cag gcg ta cag gcg tg tg gag ta cag gcg ta cagttacaattataaaatgacaagatttctgttttaacctgtgcagttgtggggtatgtgggggaaaggggtcattcttta tcaggctcgtaatcgagaaggcaggtgcagcactcagctgccaggagtggggcctgccagaaacaagagtcacagagatg tgcaacagccatgagcaagctt (SEQ ID NO:12216) cagagtggacgcacagtaacatgggcaacttgaagagcgtggcccaggagcctgggccaccctgcggcctggggctgggg ctgggccttgggctgtgcggcaagcagggccagccacccggcccctgagcccagccgggcccagcatccctactccc accagegecagaacacagececegagetececgetaacccagececeagaggggeccaagttecetegtgtgaagaact gggaggtgggagcatcacctatgacacctcagcgcccaggcgcagcaggatgggccctgcaccaagacgctgctgc ggctccctggtatttccacggaaactacagggccggccctcccccggccccccggcccctgagcagctgctgagtcaggc ccgggacttcatcaaccagtactacagctccattaagaggagcgctcccaggcccacgaacagcggcttcaagaggtgg gctccccgctgcgtgggccggatccagtgggggaagctgcaggtgttcgatgcccgggactgcaggtctgcacaggaaat gttcacctacatctgcaaccacatcaagtatgccaccaaccggggcaaccttcgctcggccatcacagtgttcccgcagc gctgccotggccgaggagacttccgaatotggaacagccagctggtgcgctacggggctaccggcagcaggacggctct gtgcggggggacccagccaacgtggagatcaccgagctctgcattcagcacggctggaccccaggaaacggtcgcttcga ccctggagcaccccacgctggagtggtttgcagccctgggcctgcgctggtacgccctcccggcagtgtccaacatgctg ctggaaattgggggcctggagttccccgcagccccttcagtggctggtacatgagcactgagatcggcacgaggaacct gtgtgaccctcaccgctacaacatectggaggatgtggctgtctgcatggacctggatacccggaccacctcgtccctgt ggaaagacaaggcagcagtggaaatcaacgtggccgtgctgcacagttaccagctagccaaagtcaccatcgtggaccac gccgagggcctgcagttgctgccaggtctgatccacgtgcacaggcggaagatgttccaggctacaatccgctcagtgga aaacctgcaaagcagcaagtccacgagggccaccatcctggtgcgcctggacaccggaggccaggaggggctgcagtacc agccgggggaccacataggtgtctgcccgccaaccggcccggccttgtggaggcgctgctgagccgcgtggaggacccg ccggcgcccactgagcccgtggcagtagagcagctggagaagggcagccctggtggccctccccccggctgggtgcggga 70 tgcggctgctcagcaccttggcagaagagcccagggaacagcaggagctggaggccctcagccaggatccccgacgctac getecteacecagetgeetetgetecageeceggtaetaeteagteageteggeacecageacecaegagagagatee acctcactgtagctgtgctggcatacaggactcaggatgggctgggcccccttgcactatggagtctgctccacgtggcta 75 agccagctcaagcccggagaccctgtgccctgcttcatccggggggctcccttccggctgccacccgatcccagctt gccctgcattctggtgggtccaggcactggcattgcccccttccggggattctggcaggagcggctgcatgacattgaga gcaaagggctgcagcccactcccatgactttggtgttcggctgccgatgctcccaacttgaccatctctaccgcgacgag gtgcagaacgcccagcagcgcggggtgtttggccgagtcctcaccgccttctcccgggaacctgacaaccccaagaccta cgtgcaggacatcctgaggacggagctggctgcggaggtgcaccgcgtgctgtgctcgagcggggccacatgtttgtct gcggcgatgttaccatggcaaccaacgtcctgcagaccgtgcagcgcatcctggcgacggagggcgacatggagctggac gaggccggcgacgtcatcggcgtgctgcgggatcagcaacgctaccacgaagacattttcgggctcacgctgcgcaccca ggaggtgacaagccgcatacgcacccagagcttttccttgcaggagcgtcagttgcggggcgcagtgccctgggcgttcg

acceteccqqctcaqacaccaacaqcccctqaqaqccqcctqqctttcccttccaqttccqqqaqaqcqqctqccqact

caggtccgcc (SEQ ID NO:12217) ccaggctgggcctcaaggaagaaaaagattttcatttgtcagaggcggaagggagaggtggagggaacagcacagcagcg gcccagggcagggaagcacaggaccattagggagacacgagaaagcccatttgtctagaacagaggattcaagcagtgc accaaggaaaatgagggccaggccaatgtgctggagtggctttgttcttggctgagggttttgggagtgccaaagcgta aggtaagccctgctttccagaagaatctagcagagtgtgggagcccagatgggaactggaaggcctgggaggggtcaggtgg 20 cattgggaggtcgaggtggatcacctgaggtcaggagttcgagaccagcctggtcaacatggtgaaaccctgtctc taataaaattataaaaattagccgggcgtggtggtggtacctgtaatctcagctactcaggaggctgggtcaggagaat cgcttgaacccaggaggcggaggttacagtgagctgagatagcaccattgcattccagcctggacaacaaaagcgagact ctgtctcaaaaaaaaaaaaattagccaggcgtggtggtggtgcctgtcgtcctcgggaggctgaggcatgagaatca 25 ctccgggaggcagaggttgcaatgaaccaagatcacaccactgcactccagcctgggtgacagagcaagactctgtctaa aaaaaaaaaaaaagacagaaggatgtcagcatctgatgctgcctgtcaccttgaccctgaggatgccagtcacagctccat taactgggacctaggaaaatgagtcatccttggtcatgcacatttcaaatggtggcttaatatggaagccacacttggga tctgttgtctcctccagcatggtagaagatgcctgaaaagtaggggctggatcccatcccctgcctcactgggaaggcga ggtggtggggtggggcctcaggcttggggtcatgggacaaagcccaggctgaatgccgcccttccatctcctcc 30 tcctgagacagggcagcagggcacactagtgtccaggagcagcttatgaggccccttcaccctccgatcctccaaaact 35 ctgcggccccgggaagcgtgcgtcactgaatgacagggtgggggtggaggcactggaaggcagcttcctgctcttttgtgtcccccacttgagtcatgggggtgtgggggttccaggaaattggggctgggaggggaaggggaagggataccctaatgtcagactc aaggacaaaaagtcactacatccttgctgggcctctatccccaagaacccaaaaggactcaagggtggggatccaggagt tettgtatgtatgggggggggggggaggggaaacetgcatgacectagaggtccctgtggtcactgagagtgtgggctge catcccctgctacagaaacggtgctcaccttctgcccaaccctccagggaaaggcacacaggggtgaggccgaaccttcc gtctggtgccacatcacagaaggacctttatgacccctggtggctctaccctgccactccccaatgccccagccccat gctgcagcccagggctctgctggacacctgggctcccacttatcagcctcagtcctcacagcggaacccaggcgtccgg ccccccacccttcaggccagcgggcgtggagctgaggctttagagcctcccagccgggcttgttcctgtcccattgtgta tgggatagggggggggggggggcagcactggagagcccctcccactgcccctctctcggtcccctccttcttcta gagcctgggccaccctgcggcctggggctggggcttgggcctttgggctgtgcggcaagcagggcccggatcccatgccctg 50 55 ctaatgtcagactcaaggacaaaaagtcactacatccttgctgggcctctatccccaagaacccaaaaggactcaagggt ggggatccaggagttcttgtatgtatggggggaggtgaaggagagacctgcatgaccctagaggtccctgtggtcactg 60 agagtgtgggctgccatcccctgctacagaaacggtgctcaccttctgcccaaccctccagggaaaggcaCaCaggggtg agccgaaggcccttccgtctggtgccacatcacagaaggacctttatgaccccctggtggctctaccctgccactcccca atgccccagccccatgctgcagccccagggctctgctggacacctgggctcccacttatcagcctcagtcctcacagcg gaacccaggcgtccggccccccacccttcaggccagcgggcgtggagctgaggctttagagcctcccagccgggcttgtt ectgteceattgtgtatgggataggggeggggegagggccagcactggagageccectcccactgcccctctctctcggt gaagagegtggeeeaggageetgggeeaeeetgeggeetggggetgggeettgggeettgggeettgtgeggeaageagggee cagocaccocggcccctgagcccagccgggccccagcatccctactcccaccagcgccagaacacaggtaagggccaggc agctaggagcaggtgggcaacaagggtggtgtcaaggcctgaagcctggggctgggaaggtctggaacttgtagctgagt cgggagggccaggtcacaaatgcaaaagggctattaatgtgcatagaacaggacagtctgggaggctcagaaaggagacc 70 aggatcagagtcggcaggtgaagctgggagtaagggtgccagctatagaatctggccagggtttgaatgctgctctgccg ccaggagctgtttgactttgagcaagttacttaatctctctgaacctccatttatataaaacgagatatggcaatactta ctccatggggaagtaagtttctagctcacagcaagccttcaacagcagcgatgattatttagctggagaagaaaggagct gacagcagtggttacaggagtgagaaagtggggtctcccagaagagggagagattgggcaggaaactcgggcccttggg gtaagcaggctgagaagacagagccaccaggctttttcccctgctccagccccctctcctcgtggctgtcacccgaaaa

gatgaccctatecctggctcccaacagccccccgagctccccgctaacccagcccccagagggcccaagttccctcgtg tgaagaactgggaggtggggagcatcacctatgacacctcagcgcccaggcgcagcaggtaaggccggcatgccctgtc ggtcccttgtttccaaaaagaggagaggactgggaagaaccagaggagttgagggacatgcacgggacttgggtgaccct cagoctccagocttacccccaacctggctcaaacttttcccccatcccaccctgcacccctttccccctcccacccc catoccaccoctgcacccttcctcctcttgcccccgtcccacgcctgtactcctcctcctcctctcccccgtcacacccctg cacccctcctcctcccatcccatccctgcacccctcctcctcctccgccccgtcccacccctaaacccctcctcct 10 egteccaeccetacacccetectcctctgccccattccacccetgcacccctcctcctcttgccccgacccacccetg cacccctcctcctcccccgtcccacccctgcatccctcctcctcctcccgtcccacccctacacccctcctcccc 15 ccctctgcccctaccccacctctgcacccctccttctccccatcccacccctgcacccctcctcctctgcccctac cccaccctgcacccctcctcctccccatcccatctgcaccctctcctcctcctcccctctcccacccctgtaccc ttectecttetecccgtcccacccctgcacttetectcctctaacccatcccacccctgcacccttcttccctctcccc $\tt cate ceace act geace cetect eccet et ceccet g the cace cet geace cetect eccet act cecate ceate ceate ceate ceate cetect eccet geace cetect eccet geace cetect eccet geace cetect eccet eccet$ 20 cccctgcaccctggcctgtcctgacctttgcactccctcgacccaggatgggccctgcaccccaagacgctgcctgggct ccctggtatttccacggaaactacagggccggcctcccccggcccccggcccctgagcagctgattaggcccgg gacttcatcaaccagtactacagctccattaagaggtgacagcttcccggacgccacagcctcccttgtcccactgaggcccccagaaaccccgtgacgaccttcccattgacccccttcccagaaccccgtgacaccactcccgccctccc ccagcacttgcacaaagcctggaggagggcctccctgtcccacacaacttcctgcttgtccccttcccc 25 cccaggagegeteccaggeccacgaacageggettcaagaggtggaagecgaggtggcagecacaggcacetaccaget tagggagagcgagctggtgttcggggctaagcaggcctggcgcaacgctccccgctgcgtgggccggatccagtggggga agctgcaggtgcggctggccagcgactgagagacccgggcgctaccaaaaggggagcggggtggcggggcagttcctaag gcttcccgggggctgggaggtcccaaactgtgggggagatccttgccttttcccttagagactggaaaggtagggggact gccccacctcagcacccaggggaacctcagcccagtagtgaagacctggttatcaggccctatggtagtgccttggctg 30 gaggagggaaagaagtctagacctgctgcaggggtgaggaagtctagacctgctgcaggggtgaggaagtctagacctg ctgcaggggtgaggaagtetagacetgetgegggggtgaggaagtetagacetgetgegggggtgaggacagetgagegg agttccctgggcggtgctgtcagtagcaggagcagcctcctggaaaagccctggctgctgcttctcccccaagagagaaag gettetecegecagtecagtecagteceteacccacaccactgetacccagtteccctgetteggcccgcacc ctccctcacaccccagcccacagactcggggctggccttagttactggaacgcctgtgaccacagcactaagagaagcaa 35 gctgccccatgggggacttggtccccatggccttggcctccttcaccatcactggccgccaaagagtttgaaataaagcc acgtgcccagtgaatcccaaaggaacctcaactaaaataaaaacaatcctatctgacacttgcctgaccctctaagtcat tectectggggcctccactcagaatgtcaggatgagcagggtcctaggaggcctctggtgcagccttcccttcccaccat ccatgtgctcaaagagaatcacccgtcctttcttgaatgccatggatcatgggggatttgctgcccacactcctaggcgg cctcttagacatccgttggtgcctaacccaagcatcagtttggcagaggccgagtccctcctctgtactggataccaagt cagcttccatagggatgggagacacctggcccagggaggagatgagaagcagcccggatggtgctacatatgtcagaga 45 gtgttcgatgcccgggactgcaggtctgcacaggaaatgttcacctacatctgcaaccacatcaagtatgccaccaaccg gggcaacetteggtgagtgcccccaccatgccaggccccagcettettccccaaggcagggaaggcggggctetgacca gctetttccccatgcgtgccagctcggccatcacagtgttcccgcagcgctgccctggccgaggagacttccgaatctgg aacagccagctggtgcgctacgcgggctaccggcagcaggacggctctgtgcgggggggacccagccaacgtggagatcac cgaggtgggcaccgagggccacccatgagggtgtccccaaggtggagaatgaggaaaccagtgggagaaggctcggggga 50 tccaggcaggaagagggagcctcggtgagataaaggatgaaaaacaccaaaggaggggtgcctgggtggtcacggagac cagaacccctctggcccactccccacagtctgcattcagcacggctggaccccaggaaacggtcgcttcgacgtgctg gcaccccacgtgagcaccaaagggattgactgggtgggatggagggggccatccctgagcctctcaagaagggcctgcaa gggggtgctgatcccaeaccccaacacccccaggctggagtggtttgcagccctgggcctgcgctggtacgccctcccgg cagtgtccaacatgctgctggaaattgggggcctggagttccccgcagccccttcagtggctggtacatgagcactgag atcggcacgaggaacctgtgtgaccctcaccgctacaacatcctggaggtgaggtgcgggatggggctcgggcaccgaat ggtgtgagtgggtgagtgtgagagtgtgggtttctggggtgtgcagtggggtgagagtgtggggtgtggggtgtagtagta tgtgtgggcttgtaggggtaggcgagtgtggggtttgtggggtgtgtaggggcgagtgtgagagtgtaggtatgtgggtgt gagtgtggatgtggatgtgggtgagtgagtgggtgagtgtggggtttgtggggtggggtgtgggtgtgagtgtgggtttggggtttgtggg tgggtgtgggtgtgagtgggtgggtgagggggcatggggatgggtgtgaacatgtagttgttctttcaggcataggacc catagctctagagctttcatcagattctcaaaggggaccttgactcggaaaaggttaagacccattttagagatgagaaa ttaaagcctggagctgaggagcgactggcccaaagtccctctctgctctgaggtgcttcgcaggcaaaaacctgaaccag 70 cccaccccaccccgtgateacctetgtccctaccgatgccacacccttctgccccaggatgtggctgtctgcatgga cctggatacccggaccacctcgtccctgtggaaagacaaggcagtaggaaatcaacgtggccgtgctgcacagttacc gccatttagaaactagggcaggatttggacaggcagaagaagttccgtagtcccagtgccatggggcacactggctgcgg 75 ttcggggacagggcaggtactattccaggcgctgtcatctggtggcttactgtgtgccagggaccttgctgtttactgca tgcccagtcatgctgattctcagggcatattgggtattgcagtttgtgggacccgctggatcctggaaacaaataccagg atcaagggcacaccaggagtcgtagtttgaggaagccggggcctgctgagaatttctgtgggctatttggtttggggacc gagggtgacattgtggtttgaggggacacagggtgtgttagatatggggtaatcgagggcacatgtggtttggggtgacc agtcaccategtggaccaccacgccgccacggcctctttcatgaagcacctggagaatgagcagaaggccagggggggct gcctgcagactgggcctggatcgtgcccccatctcgggcagcctcactcctgttttccatcaggagatggtcaactat

ttcctgtccccggccttccgctaccaggtgcccaccctaatggctctgccagcctgggcccagctctaattctaagcagc ggagtgccgccaagggcaccggcatcaccaggaagaagacctttaaagaagtggccaagtgggtcccctgggagccccgc teteccacacacacetgggggccccacteteccccacacacectgggggaccetgcccagcagtgttetggacctacc actcagtatcccaaaaccctgttgtgagggggttggacccttgcctggggaggccctgcctctgtgcacccgggacaccc tcacaccttcctctcccgcagcgccgtgaagatctccgcctcgctcatgggcacggtgatggcgaagcgagtgaaggcga caatcctgtatggctccgagaccggcccgggcccagagctacgcacagcagctggggagactcttccggaaggcttttgat ccccgggtagggctgagcccaggggagcaggagctagaaagagggggctctatcagcatcttcaggggtgccctggagg acaggaagtgttacaagtcaggactcatgaggaacccggaaccacaggtgttcagagatcaagttggggcctgaatcttg gtcctgtgtatgatgagtatgacgtggtgtccctcgaacacgaqacgctggtgctggtggtaaccagcacatttggga tggggatcccccggagaatggagaggtgagaacttccaggaaagggctgctgggaatgaggagagactcagaattggag 15 ccagcccacccatgtggctgcctccctgcaagcacatttgcttaactgcgcgtccccaagtcatttccattatcagtgca agtttttaatacaaggaaggcacatcctggctgaccaagaggttagactgtgctcgggcactgacaagaaaaacagggat acgtcactqaqqqcqcttctaqqatqcqqqtaatqtttcttaatqqqatactqqttacacaqqtqtqttcaqtttqtaa cctatttacgttqcccaggctgqccttqaactcctagcctcaaqaqatcctcctqccqcagqctcctttttcaaaaqaaq 20 aaattgagcgctgtttagatgccaacatagattaaataacttcactttttaaaaagaaacacaaagctagagtaccatca ttgaattccttctcttgcaagcttaggtatctctgaggtgccccaggctaggctcatttctgagtcttacctgctccagc ttctaggtgttaaaggccttattagcactaagtacttcctcagtactcttttttctttttcctttgagacagggtctca ctttgtggcccaggctggagtgcagtagtacaatcacggctcactgcagcctcaacctcctagactcaagcaatcctccc acttcaacctcccaagtagttgggactacaggcgcatgccatgatgcctagctaatttttgtattttttatagagatggg 25 gtttcgccatgttgcccaggctggtctctaactcctgggttcaagcaatccacctgcctcggcctcccaaagtgctgcga ttatagacgtgagccactgcacctggcccgcagtatcttaagcaagttggaatctcgtgaaaccctttttgctgccttag tatagaacccatataacctacagccttcacaaggcatagcacattttcaccaccctggaaagttccctcatcagttcctc 30 ctagatggaagcacgcagtgttgcggcgtctcctgctgaggctgttttttgaggcgcactcgtgttgctgcgtgactcagt 35 gtggcgcacgcctatagtcctagctactcaggaggctaggcggagaattgcttgaacctgggaggtggaggttgcagtg agccgagatcacgccactgcactccagcctgggtgacagagcaagaattctacttaaaataaaatacaaataaaata tttaacaaatctaggaatacagctcacagaaaatggggtatattcactaaaaataaggaatatttatagcaaatttgttt 40 gtaataccccacactggaaacaattcaaatgaccatcgacaatactgataaattgtggtatattcaagtgccatatcgc actaagtgtgaacgaaacacaaccacacacaagtgcaggtgaatctgaaaaaatgtgaagagaagaaaaagccagacc aaagaatacatactgtactacagggttcactttatataaagttcagaaacaggcagaactaatccacggagttagaaatt aggagaggagttagtcactgggatggggtggcagtgacaggaagaaggcacgaagttggcttctaggatgcgggtaatg tttgtttgtttgtttgtttgtttgttttgttttgagctggagtctcactctgttgcccaggctggagtgcaatggcgt 45 gateteggeteaetgeaaceteegeeteeeggtteaagegatteteetgeeteageeteeegagtagetgggattaeag gtgcccgccaccatggccagctaatttttgtgttttttagtagagacgcgtttcaccatgttggccaggctggtcttgaat ccctgacctcagcctcccaaagtgctgggattacaggcgtgagccaccacgcccagccacgggtaatgtttctcgatggg atgctggttgcacaggtgtgttcagtttgtgaaaacttacagagttgtacatttacaacatgtgtgcacctctggacttg tgttgcacgttgacaaaacattcaaaaatgaaattcaaatcgttcttgctaactctggcgcacttgggaaccagcacca 50 atggcagcacaaacaaggccatggtcttctgaggagggcaacctgcacaatgtctgctagtgaccaggacactgctgaaggaactgagaggtttgtccacccatgaaatccactaaaacaggaaagattttgctctagccgttgttagccaggagtgagga gattacccagctgaagcatttaaaagtgggagcaaggcacacgtacaagggcgtttgagagagcacctgttcccagacca 55 ccgagctgcccttcagtctcagtgaagtacaatgtagccactaaaaagactgaggtcatgttttggaaagtccaggccgg aggalogottgagoccaggagitcaaggocagactgaacaacacagogagactocatotottcagaaaatttaaaaatta accaagagtggtggcacgcacctatagatctagctactaggaaggcagaaaaatcccttaagcccaggagtttgaggtta cagtgaatgatgatgagccactgcaccccaacctgggcgacagagcacaagacccatatctaaaaacaatactactactta cgtcaatattgttgtattgacctggagggatgtctgcaataaattattgattaaaaccaaggaagtacagtatggtacca 60 cttttacttaaaaaaaactataaatatgcacgtgcacgtaagttcaaggaaaaagggctggaaggttaacacctgtgaa tggcgcatatgcccggaggaagatggggtggtctttgtcttatcactttacacatttctgtaatgtcatttttcaaaaac atcagatcgcttttgaaattttcaaaacaaataaaaattaagtgacaaatcaataatgaggatcagctggtacagtt ttaaacttctatgtagtttgaaatgaaacaaaactaaccctgatgcaaacactcccctcgccagagctttgcagctgccc tgatggagatgtccggcccctacaacagctcccctcggccggaacagcacaagtgagttgggtgagagtttgggggagct 65 gggggagetgatgeatttggagacacaaacagaaaggggtetgaaaagetetecetetgtgeetcaagtegttttecca agtectgaggtetteagagatgggggtgtggtggtgtegggececaggeteggaacoccagggatgetggccetcagece ctcccaagggcagggcctttcctgtccagaggcagagacctgaagccgtccctggggctgggtctgggcctagcctgta tccccagggccctgtgacaaccttgtctttgtcctctcttgccaggagttataagatccgcttcaacagcatctcctgct aggtcagggcctcaccaagaggggtgcaacgggtgggcaagctgcctgggcaaacgtggcctgcaaagggagctccactg acgacccctgcaccccaggttctgtgttctgggctcggctcccgggcatacccccacttctgcgcctttgctcgtgcgg tggacacacggctggaggaactgggggggggggggctgctgcagetgggccagggcgacgagctgtgcggccaggaggag catggcatagccgacagctcttctgggtcaggggcaggaggtgacatggccctgccaggcacagggtggcctagccaaggcag aagtgcagccgacagagaggagcctcaccaggcag ggtgcctgcaccagaactggtccgggccaggcaagcacaggagaggggggtggatccctggggctgtggctttttaa cctgggcttcctcaggggcagtgctgcctgtctggggatcatgtctgcagttgacaagggctcggtctccccagtgccac actgttcagggcagtgctgtcccgggggcccaggctggagctcagcagatttgccttgattggaggaggaggagcatcc

taggaggagagggagtgggggctacctcagggacggggaggtcaggctgcagaaacacataggccctgattgggaagaag ggacacggtaaaataagctctaaaagaatttaaaacaaaaagagccattgcagcgggatgagaccacatcatcaggtttt gggaataggactttagaggcgtaggatccattacagcatcaccgaaccagaagcaggaaggctgagctaagcagagcagc agtittccagcigtgtgcctgaccaggagtagacgggatccacacctcccagggatctgcccgtggggtcccctctgc atctcatttaatcttcaccagaacacaatgaggtgtaaagatggggaaactgaggcatgtcactgtaagtacgggattcg gaatttgaatgcaggtctgaacacacagacgccttcacagagctaccgtgtgccaagcactatgcttctcggatcacggg 10 ccaatccatgaaatgggctggcggaaaaggtgctgtccttggcgccgcctcagccactggggctgccaacccccagga gcaagacgcagtgaagccgccaggcgctcactaggggagacccctggtggcggcagacatcttcagccctcaaccggcctgt cccgcaggccgcctgtgagaccttctgtgtgggagaggatgccaaggccgccgccgcagacatcttcagccccaaacgga gctggaagcgccagaggtaccggctgagcgcccaggccgagggcctgcagttgctgccaggtgggccctgcctcacccta 15 acccggctggttctctgaggcccccacaccccgggactaaagcactctggggccagqccctgctccctagctcaggctgc ctcatttgcccctccccggccccaggtctgatccacgtgcacaggcggaagatgttccaggctacaatccgctcagtgga aaacctgcaaagcagcaagtccacgtgaggacgacggctttaccgcccccaacccctgtcctgaacaccctgaccctgg accetectecteceacattetecegececeacecetetetgacteceataagtgcccetetececaceceaggaggge caccatcctggtgcgcctggacaccggaggccaggagggctgcagtaccagccgggggaccacataggtgtctgcccgc 20 ccaaccggcccggccttgtggaggcgctgctgagccgcgtggaggacccgccggcggcccactgagcccgtggcagtagag cagctggagaagggcagcctggtgaggggcagcctgggaagcaacagggcacaccagcccatgcccagcccaccccc ggctgtgctgcccactgccgggctggccttgttgctggaccatcccacaccctcaaatgcaccccaacaaaaggctgt cccctccctctgggctcctctccaaggctcccctagcaatctagcttgctctggagctggcactggggctatttgctgcc 25 acatcaatgcctgggctttatttaaaataagggggtggagtcagaggcagaggaggccagaccaacccagtccggccagg ggccccgaacaatacactgaggctacctagacaggccgaccccgctgctcaagggcaggctctctaacagtcaccaaaa cacaaacatcagcccaggtactgcagtcctgctgggccctgtcctcagagctcctgtgcactatccccaggtggccctc cccccggctgggtgcgggacccccggctgcccccgtgcacgctgcgccaggctctcaccttcttcctggacatcacctcc ccacccagccctcagctcttgcggctgctcagcaccttggcagaagagcccagggaacagcaggagctggaggccctcag ccaggttgggggccaccccaatgaggcacaggggctagagagacgggatgagctggggggaccccagtggcaggaaaccc ccatgcaaagtccccctggactttcttctctctggctgacatgcactggtgctttaagacccagctcctcagggaggaat tcatggctggattctccaggtcttagagaaaactctattggcctgaactgagcagggagaaaccctaaagaggctcagtg ggggagggtcaagaagggaggttactaggaagggctatggggcctccaacccactgcatcctgccccgccaggatcccc 35 agtctgctccacgtggctaagccagctcaagcccggagaccctgtgccctgcttcatccgggggtaagtgagatggagga cttggtggggagctgcccagggtcagggtggcagctttggtgaggagtgtcactggtgaggggtgtcactggaaacagga 40 ttagactcagagttctgccctgaaactatagctcccagagccagagctggtatcaaaccggctggccctgtggctttctg aaagottotgtgtttoctetetatgtocotgggotgtotgatgttgggcagoatggcacctgggaactacagtcactaaat cctcactcaatccagggagaactactagttagggttaagaccaccctttggccttggtgtcaccaaggactcaaagaagg tgaaggttttggttttttttttcccccagagatggagtcttgctctgtcgcccaggctggagtgcagtggtacgatctcgg 45 cttactgcaacctccgcctcccgggttcaagagattctcctatggcgtgaacctgggaggtggagcttgcagtgagccaa geeteetgagtagetgggattaeaggeaceeaceaceacgeeeagetaatttttgtatttttagtagagaeggtgtttea ctatgttggccaggctggtctcgagctcctgacctcacaatcctccacctccgcctcccaaagtcttgggattacaggt 50 ctcgcagccaggaaccaaaagtcctggtaggactgagaacagttcctaggctgccatcagctgggcctggtgattcaaat ccacccaggtggctaaactacaaataaaccgtacccatctactgaacataaactaaataccactattaaggatacttaaa ataaacacacttagtgaaccattatgaactgaaagtgtctttcacccttcccacgtttctaaatcccctgagtcatct
aagtattcttcaatccaaaatgaactatatttcctttggtgcaatctccagaaaccacagatccaaggagtttcagcaag 55 cggctgccacccgatcccagcttgccctgcatcctggtgggtccaggcactggcattgccccttccggggattctggca ggagcggctgcatgacattgagagcaaaggtgaggctggtgactaaaggactgcctgaagggagtcacacaatctaggga cagaggggtggggctggaaggcaggaaataggaaagagggcaggaaacaaagtccacaagctgaaaagacgctcatq agaccaaggggagggcaggtaccaaaggcaagggctgggccctgagcttctggcttcctggtgcctggtacatagtaggt 60 gttgactggattgaggacaaaggaaaatagaattttcaaagggattagggctaagactcaaagaagaactgcccaaggtg gattettgaetgtgecagagetgaeeggtetgteeaagaeetaaggatgetaeaaggtgtteatattgageatggggt gcccagggtggtctgtcaatcaaaagaagaggctgtgactgggaggagagttataagtatgggagaatatgaagtggga geggggaaggggactgegatgtcacacaatgcaaagggcatggaattetgagtcegaagcegegcattetagegcactee accaggggccaccacctcacccgcgcttcccttccctctgtaaatcagggctgtgcagggtctctgtgaaagcattctac 65 actctcttagagatgaaacagccaaagtaatggtggtttcagcccaaaacgctgggctgccaggctgggcgacggtggcc cccatgactttggtgttcggctgccgatgctcccaacttgaccatctctaccgcgacgaggtgcagaacgcccagcagcg cggggtgttttggccgagtcctcaccgccttctcccgggaacctgacaaccccaaggtgtgagaccctgagggcgcaatgg cgaccactcagccaccctgcacactctggcccacccttgtgccccggcccctctaggccccgcctctccccgcccctgc cccgcccctttggctctgccctgttgacaacgccccagggcacgcaggccccaccaggcccgctccggagaatttcaagg ctacgtgcaggacatcctgaggacggagctggctgcggaggtgcaccgcgtgctgtgcctcgagcggggccacatgtttg tetgeggegatgttaccatggeaaccaacgteetgeagaccgtgeagegcatectggegaeggagggegaeatggagetg ggctgcccgactcaggtccgccgaccaggatcagccccgctctccccctttgaggtggtgcttctccagttccggggtgtcca gaggctgcaaggattcagcattattcctccaggaaggagcaaaacgcctcttttccctctctaggcctgttgcctcgggc ctgggtccgccttaatctggaaggccctcccagcagcggtaccccagggcctactgccacccgcttcctgtttcttagt

agatttaccataagggactgtgccagatgttaggagaactactaaagtgcctaccccagctcatgtggattacagttttt tttttttgtttttttttttgaaacggagtctccctctgccgcccgggctggagtgcagtggcgtgatctcagctcact gcccggctaggttttgtatttttagtaaagacggggtttcaccatcttggccaggctggtcttgaactcctgacctcgtg atccaaccgcctcagcctcccaaagtgctgggattacaggtgtgagctactgcacccggcgtggattacaattataaaat gacaagatitctgttttaacctgtgcagttgtgggtatgtggggaaaggggtcattcttttaacagagtcctacacg agaaggcaggtgcagcactcagctgccaggagtggggcctgccagaaacaagagtcacagagatgtgcaacagccatgag caagettcagagtggacgcacagtaacatgggcaacttgaagagcgtggcccaggagcctgggccaccctgcggcctggg gctggggctgggctgtgcggcaagcaagcagccagccccggcccctgagcccagccgggcccagcacccagcatccc tacteccaecagegecagaacacagecececgageteccegetaacecageececagaggggeccaagttecetegtgtg aagaactgggaggtggggagcatcacctatgacaccctcagcgcccaggegcagcaggatgggccctgcaccccaagacg ctgoctgggctccctggtatttccacggaaactacagggccgccctccccggccccccggcccttaagcagctgctga gtcaggcccgggacttcatcaaccagtactacagctccattaagaggagcggctcccaggccacgaacagcggcttcaa 15 gcgcaacgctccccgctgcgtgggccggatccagtgggggaagctgcaggtgttcgatgcccgggactgcaggtctgcac aggaaatgtteacctacatctgcaaccacatcaagtatgccaccaaccggggcaaccttcgctcggccatcacagtgttc cggctctgtgcggggggacccagccaacgtggagatcaccgagctctgcattcagcacggctggaccccaggaaacggtc 20 gaggtgcccctggagcaccccacgctggagtggtttgcagccctgggcctgcgctggtacgccctcccggcagtgtccaa catgctgctggaaattgggggcctggagttcccccgcagcccccttcagtggctggtacatgagcactgagatcggcacga ggaacctgtgtgaccctcaccgctacaacatcctggaggatgtggctgtctgcatggacctggatacccggaccacctcg tccctgtggaaagacaaggcagcagtggaaatcaacgtggccgtgctgcacagttaccagctagccaaagtcaccatcgt 25 gggcctggatcgtgccccccatctcgggcagcctcactcctgttttccatcaggagatggtcaactatttcctgtccccg gccttccgctaccagccagacccctggaaggggagtgccgccaagggcaccggcatcaccaggaagaagacctttaaaga agtigccaacgcgtgaagatctccgctcgctcatggscacggtgatggcgaagcgagtgaaggcgacaatcctgtatg gctccgagaccggcggcccagagctacgcacagcagctgggagagactcttccggaaggctttgatccccgggtcctg tgtatggatgagatatgacgtgtgtccctcgaacacgagactgtggtgtccgtgtggtgaaccagcacatttgggaatgggaatcgcccggagaatggagaatcgccctggaggaatggcgaacgctcccctcggccggaac 30 agcacaagagttataaagatccgcttcaacagcatctcctgctcagacccactggtgtcctcttggcggcggaagaggaag gagtccagtaacacagacagtgcaggggccctgggcaccctcaggttctgtgtgttcgggctcggctccgggcataccc ccacttctgcgcctttgctcgtgccgtggacacacggctggaggaactgggggggagcggctgctgcagctgggccagg 35 gcgacgagctgtgcggccaggaggaggccttccgaggctgggccaggctgccttccaggccgcctgtgagaccttctgt gtgggagaggatgccaaggccgccgccgagacatcttcagccccaaacggagctggaagcgccagaggtaccggctgag cgcccaggccgagggcctgcagttgctgccaggtctgatccacgtgcacaggcggaagatgttccaggctacaatccgct cagtggaaaacctgcaaagcagcaagtccacgagggccaccatectggtgcgcctggacaccggaggccaggaggggctg cagtaccagccgggggaccacataggtgtctgccgcccaaccggcccggccttgtggaggcgctgctgagccgcgtgga ggacccgccggcgcccactgagcccgtggcagtagagcagctggagaagggcagcccttggtggccctcccccggctggg cagctcttgcggctgctcagcaccttggcagaagagcccagggaacagcaggagctggaggccctcagccaggatccccg acgetacgaggagtggaagtggtteegetgeeecacgetgetggaggtgetggaggteeegtteeegteggtggegetgeetg gagatccacctcactgtagctgtgctggcatacaggactcaggatgggctgggccccctgcactatggagtctgctccac ccagettgecetgeattetggtgggtecaggeattggeattgeceetteeggggattetggeaggagegetgeatgaeattgaeattgaeattgaeattgaeattgaeattgaeattgggetgeaggetgeatgaeattgaetttggtgtgetgeegatgeegatgeeattgaeetttaeeg cgacgaggtgcagaacgccagcagcgggggtgtttggccgagtcctcaccgccttctcccgggaacctgacaacccca 50 agacctacgtgcaggacatcctgaggacggagctggctgcggaggtgcaccgcgtgctgtgctcgagcggggccacatg tttgtctgcggcgatgttaccatggcaaccaacgtcctgcagaccgtgcagcgcatcctggcgacggagggcgacatgga getggacgaggccggcgacgtcatcggcgtgctqcqqqatcagcaacgctaccacgaaqacattttcgggctcacgctgc gcacccaggaggtgacaagccgcatacgcacccagagcttttccttgcaggagcgtcagttgcggggggcgcagtgccctgg gcgttcgaccctcccggctcagacaccaacagcccctgagagccgcctggctttcccttccagttccgggagagcggctg 55 cccgactcaggtccgcc (SEQ ID NO:12218) aggagtttcgacccgcgctggcgagtcatgagcgccaagtttcccactggcgcgcaaacttgagttactttttgagcgtgg atactggcgaagaggctgcgggggtattagcgtttgcagcgacttggctcgggcagctgacccaagtgtcctgtcttcc tteetetgettgtetetaggetetgaaactgeggageggecaeeggaegeettetggageaggtageageatgeageege 60 ttecaacgccagtctggcgcggtcgttggcacctgcggaggtgcctaaaggagacaggacggcaggatctccgccacgca ccatctcccctccccgtgccaaggacccatcgagatcaaggagactttcaaatacatcaacacggttgtgtcctgcctt gtgttcgtgctggggatcatcgggaactccacacttctgagaattatctacaagaacaagtgcatgcgaaacggtcccaa tatettgategeeagettggetetgggagaeetgetgeacategteattgaeateeetateaatgtetacaagetgetgg cagaggactggccatttggaggtgagatgtgtgaaggtggtgcetttcatacagaaagcctccgtgggaatcactgtggctg agtotatgtgctctgagtattgacagatatcgagctgttgcttcttggagtagaattaaaggaattggggttccaaaatg gacagcagtagaaattgttttgatttgggtggtctctgtggttctggctgtccctgaagccataggttttgatataatta acagcaaaagattggtggctattcagtttctatttctgcttgccattggccatcactgcatttttttatacactaatgac 70 ctgtgaaatgttgagaaagaaagtggcatgcagattgctttaaatgatcacctaaagcagagacgggaagtggccaaaa cegtettttgcetggtcettgtetttgcetetgetggttececttcacetcageaggattetgaageteactettat
aatcagaatgatcccaatagatgtgaacttttgagetttetgttggtattggactatattggtatcaacatggettcact gaattcctgcattaacccaattgctctgtatttggtgagcaaaagattcaaaaactgctttaagtcatgcttatgctgct ggtgccagtcatttgaagaaaacagtccttggaggaaaagcagtcgtgcttaaagttcaaagctaatgatcacggatat gacaacttccgttccagtaataaatacagctcatcttgaaagaagaactattcactgtatttcattttctttatattgga 75 aattaagaaagcctcgtcgtgaaagcacttaattttttacagttagcacttcaacatagctcttaacaacttccaggata ttcacacacacttaggcttaaaaatgagctc (SEQ ID NO:12219) gagacattccggtgggggactctggccagcccgagcacgtggatcctgagagcactcccaggtaggcatttgccccggt

cttggagtctggacatctgaaacttggctctgaaactgcgcagcggccaccggacgccttctggagcaggtagcagcatg

gagaggettecegeetgacagggecacteegettttgcaaaccgcagagataatgacgecacccactaagaccttatgge ccaagggttccaacgccagtctggcgcggtcgttggcacctgcggaggtgcctaaaggagacaggacggcaggatctccg ccacgcaccatctcccctcccccgtgccaaggacccatcgagatcaaggagactttcaaatacatcaacaggttgtgtc ctgccttgtgttcgtgctggggatcatcgggaactccacacttctgagaattatctacaagaacaagtgcatgcgaaacg gtdccaatatettgatcgccagettggetetgggagacetgetgcacategteattgacatecetateaatgtetacaag ctgctggcagaggactggccatttggagctgagatgtgtaagctggtgcctttcatacagaaagcctccgtgggaatcac tgtgctgagtctatgtgctctgagtattgacagatatcgagctgttgcttcttggagtagaattaaaggaattggggttc caaaatggacagcagtagaaattgttttgatttgggtggtctctgtggttctggctgtccctgaagccataggttttgat 10 ataattacgatggactacaaaggaagttatctgcgaatctgcttcatcccgttcagaagacagctttcatgcagtt ttacaagacagcaaaagattggtggctgttcagtttctattttctgcttgccattggccatcactgcatttttttatacac taatgacctgtgaaatgttgagaaagaaagtggcatgcagattgctttaaatgatcacctaaagcagagacgggaagtggccaaaaccgtcttttgcctggtccttttgccctctgctgctgctctcccttcacctcagcaggattctgaagctcac tctttataatcagaatgatcccaatagatgtgaacttttgagctttctgttggtattggactatattggtatcaacatgg cttcactgaattcctgcattaacccaattgctctgtatttggtgagcaaaagattcaaaaactgctttaagtcatgctta tgctgctggtgccagtcatttgaagaaaaacagtccttggaggaaaagcagtcgtgcttaaagctcaaagctaatgatca cggatatgacacttccgttccagtaataaatacagctcatcttgaaagaagaactattcactgtatttcattttcttta tattggaccgaagtcattaaaacaaaatgaaacatttgccaaaacaaaacaaaaactatgtatttgcacagcacactat cagtgggaattaagaaagcctcgtcgtgaaagcacttaattttttacagttagcacttcaacatagctcttaacaacttc 20 aatcaatgggactctgatataaaggaagaataagtcactgtaaaacagaacttttaaatgaagcttaaattactcaattt 25 gcatgtaacagactggcacatgtgccagctgaatttaaaaatataatacttttaaaaagaaaattattacatcctttacat tcagttaagatcaaacctcacaaagagaaatagaatgtttgaaaggctatcccaaaagacttttttgaatctgtcattca cataccctgtgaagacaatactatctacaattttttcaggattattaaaatcttcttttttcactatcgtagcttaaact 30 tagctttacgatggagagatgccagtgacctcataataaagactgtgaactgcctggtgcagtgtccacatgacaaaggg gcaggtagcaccctctctcacccatgctgtggttaaaatggtttctagcatatgtataatgctatagttaaaatactatt tttcaaaatcatacagattagtacatttaacagctacctgtaaagcttattactaatttttgtattatttttgtaaatag ccaatagaaaagtttgcttgacatggtgcttttctttcatctagaggcaaaactgctttttgagaccgtaagaacctctt gtatgtacaagagaaaacggaagagagagaaatgaggtggggttggaggaaacccatggggacagattcccattcttag cctaacgttcgtcattgcctcgtcacatcaatgcaaaaggtcctgattttgttccagcaaaacacagtgcaatgttctca gagtgactttcgaaataaattgggcccaagagctttaactcggtcttaaaatatgcccaaatttttactttgtttttctt ttaataggctgggccacatgttggaaataagctagtaatgttgttttctgtcaatattgaatgtgatggtacagtaaacc 40 acaaacttgttctttaatttcatcccaatcactttttcagaggcctgttatcatagaagtcattttagactctcaatttt aaattaattttgaatcactaatattttcacagtttattaatatatttaatttcattttaaattttaaattttagattattttatta ccatgtactgaatttttacatcctgataccctttccttctcatgtcagtatcatgttctctaattatcttgccaaattt caaaactttaacatactgataagtaagaaacaattataatttctttacatactcaaaaccaagatagaaaaaggtgctat 45 cgttcaacttcaaaacatgtttcctagtattaaggactttaatatagcaacagacaaaattattgttaacatggatgtta cttttagtattgatagcttacatatggccaaaggaatacagtttatagcaaaacatgggtatgctgtagctaactttata aaagtgtaatataacaatgtaaaaaattatatatctgggaggatttttttggttgcctaaagtggctatagttactgattt tttattatgtaagcaaaaccaataaaaatttaagttttttaacaactaccttatttttcactgtacagacactaattca 50 aagtatgaagttattcaattaaaatgccacatttctggtctctggg (SEQ ID NO:12220) gggctgcaggtttcgacccgcgctggcgagtcatgagcgccaagtttcccactggcgcgcaaacttgagttacttttgag cgtggatactggcgaagaggctgcgggcggtattagcgtttgcagcgacttggctcgggcagctgaccccaaagtgtctg tetteetteetetgettgtetetaggetetgaaactgeggeggeacaeeggaegettetggageaggtageageatgeage gggttccaacgccagtctggcgcggtcgttggcacctgcggaggtgcctaaaggagacaggacggcaggatctccgccac gcaccatctcccctcccccgtgccaaggacccatcgagatcaaggagactttcaaatacatcaacaggttgtgtcctgc cttgtgttcgtgctggggatcatcgggaactccacacttctgagaattatctacaagaacaagtgcatgcgaaacggtcc 60 tggcagaggactggccatttggagctgagatgtgtaagctggtgcctttcatacagaaagcctccgtgggaatcactgtg ctgagtctatgtgctctgagtattgacagatatcgaggctgttgttcttggagtagaattaaaggaattggggttccaaa atggacagcagtagaaattgttttgatttggtggtctctgtggttctgtggttccctgaagccataggttttgattaa 65 gacctgtgaaatgttgagaaagaaaagtggcatgcagattgctttaaatgatcacctaaagcagagacgggaagtggcca aaaccgtettttgcetggteettgtetttgeeetetgetggtteeeetteaeeteageaggattetgaageteaetett tataatcagaatgatcccaatagatgtgaacttttgagctttctgttggtattggactatatttggtatcaacatggcttc actgaattcctgcattaacccaattgctctgtatttggtgaqcaaaaqattcaaaaactqctttaagtcatqcttatqct 70 gctggtgccagtcatttgaagaaaaacagtccttggaggaaaagcagtcgtgcttaaagttcaaagctaatgatcacgga tatgacaacttccgttccagtaataaatacagctcatcttgaaagaagaactattcactgtatttcattttctttatatt ggaccgaagtcattaaaacaaaatgaaacatttgccaaaacaaaacaaaaactatgtatttgcacagcacactattaaa cccactatgttggccaggatggtcttgatttcttgacctcgtgttctgcccgcctctacctcccaaagtgccgggattac 75 aggogtgactgctgtgcccggccccagcatcacttttatagctttctgtgcctcttcccctgggccttggtgtatgaagc cacttgcctttctctgttgggaagcgagcagaatcagattgctactcatgatgcagtccgggcagggcatactgtcacct ttggctgtggacacagttgtcaggataggggagaagcctttaggtccgtcttcttgacacagccctcctacctggttac gctggtgctttcgcttggtttagacaaccaagacacttgagaattatgctgtcctcagaatgtctgatgaaaagaacaga ttcactttttggacacaatgcccattagccatctttggcagtgtttctgatcaaaggitccccatgccigctctaggaaa gtaaacttttttcagaataaatcctcaaatggattactgagtagtctttgcaccattcccatcagcctaatcagactgaa ttaaatttagtaattcaatcctgaccagtgtaaacccacttaattattgcagcctaaagaattcagctacttctactctt

 ${\tt cataaatgtgcccaagtaaatatgtgttttaatattcaaccctggaaaattagtaattcagatgataaaagctcatgtt}$ ttggtgtctttgtactcagattgtgaacaggcatatttcactgattagacttagtatacttgatgagaatgctcaggtt gaagagatagttctgtcagcaatccaacatctatagcaatgtggaaaaagtaatcaactcatatttcacgaatttgatgt atgttgtgatttagagggcatgagataaagtttatatttgaactgtgtggggtagggggaagaagaggttgcttaagcaa atgggggggtgattgaggaacaagatgtctctaagatgagaagttattttcttgcatcatagaagcactctythyaccog ngagtgattgtgttaactataaatcatttatatctgtacattaaagcagattccctcaattaggcaaatttggttagcca agcccaagttattgtttgtacttgaaagtaataaagctgcatttccttaaaaatatattctgtagttaagactttgtcttgctttccggaattcctgttttccttttcctctagagacctcggcttgcaactggatcaaacgctgtcgaaaggatgtaaa ccgagtctcaacagtaatcaacagtcaggtgttgattgcaacttttcaaggtcagccaccgggagtagcctattccctct gtgtgccctcaccaagccatgcgagcccgggcgcgcttctcgcccgcatgtcgcggctactgcttctgctcaatgctcaa ggtgtctgcctcttctgccctcggggtcgccctgcgtccagaaacgaaacttgtctgggggagagctgtgcacctacag tgatccagcgccgcggcagggacgcctggggaccgggaaattctgcaagagacgttctgcgagcccgagcacccagggag 20 ggteccagaggegetgteatttecgggcgtagccaggagcagagtgtgaagacagtecccggagccagcgatettttta ctgtccaaggagagccgggaaactccagggttcccaccacaagcccctgtccaagacggccaatggactggcggggcacg aagggtggacaattgcactcccgggccgggcgctggcccagaatqqatccttgggtgaaggaatccatgatcctggggg ccccgccggggaaacagcacgaaccggcgtgtgagactgaagaaccccttctacccgctgacccaggagtcctatggagc ctacgcggtcatgtgtctgtccgtggtgatcttcgggaccggcatcattggcaacctggcggtgatgtgcatcgtgtgcc 25 acaactactacatgcggagcatctccaactccctcttggccaacctggtcttctgggactttctcatcatcttcttctgc cttccgctggtcatcttccacgagctgaccaagaagtggctggtggaggacttctcctgcaagatcgtgccctatataga ggtcgcttctctgggagtcaccactttcaccttatgtgctctgtgcatagaccgcttccgtgctgccaccaacgtacaga cttccagaagttgttctccgccagctgagcaaggaggatttggggtttagtggccgagctccggcagaaaggtgcattat 30 taagatototootgatttaccagacaccatotatgttctagccctcacctacgacagtgcgagactgtggtggtattttg gctgttacttttgtttgcccacgcttttcaccatcacctgctctctagtgactgcgaggaaaatccgcaaagcagagaaa gcctgtacccgagggaataaacggcagattcaactagagagtcagatgaactgtacagtagtggcactgaccattttata tggattgggcattattcctgaaaatatctgcaacattgttactgcctacatggctacaggggtttcacagcagacaatgg acctccttaatatcatcagccagttccttttgttctttaagtcctgtgtcaccccagtcctcttttctgtctctgcaaa ${\tt cccttcagtcggccttcatggagtgctgctgctgttgctgttgaggaatgcattcagaagtcttcaacggtgaccagaccagtgacca$ tattttatctggtatggtgctaatattttatttgaaaaaagttactgcaacttaacttaaattgctaacgttttttctt cttttaaaaatacaattattgtatattaattattagcaatgtgattttgtaggttattttatatttgagttgtgattgaaa gggctgcaggtttcgacccgcgctggcgagtcatgagcgccaagtttcccactggcgcgcaaacttgagttacttttgag cgtggatactggcgaagaggctgcggggtattagcgtttgcagcgacttggctcgggcagctgaccccaaagtgtctg tetteetteetetgettgtetetaggetetgaaactgeggeggeeaceggaegettetggageaggtageageatgeage gggttccaacgccagtctggcgcggtcgttggcacctgcggaggtgcctaaaggagacaggacggcaggatctccgccac 50 gcaccatctcccctcccccgtgccaaggacccatcgagatcaaggagactttcaaatacatcaacacggttgtgtcctgc cttgtgttcgtgctgggggatcatcgggaactccacacttctgagaattatctacaagaacaagtgcatgcgaaacggtcc caatatcttgatcgccagcttggctctgggagacctgctgcacatcgtcattgacatccctatcaatgtctacaagctgc tggcagaggactggccatttggagctgagatgtgtaagctggtgcctttcatacagaaagcctccgtgggaatcactgtg $\tt ctgagtctatgtgctctgagtattgacagatatcgagctgttgcttcttggagtagaattaaaggaattggggttccaaa$ atggacagcagtagaaattgttttgatttgggtggtctctgtgggttctgggctgtccctgaagccataggttttgatataa aaaccgtcttttgccttgtctttgccttctgctgcttccccttcacctcagcaggattctgaagctcactctt tataatcagaatgatcccaatagatgtgaacttttgagctttctgttggtattggactatattggtatcaacatggcttc 60 actgaattcctgcattaacccaattgctctgtatttggtgagcaaaagattcaaaaactgctttaaggctgggccacatg ttggaaataagctagtaatgttgttttctgtcaatattgaatgtgatggtacagtaaaccaaaacccaacaatgtggcca gaaagaaagagcaataattaattcacacaccatatggattctatttataaatcac (SEQ ID NO:12223) aggagttttggacccgcgctggcgagtcatgagcgccaagtttcccactggcgcgcaaacttgagttacttttgagcgtgg atactggcgaagaggctgcggggtattagcgtttgcagcgacttggctcgggcagctgacccaagtgtcctgtcttcc ttcctctgcttgtctctaggctctgaaactgcggagcggccaccggacgccttctggagcaggtagcagcatgcagccgc ttcccgcctgacagggccactccgcttttgcaaaccgcagagataatgacgccaccactaagaccttatggcccaaggg ttccaacgccagtctggcgcggtcgttggcacctgcggaggtgcctaaaggagacaggacggcaggatctccgccacgca 70 ccatctcccctccccgtgccaaggacccatcgagatcaaggagactttcaaatacatcaacacggttgtgtcctgcctt gtgttcgtgctggggatcatcgggaactccacacttctgagaattatctacaagaacaagtgcatgcgaaacggtcccaa tatettgategeeagettggetetgggagaeetgetgeacategteattgaeatecetateaatgtetaeaagetgetgg cagaggactggccatttggagctgagatgtgtaagctggtgcctttcatacagaaagcctccgtgggaatcactgtgctg agtctatgtgctctgagtattgacagatatcgagctgttgcttcttggagtagaattaaaggaattggggttccaaaatg 75 gacagcagtagaaattgttttgatttgggtggtctctgtgggttctggctgtccctgaagccataggttttgatataatta ctgtgaaatgttgagaaagaaaagtggcatgcagattgctttaaatgatcacctaaagcagagacgggaagtggccaaaa ccgtcttttgcctggtccttgtctttgccctctgctggcttccccttcacctcagcaggattctgaagctcactctttat aatcagaatgatcccaatagatgtgaacttttgagctttctgttggtattggactatattggtatcaacatggcttcact gaattcctgcattaacccaattgctctgtatttggtgagcaaaagattcaaaaactgctttaagtcatgcttatgctgct

ggtgccagtcatttgaagaaaaacagtccttggaggaaaagcagtcgtgcttaaagttcaaagctaatgatcacggatat

gaCaacttccgttccagtaataaatacagctcatcttgaaagaagaactattcactgtatttcattttctttatatttgga ccgaagtcattaaaacaaaatgaaacatttgccaaaacaaaacaaaactatgtatttgcacagcacactattaaaata aattaagaaagcetcgtcgtgaaagcacttaattttttacagttagcacttcaacatagctcttaacaacttccaggata ttcacacacacttaggcttaaaaatgagctcgagacattccggtgggggactctggccagcccgagcaacgtggatcct gagagcactcccaggtaggcatttgccccggtgggacgccttgccagagcagtgtgtggcaggcccccgtggaggatcaa cacagtggctgaacactgggaaggaactggtacttggagtctggacatctgaaacttggctctgaaactgcgcagcggcc accggacgccttctggagcaggtagcagcatgcagcctccaagtctgtgcggacgcgccctggttgcgctggttctt gcctgcggcctgtcgcggatctggggagaggagagggcttcccgcctgacagggccactccgcttttgcaaaccgcaga gataatgacgccacccactaagaccttatggcccaagggttccaacgccagtctggcgcggtcgttggcacctgcggagg tgcctaaaggagacaggacggcaggatctccgccacgcaccatctcccccccgtgccaaggacccatcgagatcaag gagactttcaaatacatcaacacggttgtgtcctgccttgtgttcgtgctggggatcatcgggaactccacacttctgag aattatctacaagaacaagtgcatgcgaaacggtcccaatatcttgatcgccagcttggctctggggagacctgctgcaca tcgtcattgacatccctatcaatgtctacaagctgctggcagaggactggccatttggagctgagatgtgtaagctggtg ${\tt cctttcatacagaaagcctccgtgggaatcactgtgctgagtctatgtgctctgagtattgacagatatcgagctgttgc}$ ttottggagtagaattaaaggaattggggttocaaaatggacagcagtagaaattgttttgatttgggtggttotetgtgg catcccgttcagaagacagctttcatgcagttttacaagacagcaaaagattggtggctgttcagtttctatttctgctt 20 ccccttcacctcagcaggattctgaagctcactctttataatcagaatgatcccaatagatgtgaactttttgagcttctcgttggtattggactatattggtatcaacatggcttcactgaattcctgcattaacccaattgctctgtatttggtgagca 25 gaagaactattcactgtatttcattttctttatattggaccgaagtcattaaaacaaaatgaaacatttgccaaaacaaa acaaaaaactatgtatttgcacagcacactattaaaatattaagtgtaattattttaacactcacagctacatatgacat tttatgagctgtttacggcatggaaagaaatcagtgggaattaagaaagcctcgtcgtgaaagcacttaattttttaca ttctattctttctaaaaagagatttatttttaaatcaatgggactctgatataaaggaagaataagtcactgtaaaacag 30 tattatcagattgtaattagatgcaaatgagagagcagtttagttgttgcatttttcggacactggaaacatttaaatga tcaggaggagtaacagaaagagcaaggctgtttttgaaaatcattacacttcactagaagcccaaacctcagcattct gcaatatgtaaccaacatgtcacaaacaagcagcatgtaacagactggcacatgtgccagctgaatttaaaatataatac ttttaaaaagaaaattattacatcotttacattcagttaagatcaaacctcacaaagagaaatagaatgtttgaaaggct atcccaaaagacttttttgaatctgtcattcacatacctgtgaagacaatactatctacaattttttcaggattattaa agatgattaatgagggcaggccctgtgctcatagctttacgatggagagatgccagtgacctcataataaagactgtga actgcctggtgcagtgtccacatgacaaaggggcaggtagcaccctctctcacccatgctgtggttaaaatggtttctag catatgtataatgctatagttaaaatactatttttcaaaatcatacagattagtacatttaacagctacctgtaaagctt 40 aaaactgctttttgagaccgtaagaacctcttagctttgtgcgttcctgcctaatttttatatcttctaagcaaagtgcc tgtcaatattgaatgtgatggtacagtaaaccaaaacccaacaatgtggccaqaaagaaaqagcaataattaattca cacaccatatggattctatttataaatcacccacaaacttgttctttaatttcatcccaatcactttttcagaggcctgt tatCatagaagtcattttagactctcaattttaaattaattttgaatcactaatattttcacagtttattaatatattta atttctatttaaattttagattatttttattaccatgtactgaatttttacatcctgataccctttccttctccatgtca 50 atactcaaaaccaagatagaaaaaggtgctatcgttcaacttcaaaacatgtttcctagtattaaggactttaatatagc aacagacaaaattattgttaacatggatgttacagetcaaaagatttataaaagattttaacetatttecteettatta tccactgetaatgtggatgtatgttcaaacacttttagtattgatagettacatatggccaaaggaatacagtttatag caaaacatgggtatgctgtagctaactttataaaagtgtaatataacaatgtaaaaaattatatatctgggaggattttt tggttgcctaaagtggctatagttactgattttttattatgtaagcaaaaccaataaaaatttaagtttttttaacaact cattatttatgttaaatatacaattatcaagcaagtatgaagttattcaattaaaatgccacatttctggftctctggggg gctgcaggtttcgacccgcgctggcgagtcatgagcgccaagtttcccactggcgcgcaaacttgagttacttttgagcg 60 ttccttcctctgcttgtctctaggctctgaaactgcggcggccaccggacgcttctggagcaggtagcagcatgcagccgcctccaagtctgtgcggacgcgcctggttgcggctggttcttgcctgcgggatctggggagaggaggaggagagag gttccaacgccagtctggcgcggtcgttggcacctgcggaggtgcctaaaggagacaggacaggaactccgccacgc accatctcccctcccccgtgccaaggacccatcgagatcaaggagactttcaaatacatcaacacggttgtgtcctgccttgtgttcgtgctgctgcgggatcatcgggaactccaccttctgagaattatctacaagaacaagtgcatgcgaaacggtccca 65 atatettgategeeagettggetetgggagacetgetgeacategteattgacatecetateaatgtetacaagetgetg gcagaggactggccatttggagctgagatgtgtaagctggtgcctttcatacagaaagcctccgtgggaatcactgtgct gagtctatgtgctctgagtattgacagatatcgagctqttqcttcttqqagtagaattaaaggaattqqqqttccaaaat 70 ggacagcagtagaaattgttttgatttgggtggtctctgtggttctggctgtccctgaagccataggttttgatataatt gacagcaaaagattggtggctgttcagtttctatttctgcttgccattggccatcactgcatttttttatacactaatga cctgtgaaatgttgagaaagaaagtggcatgcagattgctttaaatgatcacctaaagcagagacgggaagtggccaaa accgtcttttgcctggtccttgtctttgccctctgctgcttccccttcacctcagcaggattctgaagctcactcttta 75 taatcagaatgatcccaatagatgtgaacttttgagctttctgttggtattggactatattggtatcaacatggcttcac tgaattcctgcattaacccaattgctctgtatttggtgagcaaaagattcaaaaactgctttaagtcatgcttatgctgc tggtgccagtcatttgaagaaaaacagtccttggaggaaaagcagtcgtgcttaaagttcaaagctaatgatcacggata tgacaacttccgttccagtaataaatacagctcatcttgaaagaagaactattcactgtatttcattttctttatattgg accgaagtcattaaaacaaaatgaaacatttgccaaaacaaaacaaaactatgtatttgcacagcacactattaaaaat attaagigtaattattttaaaaaaaaaaaaaaaaaccactatgttggccaggatggtcttgatttcttgacctcgtg ttctgcccgcctctacctcccaaagtgccgggattacaggcgtgactgctgtgcccggccccagcatcacttttatagct ttctgtgcctcttcctctgggccttggtgtatgaagccacttgcctttctctgttgggaagcgagcagaatcagattgct

actcatgatgcagtccgggcagggcatactgtcacctttggctgtggacacagttgtcaggataggggagaagccctttaggtccgtcttcttgacacagccctcctacctggttacgctggtgctttcgcttggtttagacaaccaagacacttgagaattatgctgtcctcagaatgtctgatgaaaagaacagattcactttttggacacaatgcccattagccatctttggcagtg tttctgatcaaaggttccccatgcctgctctaggaaagtaaacttttttcagaataaatcctcaaatggattactgagta gtctttgcaccattcccatcagcctaatcagactgaatggtcacgctcagtgcaaaaagctgttttgctgttaggatgtt tcagtgtttcttgtctttctggaacagttcagttgtttaaatttagtaattcaatcctgaccagtgtaaacccacttaa ttattgcagcctaaagaattcagctacttctactcttcataaatgtgcccaagtaaatatgtgttttaatattcaaccc tggaaaattagtaattcagatgatatttcactg 10 tgtgtggggtagggggaagaagaggttgcttaagcaaatgggggggtgattgaggaacaagatgtctctaagatgaag ttattttcttgcatcatagaagcactctythyacccgngagtgattgtgttaactataaatcatttatatctgtacatta tccttaaaaatatattctgtagttaagactttgtcttgctttccggaattcctgtttttcttttcctctagagacctcgg 15 aaggcagtgaggagtgtggggcttcgtctgggctcccccgagtctcaacagtaatcaacagtcaggtgttgattgcaact tttcaaggtcagccaccgggagtagcctattccctctaggaaccttggagggcataccttgctgggactcaacttggctg ctaatctccggttccccgctacccgggcggggggtgagtatgtgacatgtgcctaactctcagcagcaacttcggcagcag 20 gtgtcgatcctaactaagcaggagctgcggetgccgggtgtgccctcaccaagccatgcgagccccgggcgcgcttctcg cccgcatgtcgcggctactgcttctgctactgctcaaggtgtctgcctcttctgccctcggggtcgccctgcgtccaga aacgaaacttgtctggggggagagtgtgcacctacagtgatccagcgccgcgggaagggacgcctggggaacttc tgcaagagacgttctgcgagcccgagcacccagggaggagcagggggcagcgtttcttgcgggaccctcctgggacctgc cggcggcccggaccgtgacccggctgcaggcaggaggggggaggcgtcgacagccggacccccgggacctccaaccagg 25 ccacctgtcccctggaggtggaaaggtgctcggggtcaggagccttctgaaactttggggagagggaaccccacggccct ccagctcttccttcagatctcagaggaggaagagaggtcccagaggcgctgtcatttccgggcgtagccaggagcaga gtgtgaagacagtccccggagccagcgatcttttttactgtccaaggagagccgggaaactccagggttcccaccacaag cccctgtccaagacggccaatggactggcggggcacgaagggtggacaattgcactcccgggccgggcggtggcccagaa tggatccttgggtgaaggaatccatgatcctgggggtccccgccggggaaacagcacgaaccggcgtgtgagactgaaga 30 accettetaccegetgacccaggagtectatggagectacgeggteatgtgtetgteegtggtgatetteggggaccgge 35 ggtttagtggccgagctccggcagaaaggtgcattattaagatctctcctgatttaccagacaccatctatgttctagcc tctagtgactgcgaggaaaatccgcaaagcagagaaagcctgtacccgagggaataaacggcagattcaactagagagtc agatgaactgtacagtagtggcactgaccattttatatggattgggcattattcctgaaaatatctgcaacattgttact 40 gcctacatggctacaggggtttcacagcagacaatggacctccttaatatcatcagccagttccttttgttctttaagtc ctgtgtcaccccagtcctccttttctgtctctgcaaacccttcagtcgggccttcatggagtgctgctgctgttgctgtg aggaatgeatteagaagtetteaacggtgaecagtgatgaeaatgaeaacgagtaeaceaeggaaetegaaetetegeet atttatttgtttgattttcatatcccgtgaaagtttttaattcatatttttccttatagggaaaaatgcaaaaaagaaac aataaagaaagaaatattaactactgtagaactgattttacaaattaatattgtgctttgaaaaaaagtttctatttag ttatttaagaagaatgagaaggccaatagttttagattattttatctggtatggtgctaatattttatttgaaaaaagtt actg caactta actta a a attg ctaacg tttttcttcttcttcttctaa a a attact g ta ta tta attact a g caatg t g a constant a track of the constant act g caactg t g a constant a constant50 cggacgcttctggagcaggtagcagcatgcagccgcctccaagtctgtgcggacgcgccctggttgcgctggttcttgcc tgoggcotgtogoggatotggggagaggagagaggcttocogocogacagggcoactocgcttttgcaaaccgcagagat 55 aatgacgccaccactaagaccttatggcccaagggttccaacgccagtctggcgcggtcgttggcacctgcggaggtgc ctaaaggagacaggacggcaggatctccgccacgcaccatctcccctcccccgtgccaaggacccatcgagatcaaggag actttcaaatacatcaacacggttgtgcctgccttgtgttcgtgctggggatcatcgggaactccacacttctgagaat tatctacaagaacaagtgcatgcgaaacggtcccaatatcttgatcgccagcttggctctgggagacctgctgcacatcg teattgacateectateaatgtetacaagetgetggcagaggactggccatttggagetgagatgtgtaagetggtgcet 60 ttcatacagaaagcctccgtgggaatcactgtgctgagtctatgtgctctgagtattgacagatatcgagctgttgcttc ttggagtagaattaaaggaattggggttccaaaatggacagcagtagaaattgtttttgatttgggtggtctctgtgggttc cccgttcagaagacagctttcatgcagttttacaagacagcaaaagattggtggctgttcagtttctatttctgcttgcc ${\tt attggccatcactgcatttttttatacactaatgacctgtgaaatgttgagaaagtagcatgcagattgctttaa}$ 65 atgatcacctaaagcagagacgggaagtggccaaaaccgtcttttgcctggtccttgtctttgccctctgctggcttccc cttcacctcagcaggattctgaagctcactctttataatcagaatgatcccaatagatgtgaactttttgagctttctgtt ggtattggactatattggtatcaacatggcttcactgaattcctgcattaacccaattgctctgtatttggtgagcaaaa 70 gatatcctattaatacagagatacagaaagaaatacataaaaaatagttttatcaaatactttccagcattcaagtgtag cctcaaaagcaagaataggccaggagtggtggctcacgctgtaatccacagcactgtgggaggccaaggtaagaggattg cttqaggccaggatttcaagaccagcctaggcaacatagtgagatccctatctctacgaaaaaattttaaaacttagctg ggcatggtgcttgagcctgttgtcccagctactcaggaggtgaagtaggagtgtcacttgagcccaggaggttgaggctg 75 caqtgagctataactgcaccactgcactccagccttggagacagagtgagaccctgtccccaaaaaaattaaaattgaga cttcccttcccttctgagagtgactgtggccaaaaggagcattttccccctgcagtcctctgaggggtggggtggggct atgaagctatcettcatattcactcetttgtccagctettttcacctctagttettetccccgcatctctgtctagcagt gccttaagtggaggaggggtgggggcatcaagcttgtaaaactggtttgttgggggttctccttcttcccctcatttcttga 80 ttcttgggaaaatgtcttgctgggaggctgcctggcgagtgccctagctgccttctgtgggcttgaatggggcttccctc tgcccctacaggaggaaaagggagctgctgccagagggagaaatggagagatggacagagaaggcaggtgccacccctcg

cttgcaaattcaggattcaaagagacaggggcaccattatatttggcacggtggggccttccaggtctgaaatcctgcat tcatattcacgggatgacacagacggggcgtggtgagtgctgttggaggcgcttgggagtttcatttttgccccacttct ccacctgaaggctgggcgttgctggaacctgcaggggcagcctcagcaaggtggggtggcgtggagtggggtgggagaaa gcttccggctcagtgccgcctgctctccgggagctgtgcgctccctgggccccgggggctaggctgaggtaagcgcacagc ggaggccaggcgccgccagaggcctgggggatagggtggaggcatctctgggtgtggggtgtggggtgtggggtgtggggtgtggggag ggagagttettgeeteteteteeeateteeaaetettgetteagtggetettttagaggatgeatgteattatggaee tgtegetgeeactgteeetgtteeeceagetgtgaettegagggaggtetggggatetgagtetgteeaaaceeacgget ttgctgttgggataaaaactgtccttttgattttagaaggaggagggaaaaaaggtttcccagcatgtgtgttgtgccag tcttggaaattcatccgtgcttgaattccaccctccatcccagaaaaactggagtaaaacaaaaagaggagatggacaa agtgtgtatttgatggcatcccctgggaagagacttaaatttatcccataggtcttactgggccactgtgagcgctttg ggcatttccttctcagcaccaccttccttgcatattcacttaaccttgtacaagaacacctttttgccctaaatgaagac 20 accoccccaaaaaaaagagtcccagaaaalatgtccctgcttgtgcgggaataaatagaatattctgaggtgcattcctc ttggtggcaccgaccaatcttaagatttaagttctgtgtgaaaaacacctttgcttttcaatcagtttatcagcctcctc 25 cgcaggggaatgtggacacacaaaagaacttatcggggcttctcatcagtgatagggaaaagactggcatgtgcctaaac gagetetgatgttatttttaageteeetttettgecaateeeteaeggatettteteeggatagatgeaaagaaetteage aaaaaagacccgcaggaaggggcttgaagagaaaagtacgttgatctgccaaaatagtctgacccccagtagtgggcagt gacgagggagagcattcccttgtttgactgagactagaatcggagagacataaaaggaaaatgaagcgagcaacaattaa aaaaaattccccgcacacaacaatacaatctatttaaactgtggctcatacttttcataccaatggtatgactttttttc tggagtecectettetgattettgaacteeggggetggeagettgcaaaggggaageggactecageactgcaegggeag gtttagcaaaggtetetaatgggtattttetttttettagccctgccccgaattgtcagacggcgggcgtetgcttctg aagttagcagtgatttcctttcgggcctggcttatctccggctgcacgttgcctgttggtgactaataacacaataacat tgtctggggctggaataaagtcggagctgtttacccccactctaataggggttcaatataaaaagccggcagagagctgt ccaagtcagacgcgctctgcatctgcgccaggcgaacgggtcctgcgcctcctgcagtcccagctctccaccgccgcgt $\tt gegcctgcagacgctccgctcgcttctctctcctggcaggcgctgccttttctccccgttaaagggcacttgggctga$ aggategetttgagatetgaggaaceegcagegetttgagggacetgaagetgttttettettegtttteettgggttcag tttgaacgggaggtttttgatcccttttttcagaatggattatttgctcatgattttctctctgctgtttgtggcttgc ${\tt caaggagetccagaaacaggtaggcacgctcgttgacttgtaagtctcggaattacaagttagtgtgttcttatccacct}$ tcatgcttttcttgcttctattttccccgttcttttatgactgcagcttagagagcaagtgtctgagaattattgctg aaacgtactttaagtcttctagtgtaaaatgtaaaattcctctactgaatacaattaggtgcaattgactataacatgac attaaaataacttatcgttttattattattattccattatgtgtttccttggcttttaaaaaatgagaagagtatggaca tatacaatttagtcaaatgtatgtttgtaatatatgtgtttatacaggtacacaggccatataggaacttaaatcttatt taaacactattttaatagtgtgttaacgtgtaaaatatttaagcattccagcttgaagccaaggaattgtatccagtcgt cccccgcaggeggtttctgggtgaagcagatgttttctttaaaatttgtcatcattgactttaggtttcttttggcagg tttttggcacccaaaacagtgtgagctctcttttcagctttattcacctgtgctgggaggggagctaggataattcttgg tcgtgaccctgactaaagagaaaggatgtcaagggaatgaaaatcctggaatgtctgatcatttgaaatgtacaaaat tgggcagataagctgcatggctaaattgttaggaggaagaggcaaggcagtagtggagaagggggaggcagtggatccca cacaagcctgatgcccagggattcggaattcaaaatccccccagcctaccttcagtcccctgacctgcttctcagcccca cacctaattttgaaagatatacatcatctggggtaccctgtgccctacacagcatgtgaagtgggtaccccctaaa gagagggtcatcctgaatggggaagtggccccaaagctaggaataactgtgatttcttgtctttagtcatgtgccaatgt taagtaagetteagtggatagtgetgteetaceaagtteettgtagaageeageeggatttteaaeaggeageatteeae agcatttccctgagcctgcttcaagaggggtggggggaagtcccttttcaggtgtttatctcctctgcatttgtgtaatct cacgtttcaaatgaggaactttcagtgagagggcctcagggggacactctcacagtggcatctgatggggtttcgggaat aattgccgaggtcagatgtgggttagtgcaacctgtgcttctcatgggagggtggagactgagaggcagaagtgatgata tgtagcagagctagaactggagcccggatttcctttgctgctatattttccctttagaaatgcccatttcagaactgaaa tagaaatactgtccataggcttctctttcacctacagagaagaaaagcagatttcctccttctgccctggacactagttc atcatctgtcggaagcagtcataaacaagcacacatttactatgcatacaatgtaccgttatgacaaaggaggaccaaaa 70 tccaaacaatatcaaaccacaccaaaaaccacaaggagcctaataattactaaggtgatacttccaaagggaggacttta tttcttagatgagaatgaaaatggacacattggaaattattggagagccctctggctatgagtccttccacaaccatatg gtaccaccgactggcaggagaaatgtgtgaacatgtgcctcctccccaaccactggggccggtggggtgacggtggca cttttagcagtatcctccgtggtttgagttgaaaataagttttaaaaatcctgtgagtcatggttttgcattgaaacctc ttcccactgtgtacccacaaatagttaactaaatagaccattagaaaaggaagaaatataaagcagatgccaagcagag 75 atgtcctaatttttgacaaaaaagcaatgttgcttgtgtcaagaagaaactgaactttgtgaagagttgaaatggaattc acttggaagccctaggtccaagagagccttggagaatttacttcccacaaaggcaacagaccgtgagaatagatgccaat gtgctagccaaaaagacaagaagtgctggaatttttgccaagcaggaaaagaactcaggtgagcagaaacacctttgctt ttcaatcagtttaacagcctcctgaactccttcctatcatggtactgccttcctgttttagagagactaacagagacatt gaaagtcagggtaaagctgaatataacattgctgaaatgtttttccttgtgtattttaacagggctgaagacattatgga

agaaaacagtagcagaggagatctatgcatcctatagattaaaaggagcaaaagaatccctcttaaatatttccatgaag tccagagatgcctttgbcattgggttatatacagcctttgcctctctgagtcaatgtatttaccactttccctgagaaat cgaaaatcattttggggagcggacatttagaaaaagaatcaaagtgtcatggataatcaaattcttcaataagttgcagt tättcagatggccaaaggaaaaataaagtcattagatagggttggtagaatttagaacatgctgtttttcaggtttatgg tcttttttttttttttttttttttttaaatagggaaatgtgtttggtgcagagccaatgtcattccaaaaagctctctc ttttcctggtcagtcatgtgctgggacagagagaggatctggattaggcaacatcatagagttgctctgagctgctcttt ggtgataacccttccaaatcctaaactttttggaattcacaagctcaaaggaggaaacctactctctgatctaccacatg ttotgcatttttotatoatggtotatggaaacttotottagaaatocagtggcaagaagttotatgattaaagtgttotg ageteaggecaggeagteatgaaetaettetgagttgtttaetaetgattgtggggeageeteagetateggtttette aattttttatgggtttttattatgccaactattaaatcaacattacagttcttccctctgtatttctcctgtaaaacatt aggcctgcaaaaaaaaaaatctttttaaaaataattgccataaagtatttgctctgggcctactgtatgcttcttttyt tttctctcttttcaactaagtcaccgtcaatttattaagatggccataactattcaaaacctatgctgagttcctcaag tactgcccacttccccttagacttgaccatatgacccttgctccccattctaagcataggggcaggctttatttttaca atggia at a gat gat at cacting aggitt that caa agagit goog og goog to gat a agt to a caacca gat to aggitt the cacting aggitt that can be a good and the cacting aggitt that can be a good aggigtttgtgccagattctaattttacatgtttcttttgccaaagggtgattttttaaaataacatttgttttctctttatct tgctttattaggtcggagaccatgagaaacagcgtcaaatcatcttttcatgatcccaagctgaaaggcaagccctccag agagcgttatgtgacccacaaccgagcacattggtgacagaccttcggggcctgtctgaagccatagcctccacggagag ccctgtggccgactctgcactctccaccctggctgggatcagagcaggagcatcctctgctggttcctgactggcaaagg accagcgtcctcgttcaaaacattccaagaaaggttaaggagttcccccaaccatcttcactggcttccatcagtggtaa 30 gcctcgtagaagtctggtctaatgtgtcagcagtagatataatattttcatggtaatctactagctctgatccataagaa aaaaaagatcattaaatcaggagattccctgtccttgatttttggagacacaatggtatagggttgtttatgaaatatat tgaaaagtaagtgtttgttacgctttaaagcagtaaaattattttcctttatataaccggctaatgaaagaggttggatt gaattttgatgtacttatttttttatagatatttatattcaaacaatttattcttatattcacatgttaaatatctgt Etgggcaggccatattggtctatgtatetttaaaatatgtatttctaaatgaaattgagaacatgctttgttttgcctgt ggccaacgtgattaagtaccataaaggcaaataaatggttaaagacggtttcatagaaaagtgacaattagaaggatatt acggtotaagotaattatataaagaattttatotgtatottaaatgttgattttatactgcattgaggtaaaaacacaaa gacttcatccattaacttggctcaggctattggcaggattcacagtttaagctgatggtgtggtgagagatgctttatcc atattaatggactgaaggaagtaatggcaagacaaccccccaaaacatacctaattatacaaagttatataccaaagttg cttttagaaaatggcctgctcagagcaagtagaggtttccaatggctttttattttctcacattaaggatgttgtttcttaaggaacattgagtaccattgcttcttcgtgatagcctaggactgccgtgtgcccatggagggtagagacaccaggtactg gatctaatacatttaagaggaagtcagaatcagagaagccactgaacaaaacagtccaaacggagcatagtaagtcagat tgatgagtttttggttgggtttttcatcagtcaaacccttgagcccccctttcccatgcttcctgcttcagtatccagtag 55 gaaaaatgaaagggatgatgtagacactctagggcatgaggatttgcagtaaataagttgggagactcacagaaaattaa tattttttcaaacatgaagacgaaacattcaattatattacagtecacatcagettgaagggtaaactgatggggatgatet gtcacatttcttgctctgtttccagtaaaagcatggtttctggaaacccacttaggacagctttctctctttacactgat agcccaggcaagctttgatctcagaactccagaaaccagagaactctaggtggaatgtggtaacttttgccagggcagag ggaacacctactaataggtacttcatttgcaccaccagagattggcatcttttttgatggatccactggctttgatactg cctgtactcccccaaaacacagcttgggtattggactaatctagagctccctcaggagaactctttgctgacattaagaaa gagcaacattttgtctttccaggtgaaaatccaaggccaaaaagggagtgactcacctaagatcacagaaggagctgtagcatctctggagcctgaacacttaagttaagcacgactatttcacgcagagggcatgaattc (SEQ ID NO:12225) ggagctglittacccccactctaataggggttcaatataaaaagccggcagagagctgtccaagtcagacgcgcctctgca atccctttttttcagaatggattatttgctcatgattttctctctgctgtttgtggcttgccaaggagctccagaaacag ctcagggctgaagacattatggagaaagactggaataatcataagaaaggaaaagactgttccaagcttgggaaaaagtgtattatcatcagcagttagtgagaggaagaaaatcagaagagttcagaggaacacctaagacaaaccaggtcggagacca tgagaaacagegtcaaatcatettttcatgatcccaagetgaaaggcaagccetccagagagcgttatgtgacccacaac cgagcacattggtgacagacttcggggcctgtctgaagccatagcctccacggagagccctgtggccgactctgcactct ccaccetggctgggatcagagcaggagcatcetetgctggttcctgactggcaaaggaccagcgtcctcgttcaaaacat tggggatgacaatggaceteteagcagaaacacacagteacattegaatte (SEQ ID NO:12226) ctgcgccaggcgaacgggtcctgcgcctcctgcagtcccagctctccaccgccgcgtgcgcctgcagacgctccgctcgc tgccttctctctggcaggcgctgccttttctccccgttaaagggcacttgggctgaaggatcgctttgagatctgagga acccgcagcgctttgagggacctgaagctgtttttcttcgttttcctttgggttcagtttgaacgggaggtttttgatcc cttttttcagaatggattatttgctcatgattttctctctgctgtttgtggcttgccaaggagctccagaaacagcagt

cttaggcgctgagctcagcgcggtgggtgagaacggcggggagaaacccactcccagtccaccctggcggctccgccggt ccaagcgctgctcctgctcgtccctgatggataaagagtgtgtctacttctgccacctggacatcattttgggtcaacact cccgagcacgttgttccgtatggacttggaagccctaggtccaagagagccttggagaatttacttcccacaaaggcaac agaccgtgagaatagatgccaatgtgctagccaaaaagacaagaagtgctggaatttttgccaagcaggaaaagaactca gggctgaagacattatggagaaagactggaataatcataagaaaggaaaagactgttccaagcttgggaaaaagtgtatt tatcagcagttagtgagaggaagaaaaatcagaagaagttcagaggaacacctaagacaaaccaggtcggagaccatgag aaacagcgtcaaatcatcttttcatgatcccaagctgaaaggcaagccctccagagagcgttatgtgacccacaaccgag cacattggtgacagacttcggggcctgtctgaagccatagcctccacggagagcctgtgggccgactctgcactctccac cctggctgggatcagagcaggagcatcctctgctggttcctgactggcaaaggaccagcgtcctcgttcaaaacattcca agaaaggttaaggagttcccccaaccatcttcactggcttccatcagtggtaactgctttggtctcttctttcatctggg gatgacaatggacctctcagcagaaacacacagtcacattcgaattc (SEQ ID NO:12227) gatateetattaataeagagataeagaaagaaataeataaaaaatagttttateaaataettteeageatteaagtgtag cctcaaaagcaagaataggccaggaqtggtggctcacgctgtaatccacagcactgtgggaggccaaggtaagaggattg cttgaggccaggatttcaagaccagcctaggcaacatagtgagatccctatctctacgaaaaaattttaaaacttagctg 15 ggcatggtgcttgagcctgttgtcccagctactcaggaggtgaagtaggagtgtcacttgagcccaggaggttgaggctg 20 gccttaagtggaggaggggtgggggcatcaagcttgtaaaactggtttgttggggttctccttctcccctcatttcttgatttgttggggaaaatgtcttgctggggagctgcctggcgagtgccctagctgccttctgtgggcttgaatggggcttccctc 25 cttgcaaattcaggattcaaagagacaggggcaccattatatttggcacggtggggccttccaggtctgaaatcctgcat ccacctgaaggctgggcgttgctggaacctgcaggggcagcctcagcaaggtggggtggcgtggagtggggtgggagaag ggactccagctgaagtagaacccaggctggacctgagaatattggggagggcatgggcggtggtttccgggtaggggcct 30 cctgccaagacatatttcccaggccacctttcttccgcgggagtgttggggggaggcgctgcttggaacctgtgaatgt gacatcagetetectetecteteccaaggteggetttggagaggaggteagggeaceettgeetggeacaggeacgetg gcttccggctcagtgccgcctgctcccgggagctgtgcgctccctgggccccggggctaggctgaggtaagcgcacagc ggaggccaggcgcgccagaggcctgggggatagggtggaggcatctctgggtgtgggtgtgggtgtgggtgtgggtgtgggtgtggg ggagagttcttgcctctctctctcccatctccaactcttgcttcagtggctcttttagaggatgcatgtcattatggacc ttgctgttgggataaaactgtccttttgattttagaaggaggaaaaaaaggtttcccagcatgtgtgttgtgccag tettggaaatteateegtgettgaatteeaceteeateeeegaaaaaactggagtaaaacaaaagaggagatggacaaagtgtgtatttgatggeateeeetgggaagagactaaaatttateeeataggtettactgggecactgtgagegetttg 40 ggcatttccttctcagcaccaccttccttgcatattcacttaaccttgtacaagaacacctttttgccctaaatgaagac 45 ttcctttttgtcctagtaaaacatcagccctgtagctcttcatctccccctggtgttcttctcccgccatgtcttaaga ttggtggcaccgaccaatcttaagatttaagttctgtgtgaaaaacacctttgctttcaatcagtttatcagcctcctc cgcaggggaatgtggacacacaaaagaacttatcggggcttctcatcagtgatagggaaaagactggcatgtgcctaaac gagetetgatgttatttttaageteeetttettgeeaateeeteaeggatettteteegatagatgaaagaaetteage 50 aaaaaagacccgcaggaaggggcttgaagagaaaagtacgttgatctgccaaaatagtctgacccccagtagtgggcagt gacgagggagagcaltcccttgtttgactgagactagaatcggagagacataaaaggaaaatgaagcgagcaacaattaa aaaaaattccccgcacacaacaatacaatctatttaaactgtggctcatacttttcataccaatggtatgactttttttc tggagtcccctcttctgattcttgaactccggggctggcagcttgcaaaggggaagcggactccagcactgcacgggcag gittagcaaaggtetetaatgggtattttetittettageeetgeeeegaattgteagaeggeggegtetgettetg aagttagcagtgatttcctttcgggcctggcttatctccggctgcacgttgcctgttggtgactaataacacaataacat tgtctggggctggaataaagtcggagctgtttacccccactctaataggggttcaatataaaaagccggcagagagctgt ccaagtcagacgcgctctgcatctgcgccaggcgaacgggtcctgcgcctcctgcagtcccagctctccaccgccgcgt gcgcctgcagacgctccgctcgccttctctctctcggcaggcgctgccttttctccccgttaaagggcacttgggctga 60 65 taaacactattttaatagtgtgttaacgtgtaaaatatttaagcattccagcttgaagccaaggaattgtatccagtcgt ccccccgcaggcggtttctgggtgaagcagatgttttctttaaaatttgtcatcattgactttaggtttcttttggcagg tttttggcacccaaaacagtgtgagctctcttttcagctttattcacctgtgctgggaggggagctaggataattcttgg 70 tcgtgaccctgactaaagagaaaggatgtcaagggaatgaaaatcctggaatgtgtctgatcatttgaaatgtacaaaat tgggcagataagctgcatggctaaattgttaggaggaagaggcaaggcagtagtggagaaggggaggcagtggatccca cacaageetgatgeecagggatteggaatteaaaateeceecageetacetteagteecetgaeetgetteteageecea 75 cacctaattttgaaagatatacatcatctggggtaccctgtgccctacacagcatgtgaagtggatgggtaccccctaaa gagagggtcatcctgaatggggaagtggccccaaagctaggaataactgtgatttcttgtctttagtcatgtgccaatgt agcatttccctgagcctgcttcaagaggggtgggggaagtcccttttcaggtgtttatctcctctgcatttgtgtaatct ccctgaaggtggataagccaagggcatgagggggaggcaaaaggtgaactcatgttaaggagggaaaaaaataaagagcc ctttttctgtgtttcttgctgatggcaggctgtgtgcttcatctgcttttatctgctctgctagctctgactctactgt gatccagcatgtctctcggcgtttgaggagacatccccactgacctgctcttttctctccccagcagtcttaggcgctga getcagegeggtgggtgagaaeggeggggagaaaeceaeteceagtecaecetggeggeteegeeggtecaagegetget

cctgotcgtccctgatggataaagagtgtgtctacttctgccacctggacatcatttgggtcaacactcccgagtaagtc tctagagggcattgtaaccctattcattcattagcgctggctccactggagcccagttttagagtttcttttctagggac tctgaaggtagtccttctaacaccatccaagtgcctcagtggggacagtttccctctattcctgaaaataacgacagctt cgttettagcaaccaaggggagggtettetgaggccccgtagetcaggctactcatgatgggacaagcaggaggccactg cacgtttcaaatgaggaactttcagtgagagggcctcagggggacactctcacagtggcatctgatggggtttcgggaat aattqccgaggtcagatgtgggttagtgcaacctgtgcttctcatgggagggtggagactgagaggcagaagtgatgat tgtagcagagctagaactggagcccggatttcctttgctgctatattttccctttagaaatgcccatttcagaactgaaa tagaaatactgtccataggcttctctttcacctacagagaagaaaagcagatttcctccttctgccctggacactagttc 10 atcatctgtcggaagcagtcataaacaagcacacatttactatgcatacaatgtaccgttatgacaaaggaggaccaaaa tccaaacaatatcaaaccacaccaaaaaccacaaggagcctaataattactaaggtgatacttccaaagggaggacttta tttcttagatgagaatgaaaatggacacattggaaattattggagagccctctggctatgagtccttccacaaccatatg gtaccaccgactggcaggagaaatgtgtgaacatgtgcctcctctccccaaccactggggccggtggggtgacggtggca cttttagcagtatcctccgtggtttgagttgaaaataagttttaaaaatcctgtgagtcatggttttgcattgaaacctc 15 ttcccactgtgtacccacaaatagttaactaaatagaccattagaaaaggaagaaaatataaagcagatgccaagcagag atgtcctaatttttgacaaaaaagcaatgttgcttgtgtcaagaagaaactgaactttgtgaagagttgaaatggaattc atgtgtcattttaaagactattaattacactaatatagtttetttetetetttggataataggcaegttgtfeegtatgg 20 gtgctagccaaaaagacaagaagtgctggaattttttgccaagcaggaaaagaactcaggtgagcagaaacacctttgctt ttcaatcagtttaacagcctcctgaactccttcctatcatggtactgccttcctgttttagagagactaacagagacatt gaaagtcagggtaaagctgaatataacattgctgaaatgtttttccttgtgtattttaacagggctgaagacattatgga gaaagactggaataatcataagaaaggaaaagactgttccaagcttgggaaaaagtgtatttatcagcagttagtgagag 25 tcacaagaacaactagccccagtcagtgatgccagcagcctgttcctccagcccttcttacccgggcaggtgaaagactt tccagagatgcctttgtcattgggttatatacagcctttgcctcttgagtcaatgtatttaccactttccctgagaaat 30 cgaaaatcattttggggagcggacatttagaaaaagaatcaaagtgtcatggataatcaaattcttcaataagttgcagt tattcagatggccaaaggaaaaataaagtcattagatagggttggtagaatttagaacatgctgtttttcaggtttatgg tctttttttttttttttttttttttttaaatagggaaatgtgtttggtgcagagccaatgtcattccaaaaagctctctc ttttcctggtcagtcatgtgctgggacagagaagggatctggattaggcaacatcatagagttgctctgagctgctcttt ggtgataacccttccaaatcctaaactttttggaattcacaagctcaaaggaggaaacctactctctgatctaccacatg 35 ttctgcatttttctatcatggtctatggaaacttctctttagaaatccagtggcaagaagttctatgattaaagtgttctg agctcaggccaggcagtcatgaactacttctgagttgtttactactgattgtggggcagcctcagctatcggtttcttc aattttttatgggtttttattatgccaactattaaatcaacattacagttcttccctctgtatttctcctgtaaaacatt aggcctgcaaaaaaaaaaatctttttaaaaaataattgccataaagtatttgctctgggcctactgtatgcttcttttyt 40 ttttctctcttttcaactaagtcaccgtcaatttattaagatggccataactattcaaaacctatgctgagttcctcaag tactgcccacttccccttagacttgaccatatgacccttgctccccattctaagcataggggcaggctttatttttaca atggtaatagatgatatcacttgaggttttatcaaagagttgcggcgggtggtgaaagttcacaaccagattcaggtttt gtttgtgccagattctaattttacatgtttcttttgccaaagggtgattttttaaaataacatttgttttctcttatct tgctttattaggtcggagaccatgagaaacagcgtcaaatcatcttttcatgatcccaagctgaaaggcaagccctccag agagegttatgtgacceacaacegageacattggtgacagacetteggggeetgtetgaagecatageetecaeggagag ccctgtggccgactctgcactctccaccctggctgggatcagagcaggagcatcctctgctggttcctgactggcaaagg 50 atgaaactgttactaccataaatcaggatatgtttcatgaatatgagtctacctcacctatattgcactctggcagaagt attiteccacatttaattattgeeteeccaaaetetteeccaceeetgetgeeeetteeteeateecceatactaaateeta 55 gcctcgtagaagtctggtctaatgtgtcagcagtagatataatattttcatggtaatctactagctctgatccataagaa aaaaaagatcattaaatcaggagatteccetgteettgatttttggagacacaatggtatagggttgtttatgaaatatat tgaaaagtaagtgtttgttacgctttaaagcagtaaaattattttcctttatataaaccggctaatgaaagaggttggatt gaattttgatgtacttatttttttatagalatttatattcaaacaatttattccttatatttaccatgttaaatatctgt ttgggcaggccatattggtctatgtatttttaaaatatgtatttctaaaatgaaattgagaacatgctttgttttgcctgt 60 caaggtaatgactttagaaaataaatatttttttccttactgtactgatttggaatcattactgaaatttgtaaggagtg ggccaacgtgattaagtaccataaaggcaaataaatggttaaagacggtttcatagaaagtgacaattagaaggatatt acggtctaagctaattatataaagaattttatctgtatcttaaatgttgattttatactgcattgaggtaaaaacacaaa acaaaaaagcagctttaacacctctgtcttctctttgggtagcagcctcctgcttctccttcacctgaaaaattctccagg gacttcatccattaacttggctcaggctattggcaggattcacagtttaagctgatggtgtgggagagatgctttatcc atattaatggactgaaggaagtaatggcaagacaaccccccaaaacatacctaattatacaaagttatataccaaagttg cttttagaaaatggcctgctcagagcaagtagaggtttccaatggctttttattttctcacattaaggatgttgtttctt tattgcaattgcagtattgcaaatggtcactactaactgaattctctaagagcttgattagccctcgagaatcttccttg 70 cccttctctaatagtgtctgaaggaattcctggcatttaacaaatattagcatgtagtgatcactgtcgtcctaacagtg acacateagaaggattteaaataacagtetteaggeatgegtaateaatgteetgtgeagagteteegteeteattgate ctcatttttctctttaaggcacagtccaatgtctttggggaattgtttataaagcttactttatccataaactgtttctcagtgcgtgactctgaagaaattttgaagttttgcccatgttgacaaggtgcttggtctgaactttggccagtatttaatc 75 qatctaatacatttaagaggaagtcagaatcagagaagccactgaacaaaacagtccaaacggagcatagtaagtcagat tgatgagtttttggttgggtttttcatcagtcaaacccttgagccccctttcccatgcttcctgcttcagtatccagtag gaaaaatgaaagggatgatgtagacactctagggcatgaggatttgcagtaaataagttgggagactcacagaaaattaa tatttttcaaacatgaagacgaaacattcaattatattacagtccacatcagcttgaagggtaaactgatgggatgatct ጸበ gtcacatttettgctctgtttccagtaaaagcatggtttctggaaacccacttaggacagctttetcttttacactgat agcccaggcaagetttgatetcagaactccagaaaccagagaactetaggtggaatgtggtaacttttgccagggcagag ggaacacctactaataggtacttcatttgcaccaccagagattggcatcttttttgatggatccactggctttgatactg

```
cctgtactcccccaaaacacagcttgggtattggactaatctagagctccctcaggagaactctttgctgacattaagaaa
       gagcaacattttgtctttccaggtgaaaatccaaggccaaaaaagggagtgactcacctaagatcacagaaggagctgtag
       catetetggageetgaacaettaagttaageacgaetattteaegeagagggeatgaatteggagetgtttaceeecaet
       agggacctgaagctgtttttctttcgttttcctttgggttcagtttgaacgggaggtttttgatccctttttttcagaatg
gattatttgctcatgatttttctctctgtgtttgtggcttgccaaggagctccagaaacagcagtcttaggcgctgagct
       cagegeggtgggtgagaaacggeggggagaaacccactcccagtccacctggcggctccacactcccgagcacgttgttctctgtccctgatggataaaagagtgtctacttctgccacctggacatcatttgggtcaacactcccgagcacgttgtt
10
       gorugtategategategateaaguggggateacettegagateattegagtategggtategggetegagateggetegagateggtegagateg
cogtateggactteggaagcoctaggtocaagagagootteggagatttacttoccacaaaggcaacagacogtgagaatag
atgocaatgtgctagccaaaaaagacaagaagtgotggaatttttgccaagcaggaaaagaactcagggctgaagacatta
       15
       agcaggagcatcctctgctggttcctgactggcaaaggaccagcgtcctcgttcaaaacattccaagaaaggttaaggag
       ttcccccaaccatcttcactggcttccatcagtggtaactgctttggtctcttctttcatctgggggatgacaatggacct
       ctcagcagaaacacacagtcacattcgaattcctgcgccaggcgaacgggtcctgcgcctcctgcagtcccagctctcca
20
       ttgggctgaaggatcgctttgagatctgaggaacccgcagcgctttgagggacctgaagctgtttttcttcgttttcctt
       tgggttcagtttgaacgggaggtttttgatccctttttttcagaatggattatttgctcatgattttctctctgctgttt
       Cactoccagtocaccotggoggotocgcoggtocaagogotgotoctgotoctgatogataaagagtgtgtctact
25
       tctgccacctggacatcatttgggtcaacactcccgagcacgttgttccgtatggacttggaagccctaggtccaagaga
       gccttggagaatttacttcccacaaaggcaacagaccgtgagaatagatgccaatgtgctagccaaaaagacaagaagtg
       Ctggaatttttgccaagcaggaaaagaactcagggctgaagacattatggagaaagactggaataatcataagaaaggaa
       aagactgttccaagcttgggaaaaagtgtatttatcagcagttagtgagaggaagaaaaatcagaagaagttcagaggaa
       cacctaagacaaaccaggtcggagaccatgagaaacagcgtcaaatcatcttttcatgatcccaagctgaaaggcaagcc
30
       ctccagagagcgttatgtgacccacaaccgagcacattggtgacagacttcggggcctgtctgaagccatagcctccacg
       gagagecetgtggecgaetetgeaeteteeaecetggetgggateagaggaggateetetgetggtteetgaetggeaetggeaetggeteetgaetggeaetggeaetggeaetggeteetgaetggeteetggeteetggeteeaetggetaeggaggteeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggeteeaetggete
       ggtaactgctttggtctcttctttcatctggggatgacaatggacctctcagcagaaacacacagtcacattcgaattc (SEQ ID NO:12228)
       ggtaattgctttggtetttttttattetggggatgaatatggaettteagtagaatataggtetaatatagttaatttgattecaaa
aggggcagetggattagttettetttattggggctacaagagaatgggaaacatggttecaaaactgtteactteccaaa
ttgtetgettettetgttggggettatggggtggaggggetcaetteatgcagaaccecaagtttacgagggetcag
tggtttgccatccagcacatcagtetgaaccccetcgatgcaccattgcaatgcgggcaattaacaattategatggeg
ttgcaaaaaccaaaatacttttettegtacaacttttgctaatgtagttaatgttgtgggtaaccaaagtatacgctgce
35
       ctcataacagaactctcaacaattgtcatcggagtagattccgggtgcctttactccactgtgacctcataaatccaggt
       40
       acgggattetecacggtateetgtggttecagtteacetggataceaceatetaageteetgtateageagteeteatea
       tcactcatctgccaagctcctcaatcatagccaagatcccatccctccatgtactctgggtatcagcaactgtcctcatc
       agtetecatacecetteagettteetgagetgaagteeettgtgaaecetgcaataaaetgetttgcaaatteaaaaa (SEQ ID NO:12229)
       gaacaaccagctggatcagttctcacaggagccacagctcagagactgggaaacatggttccaaaactgttcacttccca
       aatttgtctgcttcttctgttggggcttatgggtgtggagggctcactccatgccagacccccacagtttacgagggctc
45
       agtggtttgccatccagcacatcagtctgaaccccctcgatgcaccattgcaatgcgggcaattaacaattatcgatgg
       cgttgcaaaaaccaaaatacttttcttcgtacaacttttgctaatgtagttaatgtttgtggtaaccaaagtatacgctg
       ccctcataacagaactetcaacaattgtcateggagtagattecggggtgcetttactecactgtgacetcataaatecag
       ccacgggattetecacggtateetgtggttecagtteacetggataccaectaageteetgtateageagteeteat
       catcactcatcttccagtatctctagtggtctcagtctcatctggtatctattagtcttagtctctagtgtcttagtgtcttagt
catcactcatctgccaagctcctcaatcatagccaagatcccatccttccatgtactctgggtatcagcaactgtcctca
tcagtctccataccccttcagctttcctgagctgaagtcccttgtgaaccctgcaataaactgtttgcaaattc (SEQ ID NO:12230)
ctgccagcagcgtatagttttcacccagagtccagatcccaccggcaaaactctgtctaacacaggatgacttggaatta
gagtccgtatagcagaaagagcagcagggctgtccttgggtatccgttgctcagccaagtcatcaaataaaaaggatgat
       agtaggggagaccagctgcccctgaaccccagaaccagctggatcagttctcacaggagccacagctcagagactgg
55
       gtaagtcaacaatccccagagctgggacaggagggcagcgacagggcagcacctgagggagaggtgagctgaagttagt
       gcttaggagatgtggcacactttggggacaggaagaaaaggaaatgcgacccagagtggcagcagaggggcctgtgggt
       tccaaaactgttcacttcccaaatttgtctgcttcttctgttggggcttatgggtgtggagggctcactccatgccagac
60
       cccacagtttacgagggctcagtggtttgCcatccagcacatcagtctgaaccccctcgatgcaccattgcaatgcgg
       gcaattaacaattatcgatggcgttgcaaaaaccaaaatacttttcttcgtacaacttttgctaatgttaatgttat
       Eggtaaccaaagtatacgctgccctcataacagaactctcaacaattgtcatcggagtagattccggggtgcctttactcc
       gttgcatgtgacaacagagatccacgggattetecacggtatectgtggttecagttcacetggataccatetaage
65
       tectgtateageagteeteateateaeteatetgeeaageteeteaateatageeaagateeeateeeteeatgtaetet
       gggtatcagcaactgtcctcatcagtctccataccccttcagctttcctgagctgaagtcccttgtgaaccctgcaataa
       actgetttgeaaatteatetggaagtgtetgtgtgtetteeteggeegetetgetgteatttagtgacaatetgetetag
       agatttgggtttatcatgaatctctcccccctcaatatctgaccaaattccttgattcccccatcatccttcatgtgatac
       ctgattccaggcctgccttaaaaaaaatccaattgagtcaacttagcattggtctccctagccttaatatctcctctaa
gcaattttccat (SEQ ID NO:12231)
70
       aggggcagctggatcagttctcacaggagccacagctcagagactgggaaacatggttccaaaactgttcacttcccaaa
       tttgtctgcttcttctgttggggcttatgggtgtagagggctcactccatgccagaccccacagtttacgagggctcag
tggtttgccatccagcacatcagtctgaaccccctcgatgcaccattgcaatgcgggcaattaacaattatcgatggc
       75
       agtctccataccccttcagctttcctgagctgaagtcccttgtgaaccctgcaataaactgcttttgcaaattcaaaaaga
       acaaccagctggatcagttctcacaggagccacagctcagagactgggaaacatggttccaaaactgttcacttcccaaa
       tttgtctgcttcttctgttggggcttatgggtgtggagggctcactccatgccagaccccacagtttacgagggctcag
       tggtttgccatccagcacatcagtctgaacccccctcgatgcaccattgcaatgcgggcaattaacaattatcgatggcg
```

ttgcaaaaaccaaaatacttttcttcgtacaacttttgctaatgtagttaatgtttgtggtaaccaaagtatacgctgcc ctcataacagaactctcaacaattgtcatcggagtagattccgggtgcctttactccactgtgacctcataaatccaggt acgggattetecacggtatectgtggttecagtteacetggataceaceatetaagetectgtateageagteeteatea tcactcatctgccaagctcctcaatcatagccaagatcccatccctccatgtactctgggtatcagcaactgtcctcatc agtetecatacccettcagetttcctgagetgaagtecettgtgaadeetgcaataaactgetttgcaaatteetgeeag cagcgtatagttttcacccagagtccagatcccaccggcaaaactctgtctaacacaggatgacttggaattagagtccg tatagcagaaagagcagcagggctgtccttgggtatccgttgctcagccaagtcatcaaataaaaaggatgattgcacaa gagaccagctgccctgaaccccagaacaaccagctggatcagttctcacaggagccacagctcagagactgggtaagtc aacaatccccagagctgggacagggaggggcagcgacagggcacctgagggagaggtgagctgaagttagtgcttagg agatgtggcacactttggggacaggaagaaaaggaaatgcgaccccagagtggcagcagaggggcctgtggggttgagaca ctatagagtgtcataaccgagaccggataggggagtagttacttcttcttcttacaggaaacatggttccaaaa ctgttcacttcccaaatttgtctgcttcttctgttggggcttatgggtgtggagggctcactccatgccagacccccaca gtttacgagggetcagtggtttgccatccagcacatcagtetgaacccccctcgatgcaccattgcaatgcgggcaatta acaattatcgatggcgttgcaaaaaccaaaatacttttettcgtacaacttttgctaatgtagttaatgtttgtggtaac 20 agcaactgtcctcatcagtctccataccccttcagctttcctgagctgaagtcccttgtgaaccctgcaataaactgctt tgcaaattcatctqqaaqtqtctqtqtcttcctcqqccqctctqctqtcatttaqtqacaatctqctctaqaqatttq ggtttatcatgaatctctccccctcaatatctgaccaaattccttgattcccccatcatccttcatgtgatacctgattc caggcctgccttaaaaaaaaatccaattgagtcaacttagcattggtctccctagccttaatatctcctctaagcaattt 25 tccat (SEQ ID NO:12232) cacaggagctacagcgcggagactggaaacatggttccaaaactgttcacttcccaaatttgtctgcttcttctgttggg gcttctggctgtggagggctcactccatgtcaaacctecacagtttacctgggctcaatggtttgaaacccagcacatca atatgaceteccageaatgcaceaatgcaatgcaggteattaacaattateaacggegatgcaaaaaccaaaataettte cttcttacaacttttgctaacgtagttaatgtttgtggtaacccaaatatgacctgtcctagtaacaaaactcgcaaaaa 30 ttgtcaccacagtggaagccaggtgcctttaatccactgtaacctcacaactccaagtccacagaatatttcaaactgca ggtatgcgcagacaccagcaaacatgttctatatagttgcatgtgacaacagagatcaacgacgacgaccctccacagtat ccggtggttcagttcacctggatagaatcatctaagctcctgtatcagcactcctcatcaccactctctgccaagctc ctcaatcatagccaagatcccatctctccatatactttgggtatcagcatctgtcctcatcagtctccataccccttcag ctttcctgagctgaagtgccttgtgaaccctgcaataaactgctttgcaaattc (SEQ ID NO:12233) $\verb|ctgcagg| cagcatatagttttcatccagagtttggatctaaccagcaaaactctgtcttacacaggatgacttggaatta| \\$ gagteettalageagaaagageageaggetgteettgggtateegttgeteageeaagteateaaataaaaaggatgat acceaccaagggatgetttatttaaacagtteeaagtagggagaccagetgeecetgaacccagaacaaccagetggateagtteteacaggggetacagetgggaactgggtaagteaaccagagetgggacagaaggggcagcaatggg gttacttctctttttcttacaggaaacatggttccaaaactgttcacttcccaaatttgtctgcttcttctgttgggg cttctggctgtggagggctcactccatgtcaaacctccacagtttacctgggctcaatggtttgaaacccagcacatcaa tatgacctcccagcaatgcaccaatgcaatgcagtcattaacaattatcaacggcgatgcaaaaaccaaaatactttcc ttcttacaacttttgctaacgtagttaatgtttgtggtaacccaaatatgacctgtcctagtaacaaaactcgcaaaaat tgtcaccacagtggaagccaggtgcctttaatccactgtaacctcacaactccaagtccacagaatatttcaaactgcag gtatgogcagacaccagcaaacatgttctatatagttgcatgtgacaacagagatcaacgacgacacctccacagtatc cggtggttccagttcacctggatagaatcatctaagctcctgtatcagcactcctcatcatcactcatctgccaagctcc tcaatcatagccaagatcccatctcccatatactttgggtatcagcatctgtcctcatcagtctccatacccttcagc tttcctgagctgaagtgccttgtgaaccctgcaataaactgctttgcaaattcatctgaaagtgtctgtgtgtcttcatt agccgctctgctgtcatttagtgacaatctactctagagatttttcttcctctaacctgagacttccgggaaacagagag atttgaagataagagacgctttctgtcatgaaacagcacagtcttatccctctccctgctttaggctgagaagctgaggt ctcaaccgatatctagcaactgtcgaagactcttgctttgatcaagctt (SEQ ID NO:12234) gctgccctgaaccccagaacaaccagctggatcagttctcacaggagctacaggcggagactgggaaacatggttcca aaactgttcacttcccaaatttgtctgcttcttctgttggggcttctggctgtggagggctcactccatgtcaaacctccacagtttacctgggctcaatggtttgaaacccagcacatcaatatgacctcccagcaatgcaccaatgcaatgcaggtca ttaacaattatcaacggcgatgcaaaaaccaaaatactttccttcttacaacttttgctaacgtagttaatgtttgtggt aacccaaatatgacctgtcctagtaacaaaactcgcaaaaattgtcaccacagtggaagccaggtgcctttaatccactg taacctcacaactccaagtccacagaatatttcaaactgcaggtatgcgcagacaccagcaaacatgttctatatagttg 60 catgtgacaacagagatcaacgacgagaccctccacagtatccggtggttccagttcacctggatagaatcatctaagct cctqtatcagcactcctcatcatcactcatctgccaagctcctcaatcatagccaagatcccatctctccatatactttg ggtatcagcatctgtcctcatcagtctccataccccttcagctttcctgagctgaagtgccttgtgaaccctgcaataaa ctqctttgcaaattc (SEQ ID NO:12235) cacaggagctacagcgcggagactggaaacatggttccaaaactgttcacttcccaaatttgtctgcttcttctgttggg 65 qcttctggctgtggagggctcactccatgtcaacctccacagtttacctgggctcaatggtttgaaacccagcacatca atatgacctcccagcaatgcaccaatgcaatgcaggtcattaacaattatcaacggcgatgcaaaaaccaaaatactttc cttcttacaacttttgctaacgtagttaatgtttgtggtaacccaaatatgacctgtcctagtaacaaaactcgcaaaaa ttgtcaccacagtggaagccaggtgcctttaatccactgtaacctcacaactccaagtccacagaatatttcaaactgca qqtatgcqcagacaccagcaaacatgttctatatagttgcatgtgacaacagagatcaacgacgagaccctccacagtat 70 ccggtggttccagttcacctggatagaatcatctaagctcctgtatcagcactcctcatcatcactcatctgccaagctc ctcaatcatagccaagatcccatctctccatatactttgggtatcagcatctgtcctcatcagtctccataccccttcag agagtttggatctaaccagcaaaactctgtcttacacaggatgacttggaattagagtccttatagcagaaagagcagca gggctgtccttgggtatccgttgctcagccaagtcatcaaataaaaaggatgattgcacaagtggactatgtaccaatct 75 cagttccaagtaggggagaccagctgccctgaaccccagaacaaccagctggatcagttctcacaggagctacagcgcg gagactgggtaagtcaacgatccccagagctgggacagaaggggcagcaatggggcagcaactgagggagaagagagctg acgttagtgcttaggagacgttgcacactttgcagacaggaagtaaaggaaatgggaccccagagtggccgcagaggggc caatgcaggtcattaacaattatcaacggcgatgcaaaaaccaaaatactttccttcttacaacttttgctaacgtagtt

aatgtttgtggtaacccaaatatgacctgtcctagtaacaaaactcgcaaaaattgtcaccacagtggaagccaggtgcc tttaatccactgtaacctcacaactccaagtccacagaatatttcaaactgcaggtatgcgcagacaccagcaaacatgt atcatctaagctcctgtatcagcactcctcatcatcatcatctctccaagctcctcaatcatcatcatctct ccatatactttgggtatcagcatctgtcctcatcagtctccataccccttcagctttcctgagctgaagtgccttgtgaa ccctgcaataaactgctttgcaaattcatctgaaagtgtctgtgtgtcttcattagccgctctgctgtcatttagtgaca atctactctagagatttttcttcctctaacctgagacttccgggaaacagagagatttgaagataagagacgctttctgt catgaaacagcacagtcttatccctctccctgctttaggctgagaagctgaggtctcaaccgatatctagcaactgtcga agactettgetttgateaagettgetgeceetgaaceceagaacaaceagetggateagtteteacaggagetacaggee ggagactgggaaacatggttccaaaactgttcacttcccaaatttgtctgcttcttctgttggggcttctggctgtggag ggctcactccatgtcaaacctccacagtttacctgggctcaatggtttgaaacccagcacatcaatatgacctcccagca atgcaccaatgcaatgcaggtcattaacaattatcaacggcgatgcaaaaaccaaaatactttccttcttacaacttttg ctaacgtagttaatgtttgtggtaacccaaatatgacctgtcctagtaacaaaactcgcaaaaattgtcaccacagtgga agccaggtgcctttaatccactgtaacctcacaactccaagtccacagaatatttcaaactgcaggtatgcgcagacacc 15 agcaaacaigttctatatagttgcatgtgacaacagagatcaacgagagaccctccacagiatccggtggttccagttc acctggatagaatcatctaagctcctgtatcagcactcctcatcatcatctgccaagctcctcaatcatagccaag atcccatctccatatactttgggtatcagcatctgtcctcatcagtctccataccccttcagctttcctgagctgaagtgccttgtgaaccctgcaataaactgctttgcaaattc (SEQ ID NO:12236) ccatggaggaaggtcaatattcaggtaggaggactctctggttctaacgttggcagaagcaatgacccttagctactcct 20 ttcacccagaagagaagcggggcttcccagtccctctctgggaaagaggtgaatttctaagaaagggactggtgtgagt 25 ccaggctggaatgcaatggcggatctcggctcaccgcaacctctgcctcccggattcaagcgattctcctgcctcagcct agatacagggtttcaccatgttggccttgaactcctgacctcagatgatccacctgcctcggcctcccaaagtgctggga 30 ctgatcttgaactcctgggctcaagtgatccactcacctctgcctccccagtagctgggatcacaggcatgcaccaccat gcctgctagtttttatagtttttgtagagacaacggcttgctatgttgtccaggctggtcttgaactcccaggcttaag tgatecteccaceteageeteccaaagtgetgggattacaggegtgaacgteegtgecageeaaactgtecatatttgae 35 tgggagcctatttgctcaatcatcaagagacataatctcatggtggggtgtctgctggtaagtgccgggtggcaggatcc caactccaggccgtccttctaacccaagaggccctgcctctgcctagagccttccgtggctccccagggccctctgtgat cggccatagtggtatgattcagtgtgcagtaacagtggttcacatcttgacgctaccactcacctccttcagccctgtgg gaacttgctgcttaacatctctagttctcacccaattctcttacctgagaaatggagataataataacacggacttcacc cgggtgtggggggcaccaggagggccatgcgtgtaatgttatccgggtggcaagcccatatttaggtctatgaaaatag aagctgtcagtggctctactttcagaagaaagtgtctctcttcctgcttaaacctctgtctctgacggtccctgccaatc gctctggtcgaccccaacactaggaggacagacacaggctccaaactccactaagtgagtacgtatctggtgtgttgg 45 gggtcccgggtttgagtccagtcccaccactgcgtgatggggacaaatgacttaccctcttggaacctcagttccactga gagaggccccacagaatgaggacagtcccccagcatcctgccagtaggtttactgagcacctactgtgtgctggtgcttt gaatactcccaatttacagatgagcaaactgagctgctcatccagggagaagccaggactcggactcaggtctgtccagc 50 tgcctccctggacagttccagtcccaggatggtctctgggttcctctcacaatgtcaaaagggccagcttgagctgccgc taatcagagcctggccgcgccacaccccacctccctgaggctccgagagaagggacttacctatagtcaagcagcgaaag aaggtagcccgtgacctccaggcctgaaggaccccaagtcccatgctcctcagcacatagtagatgctttaaagtcagag gacttggtcgggcgcaggcacgcctgtaatcctagcactttgggaggctgaggagggcagatcacctgtggtcaggagtt egagaccagectgateaatatggtgaaaccetgtetetactaaaatacaaaaattagecaggtgtggtgggtgcetg 55 tagtcccagctacttgggaggctaagacaggagaatcgcttgaacccgggaggttggaggttgcagtgagccaagatggtg ccattgcactctagcctgggtgacagagcgagactccatctcaaaaaataaaaaataggccatgcacaggctcacgcct gtaatcccagcactttgggaggccgaggcgggatcatgaggtcaggagtttgagactagcctggccaacatagtgaa aacccgtctctactaaaaatacaaaaattatctggtcatggtggcacgtgactatagtcccagctactcgggaggctgag gcgggagaatcgcttgaacccaggaggtggaggtggcagtgagccgagatcgtgcccctgcactccagcctgggcaacag 60 agcgagactccatttcaataaataaataaataaataaagtcagagcactttacagatgccctggggacattggcagagga 65 cactgggacaccacacagagtctaaaacagctggaagagagggctgccggaacgtctctcaagtttccaagaacttgga aagccaccacggtgaccagatggcgcagaaatcccagtccacgcagatttcacaggaactggaggaacttcgagctgaac agcagagattgaaatctcaggacttggagctgtcctggaacctgaacgggcttcaagcagatctgagcagcttcaagtcc 70 caggaattgaacgagaggaacgaagcttcagatttgctggaaagactccgggaggaggtgacaaagctaaggatggagtt gcaggtgtccagcggctttgtgtgcaacacgtgccctgaaaagtggatcaatttccaacggaagtgctactacttcggca agggcaccaagcagtgggtccacgcccggtatgcctgtgacgacatggaagggcagctggtcagcatccacagcccggag gagcaggacttcctgaccaagcatgccagccacaccggctcctggattggccttcggaacttggacctgaagggagagtt tatctgggtggatgggagccatgtgggactacagcaactgggctccaggggagcccaccagccggagccagggggact 75 gcgtgatgatgcggggctccggtcgctggaacgacgccttctgcgacgtaagctgggcgcctgggtgtgcgaccggctg gccacatgcacgccagccagccagcgaaggttccgcggagtccatgggacctgattcaagaccagaccctgacggccgcct gcccacccctctgcccctctccactcttgagcatggatacagccaggcccagagcaagaccctgaagacccccaaccac ggcctaaaagcctctttgtggctgaaaggtccctgtgacattttctgccacccaaacggaggcagctgacacatctcccg ctcctctatggcccctgccttcccaggagtacaccccaacagcaccctctccagatgggagtgccccaacagcaccctc tecagatgagagtacaceccaacageacectetecagatgeagececateteeteageaceceaggacetgagtatecee agetcaggtggtgagtectectgtecagcetgcatcaataaaatggggcagtgatggcetece (SEQ ID NO:12239)
agtggetetactttcagaagaaagtgtetetettectgettaaacetetgtetetgaeggtecetgceaategetetggt

gcgttgtcagggagtgagtgctccatcatcgggagaatccaagcaggaccgccatggaggaaggtcaatattcagagat gaggagetteceaggaggeggtgttgcaggegtgggaeteagategtgetgetggggetggtgaeegeegetetgtggge tgggetgetgaetetgetteteetgtggeaetgggaeeeeaeaeagagtetaaaaeagetggaagagagggetgeeegga acgleteteaagttteeaagaacttggaaagccaccacggtgaccagatggcgcagaaatcccagtccacgcagatttea caggaactggaggaacttcgagctgaacagcagagattgaaatctcaggacttggagctgtcctggaacctgaacgggct tcaagcagatctgagcagcttcaagtcccaggaattgaacgagaggaacgaagcttcagatttgctggaaagactccggg aggaggtgacaaagctaaggatggagttgcaggtgtccagcggctttgtgtgcaacacgtgccctgaaaagtggatcaat ttcggaacttggacctgaagggagagtttatctgggtggatgggagccatgtggactacagcaactgggctccaggggag cccaccagecggagecagggggggactgcgtgatgatgeggggctccggtcgctggaacgacgacgcttctgcgaccgtaa attcaagaccagaccetgacggccgcctgcccaccccctctgcccctctccactcttgagcatggatacagccaggccca 15 gageaagaccctgaagaccccaaccaccaccacctctttgtggctgaaaggtccctgtgacattttctgccacc caaacggaggcagctgacacatctcccgctcctctatggcccctgccttcccaggagtacaccccaacagcaccctctcc agatgggagtgccccaacagcaccctctccagatgagagtacaccccaacagcaccctctccagatgcagccccatctc ctcagcacccaggacctgagtatccccagctcaggtggtgagtcctcctgtccagcctgcatcaataaaatggggcagt gatggcctcc (SEQ ID NO:12240) 20 ccaaatagaacaggaacttggaacaagcagaatttagcataatgaatcctccaagccagggtgagtgcagaaagcttggg 30 aactcctgggctcaagtgatccactcacctctgcctcccagtagctgggatcacaggcatgcaccaccatgccctgcta gtttttatagtttttgtagagacaacggcttgctatgttgtccaggctggtcttgaactccaggctggtattccacccaggctgatcttgaactcccaggctgatcttccaccccaggctgccaactgtccatatttgacctgaatatt 35 tttccccttcctctgcctctctctctctttttttttttgctgggactcaaacctgggacatttgacctgggagcct atttgctcaatcatcaagagacataatctcatggtggggtgtctgctggtaagtgccgggttggcaggatcccaactccag gccgtccttctaacccaagaggccctgcctctgcctagagccttccgtggctccccagggccctctgtgatcggccatag tggtatgattcagtgtgcagtaacagtggttcacatcttgacgctaccactcacctccttcagccctgtgggaacttgct gcttaacatctctagttctcacccaattctcttacctgagaaatggagataataataacacggacttcacccgggtgtgg ggagcaccaggagaggccatgcgtgtaatgttatccgggtggcaagcccatatttaggtctatgaaaatagaagctgtca gtggctctactttcagaagaagtgtctctcttcctgcttaaacctctgtctctgacggtccctgccaatcgctctggtc gaccccaacactaggaggacagacacaggctccaaactccactaagtgagtacgtatctggtgtgttgggggttggcc catgggcagtggagatcaaagcgcccttggaagaaacgaccttgggctgagcctcaagggatgaccagcaggaggtcaca 50 cgtgacctccaggcctgaaggaccccaagtcccatgctcctcagcacatagtagatgctttaaagtcagaggacttggtc gggcgcaggcacgcctgtaatcctagcactttgggaggctgaggggcagatcacctgtggtcaggagttcgagaccag 55 ctacttgggaggctaagacaggagaatcgcttgaacccgggaggtggaggttgcagtgagccaagatggtgccattgcac tetageetgggtgacagagegagactecateteaaaaaataaaaaatageeatgcacaggetcacgeetgtaateeca gcactttgggaggccgaggcggatcatgaggtcaggagtttgagactagcctggccaacatagtgaaaacccgtct ctactaaaaatacaaaaattatctggtcatggtggcacgtgactatagtcccagctactcgggaggctgaggcgggagaa 60 tegettgaacceaggaggtggaggtggagtgagecgagategtgeeeetgeactecagcetgggeaacagagegagaet ccatttcaataaataaataaataaagtcagagcactttacagatgccctggggacattggcagaggagaaggctga ggcctgggttatgggctcttagcatttctcagtgggacgtggcacagagtagatgttcataaatgtttagaatctgaagaccactgtgcgcagcccggcaccaaaaacctcaggtatgctgtgatctcattggatccctcctgcttaaacctctgtet 65 70 75 gtcgctggaacgacgccttctgcgaccgtaagctgggccctgggtgtgcgaccggctggccacatgcacgccacacg agcgaaggttccgcggagtccatgggacctgattcaagaccagacctgacggccgcctgccaccccctctgccctct ccactcttgagcatggatacagccaggcccagagcaagaccctgaagacccccaaccacggcctaaaagcctctttgtgg ctgaaaggtccctgtgacattttctgccacccaaacggaggcagctgacacatctcccgctcctctatggcccctgcctt cccaggagtacaccccaacagcaccctctccagatgggagtgccccaacagcaccctctccagatgagagtacacccca acagcaccetetecagatgcagececatetecteagcaccecaggacetgagtatececageteaggtggtgagteetee

ccaagcaggacgccatggaggaaggtcaatattcagagaatcgaggagcttcccaggaggcggtgttgcaggcgtgggac tcagatcgtgctgctgggggctggtgaccgccgctctgtgggctgggtgctgactctgcttctcctgtggcactgggaca ccacacagagtctaaaaacagctggaagagggctgcccggaacgtctctcaagtttccaagaacttggaaagccaccac ggtgaccagatggcgcagaaatcccagtccacgcagatttcacaggaactggaggaacttcgagctgaacagcagagatt gaaateteaggaettggagetgteetggaacetgaacgggetteaagcagatetgagcagetteaagteecaggaattga acgagaggaacgaagcttcagatttgctggaaagactccgggaggaggtgacaaagctaaggatggagttgcaggtgtcc agcggctttgtgtgcaacacgtgcctgaaaagtggatcaatttccaacggaagtgctactacttcggcaagggcaccaa 10 gcagtgggtccacgccggtatgcctgtgacgacatggaaggcagctggtcagcatccacagcccggaggagcaggact tcctgaccaagcatgccagccacaccggctcctggattggccttcggaacttggacctgaagggagagtttatctgggtg gatgggagccatgtggactacagcaactgggctccaggggagcccaccagccggagccagggggaggactgcgtgatgat gcggggctccggtcgctggaacgacgccttctgcgaccgtaagctgggcgcctgggtgtgcgaccggctggccacatgca cgccgccagccagcgaaggttccgcggagtccatgggacctgattcaagaccagaccctgacggccgcctgccaccccc 15 tctgcccctctccactcttgagcatggatacagccaggcccagagcaagaccctgaagacccccaaccacggcctaaaag cctetttgtggctgaaaggteectgtgacattttctgccaccaaacggaggcagctgacacateteccgeteetetatg gcccctgccttcccaggagtacaccccaacagcaccctctccagatggagtgcccccaacagcaccctctccagatgag agtacaccccaacagcaccctctccagatgcagcccatctcctcagcacccaggacctgagtatccccagctcaggtg gtgagtcctcctgtccagcctgcatcaataaaatggggcagtgatggcctcc (SEQ ID NO:12241) gtaagtatcttccctctgtggctaggaagacaaggaatacatttttaaatgtctcctaaagcaaggacctgaaaccagct 20 ctatgggattattcttgttcctctttggtcaatgcagagacatgggaagaaccaccaaaggtcatgagggtctcttccag gaggccaagagggtgctggccctttacccagtggaagaaaaaggcaagggtgaggctttgtagactttcccattcggagg taatgatgcctccttcagccccacttcttcaaactgactccacctgctcccatctccacacccctccgtttctcatttag ccaaagcacatcatccttgcagcccaccactcagcttggccaggtgcgagacatctttccccacttcatacctcccctcc 30 ggccaggtgatgtttgcctcctcag (SEQ ID NO:12242) gatcacctgaagtcaggagttcgagaccagcctgaccaacatggagaaaccccgtctctactaaaaaatacaaaattagtt gggcatggtcgtgcatgcctgtaatcccagctactcaggaggctgaggcaggagtatcacttgaacccaggagacggagg tttttttgtcaacccatgtgggtatgaaattgtttctcattatttgcatttcactaattactagtgaggtcaaacatttt ttccctcatttcttatccattaaagtttattctgtgaattgccagttcatggccattttgggggtgtagtttttcttact gatttattgaagtttaatgtttttctggaaactaatattttgctagttgtgtgaattgtaaatatcttctcccactgtat tttttttttgagatggagtttcgctcttgtttcccagactggagtgcagtggcatgatctaagctcactgcaaccttcac ctcccgggttcaagtgattctcctgcctcaggcctcctgagtagctgggattacaggtgcccgctaccatgaccagctaa ttttttgtatttttagtagagacggggtttcatcatgttggccaggttggtctcgaactcctgacctcaggtgatccacc cgcctcggccttccaaagtgtagggattacaggcatgagccagtgagctcagcctctatgtgcaattcttaatgtcaagc tagcaaagttgagagaggcagcttggtggtggaaagaacatgggtattggatccgatagccttaggttcaaatcctgg cttcttcaqtaattatcttctqtaattttaqccaaqtgtttaatttccttgagactcagtttctcgaagatgaagtagaa aatggctttcaccaggttgttgtaaagactgaatcaaatagtgtgcatgaaaattgcaaggcatagtgctcaggacatag 50 ttaacattcttaaatatatgttgaggaatggtgtgcacctgaaaattcctataaaagctgcaaatatacatgccttttga tccagctgttccacttcaggatatccttactcatgtgtgcaaagcaattttttgtagaaatgtttgtaatagcaaaagac tggaaacaactgaaatgtacactgctagggaactgattactctctggtatgtccacgcaatgcagctctatgaaaaaaag gagtacgtgtcaagatatattaacaaataaagtacagaatattgtactgtacttatcccttttgtgtttaacaaaagaaa gaaaaggagaaaaattagaatatagtatatattigcetttatgtgcaaaaaaaggaaatcaetttttgttttttgaga cagggtctcattctgtcacccaggctggggtgcagtggcgctatcacggctcactgcaacctcaacctcccaggctcaag caaatttgcccattgtgcaaatatgttgcaaatatattttctcagtttgtcatttatcttgatttttcttatggttttaa aaaaatgtgattggatttatggtttctggcattgaaccatagttataaatgtgattcttactctgaggttgtccagggaa tcttctaattttcttaattttcatcttttaaaaacagctctattgatgcataattgatatacaaaaatagcatatatttactactatttgatgatgatgtttccacctattgatgatgatgatgtttcc agtatctacctcattgttctaattattcgagcttcaggatacattttaatacttctgggtaggaacagaaccttctcgtt actcttacaaaattttcttctttattctggtttatttttcctaagaactttaaaagttggcactgaattccaaaatagaa cacccaaaaacctgttgatttttccactgggattatgttaaattttcgggttaacttaggggaaaaccattatttcatga taaaaaaatcatccactatgttcaatgaaataaaaggccagatttaaaaatttggcaaggagttgaaaactataaaaagg aaccaaataaaaattcttttttttgcccccataaggcagaagaaatacaaattctacaactgaaaaaatataatatctgat attaagaaatcaataaatggtttattatattagctacatttgaagagacaactaaaaaagaaaaatattttcaaaccaac acataggactgcatttgcagaatagaagagataatggggagatagcaacatttggagaaaaaataacgaacattttt tatttaaagtgcctaacttggctgggtggtggctgacacctgtaatcccaacactttgggaggctgagatgggtggat catttgagcccaggagttcaagaccaacttgggtaacatggcgaaaccccatctctacagaaaaactccaagaaataaaa aacaataatcatctgagtgtggtagcacatgcctgcgtccttgctactcaggaggtggggggtggcagaattaccagggcc tcaaacatttttctttgtgttcagaacattccaaatctagctattttgaaatatacaataaattattaactatagtcatc ctaatgtgctattgaatattattgaattccatctaattatatgtttgtaccaattaaccaatctacttattcctcacc

cccagctcccaccaccctttccagtctctggtaactatcattttattctctacctccatgagatcaaattttttacctc ccatatcgttgtcaatattattatttttcccaccctggctcctaatgaaggatttattgacaatatcactggaatctaaa taattcccattctataaaatttcctcgtttgaagtgtacagtttaatagcttttagtatatccacagaagtgtgcaacca tcaccataataaattttaaaacattttcagcagggcgcagtggctcacgcctgtaatcccagctactcaggaggctgagg caggagaattgcttgaacccaggaggcagaggtttcagtgagccgagattgcaccactgcaatccagcctgggccacaga gtgagactccatctcaaaacaaaacaaaacaaagcaaaataaaacaaagcaaaataaaacaaaaccaaaaacccaacaatt ttgaacattttcatettaccaccetgecaaaaatccetgtteteettagecateaatetteageteeetaeceaetteta taatattetgttgtattgatataetaegitteatteatteatetgaaeatttggattattteeatttttgtetattataa taattetgetatgaacacccatgtatacgtttttgtgtgtggacatgatttcattttccttggatatacacctagcagtaga attgttgagtcalaaagaactclaggttlagcttlelggggagcttccagattattttccaaaatggctgtgccatttta 15 aagetetgataatgecetgtetgggaaaactettttggeetteteaatttetattacattgagageecaagaacecatgg tcagtaacaggccaatgagaagcctcctgcattagtctaggtgaaggataatggtggcttggaccggaatagggtggtag 20 agggagggctgatggtatgtttaaacctatacggatatcacataggtaacatttcaagcctaagaaatgggccgggcgc 25 agtggctcacacctgtaatcccagcactttggaaggctgaggtggatcactttaggtcaggagttcagaacaaacccagcactctctgctaaaacacaaaaattagtggggcatggtgggcacatacctgtaggcccagc tactcaggaggttgaggtgggagaattgcttgaacccgggaggcagaggttgcagtgagccaagattgcgccactgcact ccagcctgggcgacagagcaagactccgtctaaacaaaacaaaacaaaaagccttagaaatgggcaatgccaccaaag 30 ccagagaaactgtgagctgcaaggatgaagtagtaacaaataaaatgccaccaagagaaccagaaggacgactggaaaca aataaacaagaaagactattgcatttagcaacgtgaaaacgttggattactttttactcagaaatcaaaccccaaggata gtgtttcccctccctacggggtttctgcaggtccctttacacgcccccttctacttctttaagtgctaaaagtgattaat ttggggtgatgtttaatttctattcttttggcttataactgtgttttttcattctttgcaacaacagatagtatgttg taatagaaaaatccattgtggtcaatgataacttctgcctgttcctgggcacagggggcatcactattagtgcctgttcc 35 tccctccctactgctgataaggaaacaggggcaggaataatactaatatttgtgctactttttctgcatacccttggcc ctcttttacggcatccacctggaggctgcctgcaggcttgggttgctaagtgcactgcttaatttagaagcgccttttat gagtgcgcaggactggcaagagggaagccgggctgctccacgcctttcacgccttccaccctgcggggtgtccatctgtga aaccactetttaatteteeeteteatataeeeacteteacatatgteeacactaeegtgeettgetttteeteeeeactt ctttcatttagtcattcatttcataaatatttagtagtgcctactctgtatcaggcaaaaccaagtggttatccagttc tcaggcatggatctcccttagcaggaaagtaggtagttgcttaaaaaaagaatcttgaatgtctatttctataatgtttta tatcctcctactcactaattagtgtgcgttagcttattccattgctttcctaaggcactgtcagctgagagcaagttcct 50 gtggatatttatettetgagtggaacacaaatacatttagcaetgtteetggatcagtggagggttaggtetagagetet ccagggcagggggcttggtctggatccatggttgtgctttagggattctgtgagcctcagaaattatacacaaagttctg tgtatatgtaagcctacagttttaatcagattcttgaattaagtcctcatatgagtccaaaaaagatgaataataactga 60 65 ttgtättttttagtagagagggtttgaccatgttagtcaggatggtcttgatctcctgacctcgtgatccgcctca geeteecaaagtgetgggattacaggeatgagecactgtgeeeggecaaatecateteettetttaceaagtetettgge ccggacctgagagggatgggcacaaatcggtcaggcccagtcaggggatttcagcctgatttctctatgtcacttctagg gagagagatggtggattacatctgccagtacctgagcactgtgcgggagagacgtgtgacgccagacgtgcagcctggct 70 acctgcgagcccagctgcctgagagtgctcctgaggaccccgacagctgggacagcatctttggggacattgaacgaatc aaagacctgctttgggtcagcttgggatgagaatgcatccttcagccacttggccaccaacaccccagcccatctgctag ctgatgccagggcagggctggccagaacacctgcattccagagcacagcctggcagaagtgtggaagtctaatgggatgg 75 gtggagaagtgaacattttgtctgaggggaaaggacactgtgtatagtaagacaggggagaggaagctggtggtagtgc atcctggcaaggacacgctggtgaccaggttgcgttggcccaggaaactgagtgggcctggcaacccctcctgtcccct ctgaggtctggtgattgagctgcttttcaagagcaagaagggactttccctgaatcattgatactttccatgatggaggg gatgggtggtggacacccctgaccactggcggtgaggagctctgccatggtgctcatgctaaagtggcatcgactccctt cctgtggcggggctccctgccatgtgccagctctgtgctggccacatgacatgctatctaatttaatcttcccagtggcc ctgttttacagatgaggaaactgctgatgctcagagaagttaactgtcttgcccaaagtcacagaattagtacctggtag

gcctgaatgtgcctggctaagcctgggcccctagcattgcctgtctggctccacacccccacacaagctgtgtcttccct ctccctgcttggggcatttgfgttctgaaccacacatgtttagaggctcttcctgaggccagcttgaggtttgccttcat cattcccaaagaacttttgacttcaatgtgacaaaaaggccaggcggggggctcacacctgtaatcccagcactttggg aggccaaggcaggtggatcacctgaggtcgggagttcaagaccagcctgaccaacatggagaaaccccgtctctactaaa aatacaaaattagctgggcatggtggcacatgcctgtaatcccagctacttgggaggctgaggtaggagaatcgcttgaa cccgggaggcggaggttgcggtgagctgagatagcgccgttgcactccagcctgggcaacaagagcgaaactccatctca aaaaaaaaaaaagtgacaaaaatatgcctagaggcaggggtgggaaaatattcaaactcagaaagtgatggcaattttg actttttttttttttttttttgaagcaatagagacaaggtcttgctatgttgcccaagctggtctccaactcctgggct caagtgatcctcctgcctcggccttccaaagtgttgggatgagaggcctaagccactacgcctggccatgagggcaattt catacaaagccactcatctctttgaccattcagcctatttcacaagcattttttgaaaatgtcaatatcagtaaggcttt acggaggctagatcctgataagattatctcctggattttattctgtaaaatgtaatctgctgaggggctaactgtaatct gggagtgagactgaaagcaactgtcagaagaggtggaaatgagctgattcatttgatcaagaggaattccagcagttgct 15 tttatettaeaagaacagaetattgtetettgatagagetaggaggtagaagecettetetgggggtttecaaaataetgt cactaaggacagtgataatgatggtcaaatctctcaactcatctctcaggccacaccagcctctgagagctggcctgaaa gcagttggccctttgcttactcattttgctcagtgcctcattgaaaactgaattagtttttctcttcctgccaccaccta gaaaataagagaagaagaaaactetettteeetttaatteeaaceetggttagacaateeteatttaetttteatgag agagagagagcatccccacgggaaaagtcaggacaccaccctgctcgggtgtctgggcttctgccccattgcggtcacct 20 25 agcactttgggaggctgaggcgggtggatcatgaggtcaggagttcgagactagcctggccaacatagtgaaacactttc tctattaaaaatacaaaaattagccaggcatggtggtgggcacctgtaatcccagctacttgggaggctgaggcaggag aatctcttgaacctgggagccaggggttgcactgagccaagatggcgctgctgcactccagccctggtgacagtgcgaga atctgtctcaaaaaaaaaaaaaaaaaagaatgaatctcaaaagagacccacacaaatggtatgttggagcttaagttcatta 30 gcttcatggtaaatctacacggtcacacagctggttagggactgaggtgggatgggaacttgtgtccttggacttaattc ttaggeteettataetataeacaetgteeaggaeaaggteettgetettgaaggaetetaagtatgtgtggaeagtaaag aacaggatgatgccctaagatgttatcaaatgagtcctcagtagagtgaaacatctagaattctagagttctatcgctca gggaagggatcgaagggagctgtgggagctgggggagagttcgaggagaaatgaatatttagtagctttctaagaactg gcaggttttggaaggtcatgtctttatagagagtgcctttctatcaggggacacagcattgctcaaagacataaatgcag aaaggaacagggcatgcttcagagcagtgagatgaggagagatgagataatccatgaggccgatgaaccaccagggctgc ttetgagttetgatggggggcetteetgeecacteageteeteettacateeggttttgattgtgggeteagggettag gettaaggacagetttgaacceatteaceeagaceetetgagttgeatgeteagggageteagtgetecataaaacaaaa 40 ttttttgagacggagtcttgctctgtcgcccaggctggagtgcagtggagcgatcttggctcactgcaagctcagcctcc cgggttcacatcattctcctgcctcagcctcctgagtagctgggactacaggcttctgccaccccgcctggctaattttt 45 catatttccttctggactttgcatatatgaaaaggctccactgatgatctagcataggacatgggccacattagtgacaa gaacaccagtgaacaagtctgattttcatggagttatgtcacttatttctgcttaaaagtgtcagcccatctctagagtg gagacatgctggctgatgccatcaactgcttgggattcacctgggtgagtagcaacggctgtaactactcgcaatgggga ggctatattetttaagcttacgctttattttaattttctcatcacatcctttaaccctatggaatcacgagtattgatcc cattttgtaggtgaagaaatcgaggcttaagcaacttatctcccccagatcacagctcatagagacacagataagact tggatacagatciggitattgccacagttigtgaccttacctaagcaattigatgcctattgagtcaccacttcctctgt getettgtatttgagtagetggagatatgteetaagaetteeettaataaeeeettaageaeeaeteagetttaaatggt 55 atettttetaggaaaacateeeeetgggeatttgaggaetteteagetatgtattttagegaettggagaaceaaateea agecaaceatttetagggetgtttetecatagageettggagaattegeeteattgagggeageatgaateeaaaaeeee acattattttctcttttggttgacagagagtggaccaggagagaggcacgtggcctaacatgaccccttctccagaaatg ttcccattgacaccatcaggggcagacatgtttctggagctcgtgggggcacctcagtgccctggggctgtgcagtttga 60 agttccttttcctttctcaggcatccagccctgcgtgtacagagctggagatgaacgtcatggactggttggcaaaaatg attcacatgtactgctacttcctttgaaagaaattaaagagccaacacatgatcacatttccagtatgacttgattcagg 65 tttcttagtctataatctgacaattcctttttggtgtcccattttgtatctcacqqtaaaaqqqqaaaggagaaggcaag gagaggacttctctttctctccctgctaggttcaggagatccccttgcagtgagagcaattaacagcataaactgattaa cggtatcctctgaccctatcttctggatacttgtcaaattatggttcttcaaatatttctttttttcaagagtagtgcca 70 tgactcaccctgtaatctcagcacattgagaggctgagacagatggatcacttagcccaggagttcaaaccagcctgggc aacatggtgaaactgatctctccaaacaacaaattagctgggtgtggcatgtgcctgtagacccagctacttggg atgctgaggtaggaggattgcttgagcccagaagattgaggctgcagtgggctatgattgtgccactgccctccagcctg ggcgacagtgtaagaccttgtctcaaaaaataaaaaattgccatgttgctctgagatgagaaccaggaagttcactagg attgcagcatgttgtggacattttggattgtcagcaaatagttacaacttcagatatcatattttgggagaacatgctaaa tgtctgcggtacatgatcttgcttttcatctgattatctcaggaaccctgcaggtgaatagtaccattccccaatgtttt gagataagagcactgaagttcagagagattaaataatttgccctagcttacacagctgataagcagaagaacgaggattc aaactgatgcctgtctaaatccaaaccatgctttctcctgtatcgtcagccatgtgaacttgagttagtcccatcacctc tctgagcatcactctcctcatcttagtgtgacaagaatCataattatctcaaagaggtgttgtgaggagcaagtagaatg ccagaaagtgttttgtaaactatgaattgcaatacagatggaaggtgttgttaccattattattattttaaaaacaggg

agagacagggtctcactatgttgtccaggctggtctcaaactcctggactcaagggatcctcccaaagtgctgggattac cataaagactcctgtgaagttcctgaggtggcccgaagatttccacaatcatggccagagcaaaatcctacccaaccct tgtttggataatctatactcccatcctgggaagcagttaaagggatgctctccatttcatagacagaaaagagtcttctg tggggagcaaacacatccaggagggacagaacattctctttttggtttctgtggcctctgtaatagagaggctggtatta gagagagagagaaaaaactagaaagcctggggaaattttggcaagagaatacagaaaggctgccatgataatccttttccc ctgcagagcacggtcagtgaatccactttgattgccctgctggcagcaaggaagaacaaaatcctggaaatgaaaacgtc tgagcccgatgctgatgagtcctgcctaaatgcccgactcgtggcctatgcctctgaccaggtgagttgcccgacgcagg ctgagcagctcagacatgggagcttgtctccagcaactgtagggaagacaagcttccaatgatcatatttggttcccgag tcttaggcttcagcagtttctggggggtgatcattccaggatgactctttgctgacaggtttctgtggcccttctaggct cactcctctgtggaaaaggctggtttgatttcccttgtgaagatgaaatttctgcctgtggatgacaacttctcactccg aggggaagctettcagaaggccatcgaggaagacaagcagcggggcttggtgcccgtctttgtaagtcaggatatatgcc agaaaggtcctcccatacagtattttacacatcatgaggtgctatccataggtgtgttatggaataaattttgtgggtca tttttttcaaatacacacgtatacatgtactagattgttatataaaatgtgttttcttacgagccatggtaaaacacagtc tgaaatatacactgttctggtgggatggatggagtagatcacgtctgtggtgaaatctttctcaggccaaatgtgtcac acgageceacectectgtgttaacttgeettaatttteeectaggtetgtgeacactagggaceactggggtetgtgea tttgactgcctgtcagagctgggccccatctgtaagtatcttccctctgtggctaggaagacaaggaatacatttttaaa tgtctcctaaagcaaggacctgaaaccagctctatgggattattcttgttcctctttggtcaatgcagagacatgggaag aaccaccaaaggtcatgagggtctcttccagggatccctggacattgcctttcccagtggtgtgacaagagttagaggtggccaccttgcctcctgtcctaggaggcgacagtaggagagccttcggttttctcatcctcttacttgtatgttgaactt ${\tt tacttaatgcaggctatatccaaaatacagtgtgaattaggctagaatagaaatgctttctattctaccttcagaaaaaggaatagaatagaaatgctttctattctaccttcagaaaaaggaatagaatagaaatgctttctattctattctaccttcagaaaaaggaatagaatagaaatgctttctattctattctaccttcagaaaaaggaatagaatagaaatgctttctattctattctaccttcagaaaaaggaatagaatagaaatgctttctattctattctaccttcagaaaaaggaatagaatagaaatagctttctattctattctaccttcagaaaaaggaatagaatagaaatagctttctattctattctaccttcagaaaaaggaatagaaatagctttctattctaccttcagaaaaaggaatagaaatagctttctattctaccttcagaaaaaggaatagaaatagctttctactattctaccttcagaaaaaggaatagaatagaaatagctttctattctaccttcagaaaaaggaatagaatagaaatagctttctactattctaccttcagaaaaaggaatagaatagaaatagctttctactattctaccttcagaaaaaggaatagaatagaaatagctttctactattctaccttcagaaaaaggaatag$ aaaagggtagggtagggggaaatcatgggagagagttaaaggcagagaggaaaacccagatgggactgtttaatccccaagca agaaaccactaggaaagagagataccttccctctaacttttgtattcggtgcactgacattgctctctgtgctggtgga aattgatttctgtgccaggatgttctaggctgaggccaagagggtgctggccctttacccagtggaagaaaaaaggcaagg gtgaggctttgtagactttcccattcggaggtaatgatgcctccttcagcccacttcttcaaactgactccacctgctc ccatctccacacccctccgtttctcatttagccaaagcacatcatccttgcagcccaccactcagcttggccaggtgcga gacatetttececaetteatacetececteeggeeaggtgatgtttgeefeefeaggtgeeggtgaggggetgfggetee acategatgetgettatgeaggeactgeetteetgtgeecegagtteegggggtttetgaaggggattgagtatgeegae tccttcacctttaatccttccaagtggatgatggtgcattttgactgtactgggttctggtgagtgtagcagcccagctc cgagcacgcaggaacgccttgcctcctctggagagacctcagccactaatgcccatttggaaacccacagggtcaaggac a agtaca agctg cag cagac ctt cagtg tgaat cccat ctacct cagg cat g ccaact cagg cgt g g ccaccg act tcatggtgagtggccagggacgggcagcctggtgggctcgggtggccagtgggaactgtaggcgtctgacccccaaaatctgt acggtggctcccttcagaaggcagcacactatgagctcatctcataatactgccaatgcataccttggtttctaattgtg cctaagtatatagaatgaaacccagaaaatggttaaaaaccctagaaaatgagaccagcctttgaggcagtgtgcacatt tectgaatatttgtggcattttttaatteeeagaaatgetetteetaeeacaggtggaeeagtteettetgeeteeatet ttttgtttttctttctttctttcttttttttttttctgagacagagtctcgctctgtcaaccaggctggagagcagtg gcgcatcttggctcactgcaacctccgcttccaggttcaagcgatctcctgcctcagctttccaagtatctggacta caggcgtgagccaccgcgcccagcaaacctccaactctcttgattccacatcctcagccagtattttgcctgagggaaacg attgtgaagettaaatgggaacaegtgtggatcaeetagcaaaatageegtgtggeaagtgeteaatatatggtaggeat agtatttctgaaagctcttctttgaagctgcagagatttgttaggacagtggttaggcatgtaggtgctaaagccagatg gcatgtgttggagtcctggctttctgtttactaacttgtgtgacctcgggcaagtgacttaaactctgtgtccagatttc ctcttgtgtcaaatgaggctgatgaccacagttctggcttcttaggcttgctgtgaggattatacaaattaatacactga aagtgtcttgcccttttagtcttaaaataatagcttcgtcatcacttgattatactggctattctcccttggaccagtcc acacctcttttagatatttgaagcttttggattagaattgcagcggtaagcctcacggcttactggtggtgacagaagac cctctagaggtaaagaaagaaagaaaataatggttctttatctccactgctctttctggtaggttttcagagattttta atgaaaaattaaaaaaattccagaacagcccaagggtcagatatctttagggataactgtaggtttgcttcctgagtgtg aattgatgcccattctcctatgagtgtatttgggtcatcataactgaggagcattatattcacccttgcccttttgaatt tcatgttaccgtttaaattcatttaccacagtgcctcaggatcttcccgggggttcattcctaggagtttggagattttac ${\tt agtgctctctgtcttccagataactcataaaaatgttagagtaaactcttcccagccctgctctggggaaccttattatt}$ tttacctctccacccagaaggcactgccttacacttacccttcccccacctttaatcctatggatttgattttcaagtcc atgaagaaactcctagaaaagtgaagttgctatctttttcatgatcctgagggtcctcagaggttactctcacctgggcccaatgtctttcccaccaggtggctgcagctttgaacagaagctcagtcgtctgctctgagatgagccagaaacagggcagca taaaataaagtagctctctctatatatgaaataaattggctataactatctggaaaccagaaccttttgacagatgatcc ctatcatccgttcattattctcttggagtgtccattggacaagaggtggagttgacactttccttgttacagcaattttg ttccattttcaggttttgatgccttctgctggcacaaaagcccccaagctgctccccagcacaacagagttttgcttgga aatcaaaggcttagtagttttctgctggggaaacattgtccatcaacaaggggtaacatcccaactgtgcctggctcag gaaactggggtgaagggtgaaggtgaggacatttgtgaggatttgataatcttgtgtatggcagataaatacgcagtgg gacaaacatttatttttagtcaacagaaattgtggtagaaactttctgacgtttgagggagatgtcattaggaaaccacg tgactcattagaataactgtaaatgttttccaaatcctctgctctattttcagatctgagaaatcagtctgaaattgatt tggaaattttcagatgtatggtgactgcaaccttgaactttaagctctgttgaatttggccaccaggagcaaagagtcaa ttttcatctaacagcggcagaaatttgggtgctcatttgaaatctgacagctggagtgatggctctcagatcacaggaat

accacttgcccgggaggtgcaattggttctttatgtcccggactgatgagccagtgaggtggcactacccaaggtcacac agctagtaagtggcacagctggaggcgaaacctaggtctgcagggctctagtgtctgtgctctaactaccatactttaca tittgggaggaataaaaatagaactttattttctgctattcaaggaatatagattcatttagagtaaaaatgtatttcc ttatgttgagtttctgggccgggatgaaatgtttaaagcagcacttgaaagcaaagtgcccttctcattggttcagggta atggacttgacttccacttgtctggctctcagacaagtgactattggccaccttcatcagtgatttggtcacacgatggg gcaacccttggggagcttggcttactccttagcaacagctcccagagtcatggtgacatcgtccatccctggagggctgg gcaggcaacagataatgcccagaaatgcccgagggagtggggcacccttgtctctaaccttgggcactgtgttcctttgt ttctagcactggcagatccccctgagccgacggtttcgctctgttaaactctggttcgtgattcggtccttcggggtgaa gaatcttcaagcacatgtcagacatgtatgtagcatgctgctgtggggggctgagcctgtgtttcctctgtttttctcatggc ctcctgggacttgattctctttgttaaccagaggagcgctgagcacaacatgccctgagggctgcctgatgcctgtcctc tgctgagtgtctcaccgttccccttgctgtcactgagcactggggagggttggcccagagtctggtttgcaggaaagag aaagagaaagtaaatcaaggggaagtgtgtgtgtggccagggtaggatcctatctgctttggaattacctcaatggtcacag ctggctgaatacttttagcactattatgattatgcctgaaataaagctcccctggccttggacaggtagacctaccaagt ctggaacaacctccctgcatcaacaggcatttattgaaggcctaltttgcttaatttatttctattcaactaattcaacaatt cgggacttaactaagaactctggccactggcattgttctcccacttctacaagagtccacatgcaagacaaagccattga 20 taattattatgcttacataataattacgtatatatttatggggtatgtgtgaggttttgatacaggcatacaatgtgcaa tgatcaaattagggtaactgggtatccaccactcaaccatttatcatttctttgtgttagaaacattctagttccattct ttaagttagtttgaaatgtacagcaaattatagttaactatagttgccttattgtgccgcctaacattagatctatttaa ttgtatttttgcgcccgttaactatcacctctttatcccccattccctgctacccttcccagcctctgccaaccatcatt tgtgcctggcttattttgcttaacataatgttctccagtttcctatgactggttttaatgttggtaattttacctttgta 30 tectectattageaaccccattgectaccatatgaggeccacactcctgggcctggctttcaaggacttgacgattagct cctaccttagcttgggcatttcatcgacccatccagacctcatgctcagtccatctctgcaccttcacccgtgtccttca cctgaactaccctctcctctccaaatgttgtgaatggattaaattctgcttccactagaagcttttctgcctattccatc tgttctggtttctgcttcattagcattcctgtgatcacctactcaaacacctttacaaaactgtgctcaaagttcttcca 35 atgtcccacaatagaagaaatggaattaaaataaagttgtttgatatgatttgattttatctcttcaacttgacggtgat gggtggtcactctaacctggcaaggctcagagggagtaattgccctgcttgagggaagaaggcccgggactttccctgaa gcctcccaattccaaatcctttcttcatagttctgggctgctttctactacactgagctctttggaaagttatataaaaatt aaatttcatatttctgtgttacagagaagtgctttaaagaatggatttttagttctaccctttacctgtttgatgacctt 40 getcaggetgaagtgeggtagtgecatcagageteactgeageettgaeeteeeeaggeteaggtgateeteeeeeetea gcctcctgagtagctgggactacaggcgcataccatcatgcctggctactttttgtattttttgtagagatggggttttg tcatgttgcccaggttgttctcacgctcctgggctcaagcaatctgcctaccttggcctcccaaagtgcgaggattacag gcatgagccaccacccctggccatgccttcctaatttataaaaatgagaaaaggatactacctctctcaaattaaatgag tcatctcctatcacctacaatagggattggtaaacatttcctgtaaaaagccagatactaaatacttttggctttgtggg ccatactctattqtaattacctctgtactacaagagctaccgtagacaatatgtaaacaaatgggaatgctgtgttccaa aaaactttacaaacaaggtgggggctatattttggccatggctgcactgtgcccttgaccttgacctagagcggtgcaggg 50 actggcagcagctctgctttcatgacctgtaaagtggggctttggaggtggcagtgctgctgttgtattctcctc tcccctgacctctgcttctgttattgcaaacagcatgtgttgtaggagggataaaagcacagtgggaggagatctaccta ctgtcacttgtaccttgggaaagtcactttccttggttccttctaaaaaatggaaagattgagctgggcacaggggcac gtgtctgtagtcccagctacttgggaggctgaggtgggaagctcaattgctcccaccatagcccaggtgggagttctggg ctatggtgtgctatgccaattgagtgtccgcactaagttcggcatcaatatggtgacctcccaggagcaagggatcacca 55 ggttgcctaaggagggtgaaggggcccaggttagaaatggagcaggtcaaaactcctgtgctgtttgaaactgaccacg caggggagaaaggggctctgagaaagatttggagaaactcatttcattatggtcaaaagacaggctcagggccagacatg gaacaacctagtgagaccactgtctttacaaaaaaattaaaaaatgtagctgggcatggtggtgcatgtctgtagtccta gctactcaggaggtgaaggtgggaggattacttgagctcaggagttcaaggctgcagtgagctttgattgtgcaacatgc cattaagaatactcacaatgtggtgtgaccatcaccattatttccagaattttttcatcatcccgagcagaaactctgta tccattaaccagtccacaacuttyguybyaccaccacttatttccayaattttttcatcatcccgagcagaaactctgta
tccattaaccagtccacaacctttccatgatgggtggagacaagatgtgaaaatatgttctctatggaatgtaaatg
agggcatgaaaagggcatttggggtacagggtgagaagaggtttggagcagtgaagtgaagcatgtaggcttaggattaggatgagggg
aggcccctagcccatatggcaacttgatgtgcactacaaacaggcatctcttcctttaggcacagcagcagctcgcat
gaggcacctggctgggaacgcagagcatggactgggttttggccctcacttgcccacttggccagtcaagagagctgtgaa atcaggagttgaggccgggttgcctggactgcaaagcacatgccttctgggttctgggctgagttgaaagggccctg agatgagttctcgaggtggatcccatgtgacaggaaacagggcgccattggaaattttccagcttggaatatgagcaaaa tcaaatggagatgacaatgaggcagaagccgcttacaacggctgtgacgggaagatggccctggtttaaaaccatttagc agtotgaaagtttatgcatagtotottgtotgatgattaatotoagttototttatacttgcaattocagggtactgaaa tttcgtctaaaggtaataccatcttccaagcccctctgtgaatgatgtcttgtggtgctccagagcctctcggaaacaca aactgggctctggggatgctgacagggggtgcgatggagacttcacttcctttatttttcaaacagggtcctaattgtct cacagaaaatgtgttaaaggaaatagctaaagctggccgtctcttcctcatcccggccactatccaggacaagttaatca tccgtttcactgtgacatcccagtttaccactagggatgacatcctgagagactggaatctcattcgagatgctgcact ctcatcctgagtcagcactgtacttcccaacccagccctcgggttgggaacctcatctcccaaatcaggggtgccagagc ctgggcctgtggaacgtcccttcagtctgtcagtggggcaggagatgatccagtccaggccaggaagatcatcaagcagc ctcagcgtgtgggagccggtcccatgaaaagggaaaatggcctccatcttgaaaccctgctggacccagttgatgactgc

gacaaacaagctgggcattagttagaactttaaggatagatgttaaacagtaatatactatcacaatagggaaaagggtcccatgtgaactgaactcaacttggatttgtgcaaaggtgactaggcatttcacagcgtgaatgggagaatagggagaaggccagcctagacttagaagatgagcaggaatgtgaaaattacaaaaagcggaaagtggtgatgtgaatgtgaaacccctctgggtt tgctaactggtgctttttgaagtaagactcttaccctcccacagagactgggagtcagggcctgtgttcaggggttcgc tggaacaaacagttaattettteggcagetttgagttttettaagcaggcaetttaaggtgagetaggatcaaettaggg 20 tttttttttttttgagactagtgctttctctctttcccaggctggagtgcagaggcacaatcatgtcttactgcagcctca tgcagtggttggaacacagttcactgcagcctcagcctctgaggctcaagctgtctttccacctcagtcccacgagtagc tgggactatgagtgcacaccactatgcctggctaatttttataactttttacagagacagggtctccctgtgttgcccag gctggtctggaactcctgggctcaggtgatc (SEQ ID NO:12243) gagecetgtgaatacegtgaatacegtgaatactacegagetagagggaaagagatggtggattacateteceagtacet gagcactgtgcgggagaggcaggtgactccaaatgtgcagcctggatacctgcgagcccagctacctgcgagtgctcccg tectggagggeategagtaegeegaeteetteaeetttaaeeettecaagtggatgatggtaeaetttgaetgtaetgga ttctgggtcaaggacaagtacaagctgcagcagacctttagtgtgaaccccatctacctccgacatgccaactctggtgc agccacggacttcatgcattggcagatccccttgagccggcgctttcgctccattaagctgtggtttgtgattcggtcct tcggggtgaagaatettcaagcacatgtcagacacggcacagaaatggctaaatactttgaatetetggtcagaagcgac ccttccttcgaaattcctgctaagaggcaccttggtttggtggttttccgtctgaagggtcctaattgtctcacagaaag tgtgttaaaggaaatagccaaagctggccagctctttctcatccoggctactatccaagacaagctgatcatccgtttca ctgtgacgtcccagtttaccaccaaggaggacatcctgagagattggcacctcatccaagaggctgctaaccttgtcctg agccagcactgcacttcccagccgagccctcgggccaagaacgtcatcccgccaccgccagggaccagagggctatccct ggagtcagtcagegagggaggagatgacccagcacaggcccggaagatcatcaagcagccaggagccagtctggcgagaa gggaaggcggctctgatctggaaacgatgccggatccctttgatgattgcttctctgaagaggcccccaacaccaccac aqqqaqaqatqqtqqattacatctqccaqtacctqaqcactqtqcqqqaqaqqtqtqtqacqccaqacqtqcaqcctq gctacctgcgagcccagctgcctgagagtgctcctgaggaccccgacagctgggacagcatctttggggacattgaacga 60 gctaggagacatgctggctgatgccatcaactgcttgggattcacctgggcatccagccctgcgtgtacagagctggaga tgaacgtcatggactggttggcaaaaatgctgggacttccagagcacttcttgcaccaccaccccagcagcaggggga ggcgtcctgcagagcacggtcagtgaatccactttgattgccctgctggcagcaaggaagaacaaaatcctggaaatgaa aacgtotgagoocgatgotgatgagtootgootaaatgoocgactogtggootatgoototgaccaggotoactoototg tggaaaaggctggtttgatttcccttgtgaagatgaaatttctgcctgtggatgacaacttctcactccgaggggaagct cttcagaaggccatcgaggaagacaagcagcggggcttggtgcccgtctttgtctgtgcaacactagggaccactggggt ctgtgcatttgactgcctgtcagagctgggccccatctgtgcccgtgaggggctgtggctccacatcgatgctgcttatg caggcactgccttcctgtgccccgagttccgggggtttctgaaggggattgagtatgccgactccttcacctttaatcct atgctgaagaaaagtgccttcaaaaaactcatcaaattctacagcgtccccagctttcctgaatgcagctctcaatgtgg actccagctgccctgttgccctctgcaggccatggtttagacacagggccttcagccagagtctgaggatatacttcagg gactctgtgaacccctcacaattgtatgccaactttgtgtgcttatgtgtacatgcatttttcttggggcgagttcataa

ttttaatcaaattctcataggggttcatgacccacaataggatacaaacgaagagtttaagccagcatgatccagatggg ttcagcagtctggtcagtgagaaagggccgagggtagacaggcagcttctgtggttcagcttgtgacatgatatataaca cagaaataaattatgcttgtccctgaaacaaaaaa (SEQ ID NO:12245) agtgcgcaggactggcaagagggaagccgggctgctccacgcctttcacgccttccacctcctgcgtgtccatctgtgag agtacctgagcactgtgcgggagagacgtgtgacgccagacgtgcagcctggctacctgcgagcccagctgcctgagagt gctcctgaggaccccgacagctgggacagcatcttttggggacattgaacgaatcatcatgcctggggtggtacattggca actgettgggattcacetgggcatecageeetgegtgtacagagetggagatgaaegtcatggaetggttggcaaaaatg ctgggacttccagagcacttcttgcaccaccaccaccaggagcggaggcgtcctgcagcagacggtcagtgaatc cactttgattgccctgctggcagcaaggaagaacaaaatcctggaaatgaaaacgtctgagcccgatgctgatgagtcct geetaaatgeeegaetegtggeetatgeetetgaeeaggeteaeteetetgtggaaaaggetggtttgattteeettgtg aagatgaaatttetgeetgtggatgacaactteteacteegaggggaagetetteagaaggccategaggaagacaagca gcggggcttggtgcccgtctttgtctgtgcaacactagggaccactggggtctgtgcatttgactgcctgtcagagctgg 15 gcccatctgtgcccgtgaggggctgtggctccacatcgatgctgcttatgcaggcactgccttcctgtgccccgagttc cgggggtttctgaaggggattgagtatgccgactccttcacctttaatccttccaagtggatgatggtgcatttttgactg tactgggttctgggtcaaggacaagtacaagctgcagcagaccttcagtgtgaatcccatctacctcaggcatgccaact gggggctcctccagggtcagaatcttttccaggtttccagaagacatgatgatgctgaagaaaagtgccttcaaaaaact catcaaattctacagcgtccccagctttcctgaatgcagctctcaatgtggactccagctgccctgttgccctctgcagg 30 ccatggtttagacacagggccttcagcagagtctgaggatatacttcagggactctgtgaacccctcacaattgtatgcc aactttgtgtgcttatgtgtacatgcatttttcttggggcgagttcataattttaatcaaattctcataggggctcatga cccacaataggatacaaacgaagagtttaagccagcatgatccagatgggttcatcagtctggtcagtgagaaagggccg gtaagtatcttcctctgtggctaggaagacaaggaatacatttttaaatgtctcctaaagcaaggacctgaaaccagct 35 ctatgggattattcttgttcctctttggtcaatgcagagacatgggaagaaccaccaaaggtcatgagggtctctttccag ggatccctggacattgcctttcccagtggtgtgacaagagttagaggtggcctaccttgcctcctgtcctaggaggcgac agtaggagägeetteggtttteteateetettaettgtatgttgaaetttaettaatgeaggetatateeaaaataeagt gtgaattaggctagaatagaaatgctttctattctaccttcagaaaaaggaaaagggtagggtagggaaatcatgggaga tctaacttttgtattcggtgcactgacattgctctctgtgctggtgggaaattgatttctgtgccaggatgttctaggct aattactagtgaggtcaaacattttttccctcatttcttatccattaaagtttattctgtgaattgccagttcatggcca ttttgggggtgtagtttttcttactgatttattgaagtttaatgtttttctggaaactaatattttgctagttgtgtgaa 50 ttgtaaatatcttctcccactgtatttttttaaaaactttttattgtctgaattagcacatatttagtgaatgcctctat gtgcaattcttttttttttttttttttttttttgagatggagttlcgctcttgtttcccagactggagtgcagtggcat gatetaageteaetgeaaeetteaeeteeegggtteaagtgatteteetgeeteaggeeteetgagtagetgggattaea ggtgcccgctaccatgaccagctaattttttgtatttttagtagagacggggtttcatcatgttggccaggttggtctcg aactootgaceteaggtgatecaceegeeteggeettecaaagtgtagggattacaggeatgagecagtgageteageet 55 ctatgtgcaattcttaatgtcaagctgagggagaagtctaagaagttttatataagtctgacacccagggtgcctgtaat taaaggiggaatgaaattttaatttgegagitgateettetgttitttagtteagtaeticeteettttagaatgtatg ctttccagataattagtgagataaagatttgattttcacttttagcatttctaaaagctgtaatatgctacctaacttgt acatgatatttagtaaagtgttttgggagcatttagcacagcctccaaaaaattagaattccactagccccctgatcctaca tatctggcatcttaagagtcaataatagcaaagttgagagaggcagcttggtgtggtggaaagaacatgggtattggatc cgatagccttaggttcaaatcctggcttcttcaggagaggcaggtctggtgggggggtaggatagggtttagggttggatggcacagggtttaatttccttggagac
tcagtttctcgaagatgaagtagaaatggctttcaccaggttgttgtaatttttagccaagtgtttaatttccttgagac
tcagtttctcgaagatgaagtagaaatggctttcaccaggttgttgtaaagactgaatcaaatagtgtgcacagaaatt
gcaaggcatagtgctcaggacatagttaacattcttaaatattgttgaggaatggtgtgcacctgaaaattcctaaaa
agctgcaaatatacatgccttttgatccagctgttccacttcaggatatccttactcatgtgtgcaaagcaattttttgt
agaaatgtttgtaatagcaaaagactggaaacaactgaaatgtacactgctagggaactgattactctctggtatgtca cgcaatgcagctctatgaaaaaaaggagtacgtgtcaagatatattaacaaataaagtacagaatattgtactgtactta tcccttttgtgtttaacaaaagaaaagaaaaggagaaaaattagaatatagtatatatttgcctttatgtgcaaaaaaagg aaatcactttttgttttttttgagacagggtctcattctgtcacccaggctggggtgcagtggcgctatcacggctcact gcaacctcaacctcccaggctcaagcgatcctcccgcacagcctccaagtagcgggactacaggcacacggccatg cccagctaatttatttatttattttggtagagatggggtttcgcgatgttacccaggctggtctcaaactcctgagttc atcttgatttttcttatggttttaaaaaaatgtgattggatttatggtttctggcattgaaccatagttataaatgtatt ctttactctgaggttgtccagggaatcttctaattttcttaatttaattttcatctttaaaaacagctctattgatgca . taattgatatacaaaaatagcatatatttactactatttgatgagtttggacatgtgtacacacccatgaagccatcagt taacctgatggtggtgatggtttcctgtaattttatgcttccatttttcacatttagatctgacttttctggaatttatc, tagtccatctttttctttctgatctgagatgctatctttattatatgctaaatttctgtacatgtttaaatttattgct ccttttgtttgtctctttgtacaccagtatctacctcattgttctaattattcgagcttcaggatacattttaatacttc tgggtaggaacagaaccttctcgttactcttacaaaattttcttctttattctggtttatttttcctaagaactttaaaa

ttttttatattgttcagtagcaatttaaaaaaatcatccactatgttcaatgaaataaaaggccagatttaaaaaatttgg caaggagttgaaaactataaaaaaggaaccaaataaaaattctttttttgcccccataaggcagaagaaatacaaattcta caactgaaaaaatataatatctgatattaagaaatcaataaatggtttattatattagctacatttgaagagacaactaa atagtatatataatacacaagtttaacataggactgcatttgcagaatagaagagagataatgggggagatagcacactt ggagaaaaaataacgaacacttttttatttaaagtgcctaacttggctgggtggtggtgggctgacacctgtaatcccaaca ctttgggaggctgagatgggtggatcatttgagcccaggagttcaagaccaacttgggtaacatggcgaaaccccatctc tacagaaaaactccaagaaataaaaaacaataatcatctgagtgtggtagcacatgcctgcgtccttgctactcaggagg tgggggtggcagaattaccagggcctggaagtcaaggctgcaatgagctgtgatcgcatcactatacttcagcctggttg 10 acgagtgagaccctgtctcaacaataaaaataaaaataaaataaaataaaatagcctaacttggtgcttggcactttctaaaa ttgacacataatatttgtacctgtttatggagtatatgtgatattttgatacatgcatacaatgtgtgtaatgatcaaat caggatatttaagatatccatcatctcaaacatttttctttgtgttcagaacattccaaatctagctattttgaaatata caataaattattaactatagtcatcctaatgtgctattgaatattattgaattccatctaattatatatgtttgtaccaatt aaccaatctctacttattcctcaccccagctcccaccaaccctttccagtctctggtaactatcattttattctctacc 15 tccatgagatcaaattttttacctcccatatcgttgtcaatattattatttttcccaccctggctcctaatgaaggattt ttaaatcaacagttttaatgagatataattcccattctataaaatttcctcgtttgaagtgtacagtttaatagctttta gtatatccacagaagtgtgcaaccatcaccataataaattttaaaacattttcagcagggcgcagtggctcacgcctgta atcccagctactcaggaggctgaggcaggagaattgcttgaacccaggaggcagaggtttcagtgagccgagattgcacc 20 actgcaatccagcctgggccacagagtgagactccatctcaaaacaaaacaaagcaaaataaaacaaagcaaaat aaaacaaaaccaaaaccaacaattttgaacattttcatcttaccaccctgccaaaaatccctgttctccttagccatca ttatttccattttgctattataataattctgctatgaacacccatgtatacgtttttggtggacatgatttcattttccttggatatacacctagcagtagaattgttgagtcataaagaactctaggtttagctttctggggagcttccagattat tttccaaaatggctgtgccattttacattcccaccagtaaagtatgagggttctaatttttccctgtcttcaccaatact tgttgttatctatcttttttattatagtcatcatagtctgtatgaagtgatttctcactgtagttttttcagtagtaatt 30 tgctgtctcccttatgcctgggcataagctctgataatgccctgtctgggaaaactctttttggccttctcaatttctatt acattgagagcccaagaacccatggtcagtaacaggccaatgagaagcctcctgcattagtctaggtgaaggataatggt 35 ggggaaagacagttttgcaatacgttaagtttgaggtgcctcagagtcataagagaggatttgtcagaaaggcagttgga tataagattttgaagctcaaaagacagggagggcctgatggtatgtttaaacctatacggatatcacataggtaacattt caagcctaagaaatgggccgggcgcagtggctcacacctgtaatcccagcactttggaaggctgaggcgggttggatcact tgaggtcaggagttcgagacaaacccagccaacatggtgaaaccccatctctgctaaaaacacaaaaattagtggggcat 40 ttagaaatgggcaatgccaccaaagcagaaagatgaaagggcaatgccctgaggtgtgccagcattggaggaaacaa acagccagagatgtaggaggaaagcccagagaaactgtgagctgcaaggatgaagtagtaacaaataaaatgccaccaag ctactttttctgcatacccttggccttattctggtctactgagctgggagcttgtctgaggctggagctctattgtctga 50 tgcttaatttaagaagcgccttttatcctggctctcttgaccagtcaaagttgtggctcgctgttttctacaaggactgggg taaagggcccacactggctgccagggagtgcgcaggactggcaagagggaagccgggctgctccacgcctttcacgcctt 55 tgagcaacgggcatccctggccctcttccctgctgctactcctgcaggaacggctgctggtggtggcccttagattgtg gggatcagagtgtaaaacttttctcaaccactctttcattctccctctcatatacccactctcacactatgtccacactac cgtgccttgcttttcctccccactttcccaaaaattgaggatttggatccctgagccactagatgggaaaaggggattg 60 qatqttgagacagacaaaqagatatgtacacacacacacacacacacacacacagcaacagaggcactgaagactgcaatctga 70 tccaaaaaagatgaataataactgattcaatggggatggtgaaaaaatagatttttttgtcctttatcggaactgggcat ggaatetttetatetgtgetaacagatataactggtgggtgtgtgtgtgtaacaatttttggatacaaagagetatagagtt 75 gtggataaaggaaggggaaagaaatgaaacgtttcactttggcgctagagttttgtgctttggagattttcctttttg ctcggctcactgcaacctccgtctcccaggttcaagcgattctcctgcctcagcctcccaagtagctgggattacatgcg cctgccaccacgcccggctaattttttgtatttttagtagagagggtttgaccatgttagtcaggatggtcttgatctc ctgacctcgtgatccgcctcgcctcagcctcccaaagtgctgggattacaggcatgagccactgtgcccggccaaatccat ctccttctttaccaagtctcttggcccggacctgagagggatgggcacaaatcggtcaggcccagtcaggggatttcagc

gtgacgccagacgtgcagcctggctacctgcgagcccagctgcctgagagtgctcctgaggaccccgacagctgggacag Catctttggggacattgaacgaatcatcatgcctggggtgagacacagtgaccacaagggcagttctggatttcagggca cagaagggtgggtggtggcctggagaaagacctgctttgggtcagcttgggatgagaatgcatccttcagccacttggcc ccagttgtgccatggcatgaggtttctgatgccagggcagggctggccagaacacctgcattccagagcacagcctggca gaagtgtggaagtctaatgggatgggtggagaagtgaacattttgtctgaggggaaaggacactgtgtatagtaagacag gggagaggaagctggtggtagtgcctggccctgacgacggagccagagactcttctgtacagtgtctgagaccacaccaa agagaaggaaggaagtggggaacacatcctggcaaggacacgctggtgaccaggttgcgttggcccaggaaactgagtgg gcctggcaacccctctgtcccctctgaggtctggtgattgagctgcttttcaagagcaagaagggactttccctgaat 10 Cattgatactttccatgatggagggtgcagcctgggatagtgctggtggtggggccaggaagctgatggaagctgatggctgatgc atgggcttgagctggagcctgccttgatgggtggtggacacccctgaccactggcggtgaggagctctgccatggtgctc atgetaaagtggcategaeteeetteetgtggegggeteeetgeeatgtgeeagetetgtgetggeeacatgaeatget atictaatttaatitteeceagtggccctgttttacagatgaggaaactgctgatgctcagagaagttaactgtcttgccca aagtcacagaattagtacctggtagatccaggattttaccctagaccagtcttacttcacaggctgtgccgtttctccta · 15 cccctgtcacctctactggtgggtgcctgaatgtgcctggctaagcctgggcccctagcattgcctgtctggctccaca ccccacacaagetgtgtcttccctctccctgcttggggcatttgtgttctgaaccacacatgtttagaggctcttcctg aggccagcttgaggtttgccttcatcattcccaaagaacttttgacttcaatgtgacaaaaaggccaggcgcgggggctc acacetgtaateeeageactttgggaggeeaaggeaggtggateacetgaggtegggagtteaagaceageetgaeeaae atggagaaaccccgtctctactaaaaatacaaaattagctgggcatggtggcacatgcctgtaatcccagctacttggga ggctgaggtaggagaatcgcttgaacccgggaggcggaggttgcggtgagctgagatagcgccgttgcactccagcctgg gcaacaagagcgaaactccatctcaaaaaaaaaaaaagtgacaaaaatatgcctagaggcaggggtgggaaaatattca 25 30 gtttttctcttcctgccaccacctagaaaataagagaagaagaaaaactctctttcccctttaattccaaccctggttag acaatcctcatttacttttcatgagagagagagagcatcccacgggaaaagtcaggacaccaccctgctcgggtgtctg 35 agcaggagatgtggttattaccgatcatgactcttacatggtgaaaattggaggaagaggtttgattctctgagtcaagt caggatatgtgatgtgtctgtcacccacatgattagtttaccgttaatgttagagcttaacatttcacacatttcttgcc cacagtggtgcacgcctgtaatcccagcactttgggaggctgagggtggatcatgaggtcaggagttcgagactagc ctggccaacatagtgaaacactttctctattaaaaatacaaaaattagccaggcatggtggtgggcacctgtaatccca gctacttgggaggctgaggcaggagaatctctttgaacctgggagccaggggttgcactgagccaagatggcgctgctgca ggtatgttggagcttaagttcattagcttcatggtaaatctacacggtcacacagctggttagggactgaggtgggatgg gaacttgtgtccttggacttaattcttaggctccttatactatacacactgtccaggacaaggtccttgctcttgaagga 45 50 ttcctcactacattcccaatgtgatgcttaaggacagctttgaacccattcaccagaccctctgagttgcatgctcagg gagctcagtgctccataaaacaaaaacaaaaggtgccttttgcaagaaactggatgaaacaagtagtctgcttttctgga gctcacagtctgcccttcctttttttttttttgagacggagtcttgctctgtcgcccaggctggagtgcagtggagcgatc ttggctcactgcaagctcagcctcccgggttcacatcattctcctgcctcagcctcctgagtagctgggactacaggctt 55 ctgccaccccgcctggctaattttttttggtatttttagtagagatgggtttcaccatgttagccaggatggtctcaatc tettgatetegtgatecacetgeeteggeeteccaaagtgetgggattataggeatgagecaceggeetgeeet teettttattgetgggeaggggggeatgaggggtaagtactggggactaatgtgaataccacccagaateccacactg ggttactgtagtgattttccttttgcatatttccttctggactttgcatatatgaaaaggctccactgatgatctagcat aggacatgggccacattagtgacaagaacaccagtgaacaagtctgattttcatggagttatgtcacttatttctgctta tcctggtgccaactctgtgcatgctctgcctccaggtggtacattggcagagcccccatatgcacgcctactacccagcc etcacctettggeeetecetgetaggagacatgetggetgatgceatcaactgettgggatteacctgggtgagtagcaa cggctgtaactactcgcaatggggaacgtagcagggagtggtatcctagggcagacatattttgtcttggtttctgaata tggctccacaataaatattaatgagggctatattctttaagcttacgctttattttaattttctcatcacatcctttaac 65 70 agtgccctggggctgtgcagtttgaagttccttttccttttctaggcatccagccctgcgtgtacagagctggagatgaa cgtcatggactggttggcaaaaatgctgggacttccagagcacttcttgcaccaccaccccagcagccagggcggaggcg 75 tcctgcaggtacctcccttggcaaagcttcacctagcttgggggctaagtagcgaaagacaagccaaaccctaacctggc aattotocogttotocatggagtttococcacattacccacacgtcatcaccaacagcaccatcatcacagcttcacct catttccagtatgacttgattcaggtttcttagtctataatctgacaattcctttttggtgtcccattttgtatctcacg gtaaaaggggaaaggagaaggcaaggagacttctcttttctctccctgctaggttcaggagatccccttgcagtgaga gcaattaacagcataaactgattaacggtatcctctgaccctatcttctggatacttgtcaaattatggttcttcaaata tgcatctataaatccttgacgttcatgagggettggttctaagacctttgagattcctcagattcttgaattctttttt

aaataaaaatcgtggctggacatggtgactcaccctgtaatctcagcacattgagaggctgagacagatggatcacttag cccaqqaqttcaaaccagcctgggcaacatggtqaaactqatctctccaaacaaacaaaattagctgggtqtgqtgqcat gtgcctgtagacccagctacttgggatgctgaggtaggaggattgcttgagcccagaagattgaggctgcagtgggctat gattgtgccactgcctccagcctgggcgacagtgtaagaccttgtctcaaaaaataaaaaattgccatgttgctctga aatctgaacctcggaagaaagacaaattgcagcatgttgtggacatttttggattgtcagcaaatagttacaacttcagat atcatatttgggagaacatgctaaatgtctgcggtacatgatcttgcttttcatctgattatctcaggaaccctgcaggt gaatagtaccattccccaatgttttgagataagagcactgaagttcagagagattaaataatttgccctagcttacacag ctgataagcagaagaacgaggattcaaactgatgcctgtctaaatccaaaccatgctttctcctgtatcgtcagccatgt 10 gaacttgagttagtcccatcacctctctgagcatcactctcctcatcttagtgtgacaagaatcataattatctcaaaga ggtgttgtgaggagcaagtagaatgccagaaagtgttttgtaaactatgaattgcaatacagatggaaggtgttgttacc attattattatttttaaaaacagggcctggttctgtctcccaggctggagtgcagtggagccatcatggctcactgcagc ctccatctcctgggcccaagcaatcctccaacctaagcetcccacgtagctgggactacaggtgtgcaccactacacctg gctttttgtttttgttttttttttgtagagacagggtctcactatgttgtccaggctggtctcaaactcctggactcaagg 15 gatcctcccaaagtgctgggattacaggtgcgagccactgcacccagctgattattattattattatgctacatacttct ttacataaatagctttctttttatggagtaactcccaggcacttaatatctgtgggatctggtccacaccactctccatg acagtgtctgccaggcatttttagcaggattctatcagctgtaggtcacttgaagatttcaagaagcaaagacatcaaag actgggtgaatgaatgataaggaaccataaagactcctgtgaagttcctgaggtggccccgaagatttccacaatcatgg ccagagcaaaatcctacccaacccttgtttggataatctatactcccatcctgggaagcagttaaagggatgctctccat 20 ttcatagacagaaaagagtcttctggaggggaaatgttagcccaaggtcacaagagctattgacaactaaatgggcccaa gtcaccagcctctcacacaggccaggatcctctcttcctggggactcaaactccatatccatttgtgtaataagctgaga gttettetttaaatatgttttaeatggggageaaacatecaggagggaeagaacattetettttttggtttetgtgge aggetgccatgataatccttttcccctgcagagcacggtcagtgaatccactttgattgccctgctggcagcaaggaaga acaaaatcotggaaatgaaaacgtotgagcocgatgotgatgagtoctgcotaaatgcocgactogtggcotatgcotot 30 ctgtggatgacaacttctcactccgaggggaagctcttcagaaggccatcgaggaagacaagcagcggggcttggtgcc taagtaacatgctgcacacaaaagcagaaaggtcctcccatacagtattttacacatcatgaggtgctatccataggtgt 35 gttatggaataaattttgtgggtcataaccagcattaaaaagaaatatagtataaaatattagagtgcacacatatagcc agagtatgtattgttttatgaaacttttttttcaaatacacacgtatacatgtactagattgttatataaaatgtgtttc atettteteaggeeaaatgtgteacaegageecaeceteetgtgttaaettgeettaatttteecetaggtetgtgeaae actagggaccactggggtctgtgcatttgactgcctgtcagagctgggccccatctgtaagtatcttccctctgtggcta 40 ggaagacaaggaatacatttttaaatgtctcctaaagcaaggacctgaaaccagctctatgggattattcttgttcctct ttggtcaatgcagagacatgggaagaaccaccaaaggtcatgagggtctcttccagggatccctggacattgcctttccc agtggtgtgacaagagttagaggtggcctacettgcctcctgtcctaggaggcgacagtaggagagccttcggttttctc atcctcttacttgtatgttgaactttacttaatgcaggctatatccaaaatacagtgtgaattaggctagaatagaaatg gacattgetetetetgtgetggtgggaaattgatttetgtgecaggatgttetaggetgaggecaagagggtgetggeett
tacccagtggaagaaaaaggcaagggtgaggetttgtagacttteccatteggaggtaatgatgecteetteageeecac
ttetteaaaetgaeteeacetgeteccateteeacececegttteteatttagecaaageacateateettgeagee ggtgcccgtgagggctgtggctccacatcgatgctgcttatgcaggcactgccttcctgtgccccgagttccgggggtt 50 tctgaaggggattgagtatgccgactccttcacctttaatccttccaagtggatgatggtgcattttgactgtactgggt tctggtgagtgtagcagcccagctccgagcacgcaggaacgccttgcctcctctggagagacctcagccactaatgccca tttggaaacccacagggtcaaggacaagtacaagctgcagcagaccttcagtgtgaatcccatctacctcaggcatgcca actcaggcgtggccaccgacttcatggtgagtggccagggacgggcagcctggtgggctcgggtggccagtgggaactgt 55 atgcatacettggtttetaattgtgcetaagtatatagaatgaaaeeeagaaaatggttaaaaaeeetagaaaatgagae cagcctttgaggcagtgtgcacatttcctgaatatttgtggcattttttaattcccagaaatgctcttcctaccacaggt ggaccagttccttctgcctccatctcgggtcatcttttttgtttcttacccagcagcagggcagggttggagaatttccct 60 ctgtcaaccaggctggagagcagtggcgcatcttggctcactgcaacctccgccttccaggttcaagcgattctcctgcc tcagetttecaagtatetgggaetacaggegtgageeacegegeecageaaaceteaaetetettgattecaeateetea 70 tttatettatettettggacaaetgaagtgettgecetttagtettaagettaatatagettegteateaettgattatae tggetatteteeettggaceagtecaeaecetetttagatatttgaagettttggattagaattgeageggtaageetea 75 actgtaggtttgcttcctgagtgtgaattgatgcccattctcctatgagtgtatttgggtcatcataactgaggagcatt atatteacccttgcccttttgaatttcatgttaccgtttaaattcatttaccacagtgcctcaggatcttcccggggttc attoctaggagtttggagattttacagtgctctctgtcttccagataactcataaaaatgttagagtaaactcttcccag ccctgctctggggaaccttattatttttacctctccacccagaaggcactgccttacacttacccttcccccacctttaa tectatggatttgatttteaagteeatgaagaaacteetagaaagtgaagttgetatettttteatgateetgagggte

ttaccttagccttggcaagggagccctgcaaggaccttacaaggacacagaggaggctggagatgcctcaaggtaaagaa gagccctgtcaggctttatacgtccagattttttgatccaacagaaaatgttggctagaaccactctgctgagtcagcat ggatcagttttggaatagtgacaagaaaaggagcaactgggaataaggaagattgtgaagaaatcaaaatcaaaatcacct accagaaccttttgacagatgatccctatcatccgttcattattctctttggagtgtccattggacaagaggtggagttga cactttccttgttacagcaattttgttccattttcaggttttgatgccttctgctggcacaaaagcccccaagctgctcc ccagcacaacagagttttgcttggaaatcaaaggcttagtagttttctgctggggaaacattgtccatcaacaaaggggt aacatcccaactgtgcctggctcaggaaactggggtgaaggtgaaggtgaggacatttgtgaggatttgataatcttgt 10 agggagatgtcattaggaaaccacgtgactcattagaataactgtaaatgttttccaaatcctctgctctattttcagat ctgagaaatcagtctgaaattgatttggaaattttcagatgtatggtgactgcaaccttgaactttaagctctgttgaat ttggccaccaggagcaaagagtcaattttcatctaacagcggcagaaatttgggtgctcatttgaaatctgacagctgga gtgatggctctcagatcacaggaatctcacaggaaaatgaacaaggcagtgtaaggttaaataggggtcatcttggctct agacagaaatgctactgtgatttgtagctcacattttaaaataatctaaatagccaacacctactgacaacttcttctga ggctcttggcgttctttgtcctcacaccacttgcccgggaggtgcaattggttctttatgtcccggactgatgagccagt gaggtggcactacccaaggtcacacagctagtaagtggcacagctggaggcgaaacctaggtctgcagggctctagtgtc tgtgctctaactaccatactttacattttgggaggaataaaaatagaactttattttctgctattcaaggaatatagatt ctgtgttcctctgttttctcatgggaaggaaggctggtttctactttgcagatctgcctaggagacttgcggtgtgtggttctactgttgttaccagaggagcctgttcctacagctcctgggacttgattctcttttgttaaccagaggagcgctgagcacaacatgcc tgagggetgcctgatgcctgtcctctgctgagtgtctcaccgttcccttgctgtcactgagcactggggagggttggcc ccttggacaggtagacctaccaagtctggaacaaacctccctgcatcaacaggcatttattgaaggcctattttgcttaa tttatttctattcaattcaacaattacaaggtattgtgctaagaaagggacacagaggtaaatgagacaggtgcagcctc tctcccatgttcttcatggaagaagcgggacttaactaagaactctggccactggcattgttctcccacttctacaagag tccacatgcaagacaaagccattgataaaagtagtgggggaagctgaagacactgtcctttctgcctatgtgtgtctttg tecttecacetttectetagggaattecttettggttaaacaaacaaaccaaaatgaagtggtggaageggtaactat gattttttttaacatttaaaaaaaaataattattatgcttacataataattacgtatatatttatggggtatgtgtgaggt tttgatacaggcatacaatgtgcaatgatcaaattagggtaactgggtatccaccactcaaccatttatcatttctttgt gttagaaacattctagttccattctttaagttagtttgaaatgtacagcaaattatagttaactatagttgccttattgt geogectaacattagatetatttaattgtatttttgegecegitaactateacetetitateececatteectgetacec ttcccagcctctgccaaccatcattctactgtgcgtctccacgagctcagtttgcttactttttaactcccacgtttgag tgagaacatgtgaaatttgtccttctgtgcctggcttattttgcttaacataatgttctccagtttcctatgactggttt ctgtttgcaaatcaaacccctgaattcctcctattagcaccccattgcctaccattgaggcccaccactcctgggcctg gcttcaaggacttgacgattagctcctaccttagcttgggcatttcatcgacccatccagacctcatgctcagtccatc tctgcaccttcaccggtgtccttcacctgaactaccctcacctccacatgctcacctcacactccagacctcatccacc tagaagettttetgeetatteeatetgttetggtttetgetteattageatteetgtgateacetacteaaacacettta caaaactqtqctcaaaqttcttccaatqtcccacaataqaagaaatggaattaaaataaagttgtttgatatgatttgat cattagatccttagcacagtgcctggggtggtcactctaacctggcaaggctcagagggagtaattgccctgcttgaggg aagaaggcccgggactttccctgaagcctcccaattccaaatcctttcttcatagttctgggctgctttctactacactg agctcttggaaagttatataaaattaaatttcatatttctgtgttacagagaagtgctttaaagaatggatttttagttc atttttgagatgaggtetetgettgeteaggetgaagtgeggtagtgeeateagageteaetgeageettgaceteece 55 aggctcaggtgatcctcccacctcagcctcctgagtagctgggactacaggcgcataccatcatgcctggctactttttg tattttttgtagagatggggttttgtcatgttgcccaggttgttctcacgctcctgggctcaagcaatctgcctaccttg gcctcccaaagtgcgaggattacaggcatgagccaccacccctggccatgccttcctaatttataaaaatgagaaaagga atcaccatcatcatcatcatcctcatctcctatcacctacaatagggattggtaaacatttcctgtaaaaagccaga tactaaatacttttggctttgtgggccatactctattgtaattacctctgtactacaagagctaccgtagacaatatgta aacaaatgggaatgctgtgttccaaaaaactttacaaacacaggtgggggctatatttggccatggctgcactgtgcctg cccttgacctagagcggtgcagggcactggcagctctgctttcatgacctgtaaagtggggctttggaggtggcagt gctgcctgtgctctgtattctccttcccctgacctctgcttctgttattgcaaacagcatgtgttgtaggagggataaa agcacagtgggaggagatctacctactgtcacttgtaccttgggaaagtcactttcccttggttccttctaaaaaatgga aagattgagctgggcacaggggcacgtgtctgtagtcccagctacttgggaggctgaggtgggaagctcaattgctccca ccatagcccaggtgggagttctgggctatggtgtgctatgccaattgagtgtccgcactaagttcggcatcaatatggtg atggtggtgcatgtctgtagtcctagctactcaggaggtgaaggtggaggattacttgagctcaggagttcaaggctgc attacttagcaaatatttttattgagatcttctggatgcttggagaaatttttaaaaagaaaagagaaggcaagtcctgt ccttgtttagttagtaatcctgggttaaaaacaaaaagcaaaaaaccccaggacatttaaaaagatggtatgaacttcag tggaagattaatatataatacaaagcctttaacattttaaaatgtaacaaaatattcataccatagaatgtaccattttact catttttaagtgtacaattcagtggcattaagaatactcacaatgtggtgtgaccatcaccattatttccagaattttt catcatcccgagcagaaactctgtatccattaaccaggtccaaaacctttccatgatgggtggagacaagatgtgaaaat atgttctctatggaatgtcagaaacaggggatgaaaagggcatttggggtacagggtgagaagagggttgagaggcaagt gaagcatgtaggcttaggatggggcagggccgccactagcccatatggcaacttgatgtgcactacaaacaggcatctct

acttggccagtcaaggagctgtgaaatcaggagttgaggccgggttgcctggactgcaaagcacatgccttctgggttctggggctgagttgaaagagggccctgagatgagttctcgaggtggatcccatgtgacaggaaacagggcgccattggaaat tttccagcttggaatatgagcaaaatcaaatggagatgacaatgaggcagaagccgcttacaacggctgtgacgggaaga tggccctggtttaaaaccatttagcagtctgaaagtttatgcatagtctcttgtctgatgattaatctcagttcttta tgctccagagcctctcggaacacaaactgggctctggggatgctgacagggggtgcgatggagacttcacttcctttatttttcaaacagggtcctaattgtctcacagaaaatgtgttaaaggaaatagctaaagctggccgtctcttcctcatcccg gccactatccaggacaagttaatcatccgtttcactgtgacatcccagtttaccactagggatgacatcctgagagactg 10 gaateteattegagatgetgeeacteteateetgagteageactgtactteeeaaceeageeetegggttgggaacetea tctcccaaatcaggggtgccagagcctgggcctgtggaacgtcccttcagtctgtcagtggggcaggagtgatccagtc caggccaggaagatcatcaagcagcctcagcgtgtgggagccggtcccatgaaaagggaaaatggcctccatcttgaaac 15 ctgcccacagaggcctctgtgaagaatgggggctcctccagggtcagaatcttttccaggtttccagaaagacatgatgat gctgaagaaaagtgccttcaaaaaactcatcaaattctacagcgtccccagctttcctgaatgcagctctcaatgtggac tccagctgccctgttgccctctgcaggccatggtttagacacagggccttcagccagagtctgaggatatacttcaggga ctctgtgaacccctcacaattgtatgccaactttgtgtgtcttatgtgtacatgcatttttcttggggcgagttcataatt ttaatcaaatteteataggggetteatgacecacaataggatacaaaegaagagtttaagecageatgatecagatgggt tcagcagtctggtcagtgagaaagggccgagggtagacaggcagcttctgtggttcagcttgtgacatgatatataacac agaaataaattatgcttgtccctgaaacaaacataccctgtgtcacttaattggctgctgaaacattgattaaccagtc tgggagcttaaacatatgtactttttttgaagcatcaattatgagtcaggcactgtggctcatggttcataaatgaggaa accaacgtttaggtcacacagctttaaataggcaaacccaggtctcctgcttccagtgaagcccaggctgtttccaccat gcagtactgctcaaggttggacctgaacaggagctcacagcccagcaggctgctggtcctccagtacatttaaatgtttc ctttctaggtttggaacttgtgcattttccccttattttcctggacccggtagtcaaataaaagctatgctcacaagtgg cttgcccataattagttcagaggccaaacacataattttatttccatttcagatggtactttgataggttgtgactctga 30 ttaaagctttttttttttttttttttttttttttttgagactagtgcttctctctttcccaggctggagtgcagaggc 35 ttgagatggggtctcattctgtgagtgcagtggttggaacacagttcactgcagcctcagcctctgaggctcaagctgtc tttccaccteagtcccacgagtagctgggactatgagtgcacaccactatgcctggctaatttttataactttttacaga gacagggtctccctgtgttgcccaggctggtctggaactcctgggctcaggtgatccgactaagaagccctgttgacagc tgccttccagcctcctctgtctgtctgccaggaggagcaatccaagggagatgatggaggcctgtgaataccgtgaatac cgtgaatactaccgagctagagggaaagagatggtggattacatctcccagtacctgagcactgtgcgggagaggcaggt gactccaaatgtgcagcctggatacctgcgagcccagctacctgcgagtgctcccgaggaacccgacagctgggacagca tctttggggacattgaacgagtcatcatgcctggggtggttcactggcagagcccccacatgcacgcctactatcctgct 50 actocttcacctttaaccottccaagtggatgatggtacactttgactgtactggattctgggtcaaggacaagtacaag ctgcagcagacctttagtgtgaacccatctacctccgacatgccaactctggtgcagccacggacttcatgcattggca gatccccttgagccggcgctttcgctccattaagctgtggtttgtgattcggtccttcggggtgaagaatcttcaagcac 55 aggcaccttggtttggtggttttccgtctgaagggtcctaattgtctcacagaaagtgtgttaaaggaaatagccaaagc tggccagctctttctcatcccggctactatccaagacaagctgatcatccgtttcactgtgacgtcccagtttaccacca aggaggacatcctgagagattggcacctcatccaagaggctgctaaccttgtcctgagccagcactgcacttcccagccg tgacccagcacaggcccggaagatcatcaagcagccaggagccagtctggcgagaagggaaggcggctctgatctggaaa 60 cgatgccggatccctttgatgattgcttctctgaagaggcccccaacaccaagcacaagctgtcatcctttctgttc agttacttgtcggtccagaacaggaggaagacaacgcggtccctcagctgcaacagtgtgcctatgagtgcccagaagtc actccccgcagacgcttcactgaagaatgggggctccttccgggccagaatcttttccgggttcccagaacaaatgatga tgatgaagaaaggtgeetteaaaaagetgateaagttetacagegteeeccagettteetgaatgeagtteteagtgtget 70 75 atgcctctgaccaggctcactcctctgtggaaaaggctggtttgatttcccttgtgaagatgaaatttctgcctgtggat gacaacttctcactccgaggggaagctcttcagaaggccatcgaggaagacaagcagcggggcttggtgcccgtcttgt ctgtgcaacactagggaccactggggtctgtgcatttgactgcctgtcagagctgggccccatctgtgcccgtgaggggc tgtggctccacatcgatgctgcttatgcaggcactgccttcctgtgccccgagttccgggggtttctgaaggggattgag tatgccgactccttcacctttaatccttccaagtggatgatggtgcattttgactgtactgggttctgggtcaaggacaa gtacaagetgeageagaeetteagtgtgaateeeatetaeeteaggeatgeeaaeteaggegtggeeaeegaetteatge actggcagatecccctgagccgacggtttcgctctgttaaactctggttcgtgattcggtccttcggggtgaagaatctt

tgcCaagaggcaccttggcctggtggtttttcgtctaaagggtcctaattgtctcacagaaaatgtgttaaaqqaaatag ctaaagctggccgtctcttcctcatcccggccactatccaggacaagttaatcatccgtttcactgtgacatcccagttt accactagggatgacatcctgagagactggaatctcattcgagatgctgccactctcatcctgagtcagcactgtacttc ccaacccagcctcgggttgggaacctcatctcccaaatcaggggtgccagagcctgggcctgtggaacgtcccttcagt ctgtcagtggggcaggagatgatccagtccaggccaggaagatcatcaagcagctcaggtgtgggagccggtccatg aaaagggaaaatggcctccatcttgaaaccctgctggacccagttgatgactgcttttcagaagaggccccagatgccac caagcacaagctgtcctccttcctgttcagttacttgtctgtgcagactaagaagaagacggtgcgctccctcagttgca acagtgtgccagtgagtgctcagaagccactgcccacagaggcctctgtgaagaatgggggctcctccagggtcagaatc ttttccaggtttccagaagacatgatgatgctgaagaaaagtgccttcaaaaaactcatcaaaattctacaggtccccag ctttcctgaatgeagctctcaatgtggactccagctgccctgttgccctcttgcaggccatggtttagacacagggccttc tgcatttttcttggggcgagttcataattttaatcaaattctcataggggttcatgacccacaataggatacaaacgaag agtttaagccagcatgatccagatgggttcagcagtctggtcagtgagaaagggccgagggtagacaggcagcttctgtg gttcagcttgtgacatgatatataacacagaaataaattatgcttgtccctgaaacaaaaaagtgcgcaggactggcaa gagggaagccgggctgctccacgcctttcacgccttccacctcctgcgtgtccatctgtgagaaggagccagagcccaag gggagagacgtgtgacgccagacgtgcagcctggctacctgcgagcccagctgcctgagagtgctcctgaggaccccgac agctgggacagcatctttggggacattgaacgaatcatcatgcctggggtggtacattggcagagccccatatgcacgc ggcagcaaggaagaacaaaatcctggaaatgaaaacgtctgagcccgatgctgatgagtcctgcctaaatgcccgactcg tggcctatgcctctgaccaggctcactcctctgtggaaaaggctggtttgatttcccttgtgaagatgaaatttctgcctgtgatgacaacttctcactccgaggggaagctcttcagaaggccatcgaggaagacaagcagcggggcttggtgcccgtctttgtctgtgcaacactagggaccactggggtctgtgcatttgactgcctgtcagagctgggccccatctgtgcccgtg aattoctgccaagaggcaccttggcctggtggtttttcgtctaaagggtcctaattgtctcacagaaaatggttaaagg aaatagctaaagctgccgtctcttcctcatcccggccactatccaggacaagttaatcatccgtttcactgtgacatcc cagtttaccactagggatgacatcctgagagactggaatctcattcgagatgctgccactctcatcctgagtcagcactg tacttcccaacccagcctcgggttgggaacctcatctcccaaatcaggggtgccagagcctgggcctgtggaacgtccc ttcagtctgtcagtggggcaggagatgatccagtccaggccaggaagatcatcaagcagcctcagcgtgtgggagccggt cccatgaaaagggaaaatggcctccatcttgaaaccctgctggacccagttgatgactgcttttcagaagaggccccaga tgccaccaagcacaagctgtcctccttcctgttcagttacttgtctgtgcagactaagaagaagacggtgcgctccctca gttgcaacagtgtgccagtgagtgctcagaagccactgcccacagaggcctctgtgaagaatgggggctcctccagggtc agaatettttecaggtttecagaagacatgatgetgaagaaaagtgeetteaaaaaacteateaaattetacagegt gtacatgcatttttcttggggcgagttcataattttaatcaaattctcataggggctcatgacccacaataggatacaaa cgaagagtttaagccagcatgatccagatgggttcatcagtctggtcagtgagagaggcgagggtagacaggcagctt ccaagacaacactactaaggcttctttgggaggggaagtagggtaaggtaagaggaaagtaagggacctcctatccagcctcctggaatcctgacttctttccttgttatttcaacttcttccaccccatcttttaaacttttagaccccagccacag aagettacaactaaaagaaactetaaggeeaatttaateeaaggttteattetatgtgetggagatggtgtacagtaggg tgaggaaaccaaattctcagttggcactggtgtacccttgtacaggtgatgtaacatctctgtgcctcagtttgctcact ataaaatagagacggtaggggtcatggtgagcactacctgactagcatataagaagctttcagcaagtgcagactactet tacccacttccccaagcacagttgggggggacagctgaagaggtggaaacatgtgcctgagaatcctaatgaaatc ggggtaaaggagcctggaacacatcctgtgaccccgcctgtcctgtaggaagccagtctctggaaagtaaaatggaaggg ctgcttgggaactttgaggatatttagcccacccctcatttttacttggggaaactaaggcccagagacctaaggtgac tgcctaagttagcaaggagaagtcttgggtattcatcccaggttggggggacccaattatttctcaatcccattgtattc tggaatgggcaatttgtccacgtcactgtgacctaggaacacgcgaatgagaacccacagctgagggctctgcgcacag aacagctgttctccccaggaaatcaactttttttaattgagaagctaaaaattattctaagagaggtagcccatcctaa aaatagotgtaatgoagaagttoatgttoaaccaatcatttttgcttacgatgcaaaaattgaaaactaagtttattaga ggcctccctgagcttacaatataaaagggggacagaggtgaaggtctacacatcaggggcttgctcttgcaaaaccaa accacaagacagacttgcaaaagaaggcatgcacagctcagcactgc (SEQ ID NO:12248) aaaccacaagacagacttgcaaaagacatgcacagctcagcactgctctgttgcctggtcctcctgactggggtgag ctggaggactttaagggttacctgggttgccaagcettgtctgagatgatccagttttacctggaggaggtgatgccca agctgagaaccaagacccagacatcaaggcgcatgtgaactccctgggggagaacctgaagaccctcaggctgaggctac agctyddadacdagactagactactagycytarygaactoctyggagcaggtgaagactoctaggagcaggtgaagactgcattaataagctccaa gagcactytcatcgatttctccctytgaaaacaagagcaaggccytygaagcaggtgaaggactacatgacaatgacatgaagatacg aaactgagacatcagggtggcgactctatagactctaggacataaattagaggtctccaaaatcggatctggggctctgg gatagctgacccagccccttgagaaaaccttattgtacctcctcttaagaatttattactcctctgatacctcaaccccca accagggagcccctttgatgattaattcaccttccagtgtctcggagggattcccctaacctcattccccaaccacttca atcccagcactttgggaggctgaggcgggtggatcacttgaggtcaggagttcctaaccagcctgqtcaacatgqtgaaa cccgtctctactaaaaatacaaaaattagccgggcatggtggcgcgcacctgtaatcccagctacttgggaggctgagg caagagaattgcttgaacccaggagatggaagttgcagtgagctgatatcatgcccctgtactccagcctgggtgacaga gcaagactctgtctcaaaaaaaataaaaataaaaatttggttctaatagaactcagttttaactagaatttattcaa

c (SEQ ID NO:12249) cagttettgcctgcccagattcctctgcagctaaagtgatgaaacttactgggcggagcttcctaaaaagattattaggg tctcctgggttggtgtgcctttaaacctttggactttaccacctcctatctcctatctccttgcaacaaaggttagga aaaatacaacccctcttttaaaagccatgcttactcaggttttccttcatttgcagctaaatacagaaatgagagaata ttttggagcagggatggaagaagaggtattccccttcccaaaccttctgatttcccagtacatcccccactggaaaa attcatttaaaatcagtataataagcattgattagatgcctactatgcatctgggcttgagggcaaactggactcaggcc ttttggcctcaagaagctcacagtgtgagagtggcatttgtgtcctcttgaaattcacaggactaaattgtgcccaggct gacattctatccatccataggtgcctgccttctcacttcctctcttcatgggctcttgccttgtaccaaatccaaacc caaatotecteacatgtgagtgttggcatteatgteteagacatgaeetatgggettgggaetttteeeegtggaeeeea taaggcacagggtctttattcaaatgttcatactatotottgacagaaatactatgagacatattgatggagaagcogtt atctccatatgctaaatgaggacttgcaccagggaacttgcccatggttctctcccaaccacttaaattctgaaattttga 15 atgagagtggacagtaatttcaaatcaatggggaaagaatcaaatcttcagcaaatggcttgagataattagctacacatttcagaacaaataaagaagtcagatccgggccgggcacagtggctcatgcctgtaatctcagcactctgggaggccaagg cgggcggatcataaggtcaggagatcgagaccatcctggttaacacagtgaacccctctctaataaaaatacaaaaaaa 20 aggetgeetgeateectgagteactetecetetecttetgaatgettacetgtgeecagaceaceteettageetegeacectecaggettacaggetacaggettacagggeactettetatgeecateceaagtatagetgaacettecaagggeagacttggtgetaagta 25 30 ttgacactccctgaagagttgggaagagacaccacagtccctgaccctgatccataggtcacacagcaggcatccacag ggtgggcgtgggccctctcatccctccctcccactcacttcacgttggctgggccccaaggtgtttgcaccccttgcagt gagtgaccttctctagtgcagcaagctcagaacctgctgccactggagttgtcccattgctgatgcagaaaggtgaagaa tccctgttgggacagatgaaaaacagacacagggaggatgagttttgccctgactatagagtggcagggccaaggcag agcccaggcctcctgcacctaggtcagtgttcctcccagttacagtctaaactggaatgcaggcaaagcccctgtggaag gggaaggtgaaggctcaatcaaaggatccccagagactttccagatatctgaagaagtcctgatgtcactgcccggtcc ttocccaggtagagcaacactoctegeegcaacccaactggeteeeettacettecacacacacacacacacacacac acacacacacacacacaaatccaagacaacactactaaggcttctttgggaaggggaagtagggtaaggtaagaggaa aaactttagactccagccacagaagcttacaactaaaagaaactctaaggccaatttaatccaaggtttcattctatgtg agctgagggcctctgcgcacagaacagctgttctccccaggaaatcaactttttttaattgagaagctaaaaaattattc taagagaggtagcccatcctaaaaatagctgtaatgcagaagttcatgttcaaccaatcatttttgcttacgatgcaaaa attgaaaactaagtttattagagaggttagagaaggaggagctctaaggagaaaaaatcctgtgccgggaaaccttgatt gtggctttttaatgaatgaagaggcctccctgagcttacaatataaaagggggacagagaggtgaaggtctacacatcag gggcttgctcttgcaaaaccaaaccacaagacagacttgcaaaagaaggcatgcacagctcagcactgctctgttgcctg gtoctoctgactggggtgagggccagccaggccagggcacccagtctgagaacagctgcacccacttcccaggcaacctgcctaccatgcttcgagatct (SEQ ID NO:12250) 55 gggggggggatttagagacttgctcttgcactaccaaagccacaaagcattgcagaaaaagagagctccatcatgcc tggeteageactgetatgetgeetgetettaetgaetggeatgaggateageaggggeeagtaeageegggaagaeaata $\verb|cttatcggaaatgatccagttttacctggtagaagtgatgcccaggcagagaagcatggcccagaaatcaaggagcatt| \\$ tgaattccctgggtgagaagctgaagaccctcaggatgcggctgaggcgctgtcatcgatttctcccctgtgaaaataag 65 cagcatctaattttgaataaatggatcttattcg (SEQ ID NO:12251) 75 actcagcotggaactgaccggagcagcagttcttgagtcaattccattccaacttctagaagattcttttcccgtcgaag

accagaactctcctctgaccaactgccccacagcacacatatcctcaaaggatagtcttgaatacgtgatggaagaatta aagagagtgaggtctgaagaaaatcagccctctcggggtttcctttgggtaactgagtgctaaggtgacttccgagtcag caagaaatateggacgttcaacccaggttgagtggaggaaacaattatttctcaatcctaatatgttctggaatagccca tttätccacgtcattatgacctgggagtgcgtgaatggaatccacagatgagggcctctgtacatagaacagctgtctgc aattaaactcaaaaattgcatggtttagaagagggaggaggagctgaataacaaaaacctttgccaggaaggcccact gagccttcagtataaaagggggaccaagaacaggaggtctacatttagagacttgctcttgcactaccaaagccacaagg cageettgcagaaaagagagetecateatgeetggeteageactgetatgetgeetgetettactgaetggeatgaggat cagcaggggccagtacagccgggaagacaataactgcacccacttcccagtcggccagagccacatgctcctagagctgc ggactgccttcagccaggtgaagactttctttgtaagtatgagctcgcctagcctttcttcctgccatcacctgaaatat 15 cgaaaagctaactaggaggtgaatgcattgtctctcccatgctcaagaactttctgttaagtttccaataaggctccatg tttgctggctaggacaaaagtctgtggtctctgcgtagtctctagatctgggggacagaggtttgggggtttgaagcag caccagcatagagagcttgcattacaaaagtattcccctttcagagctcctggaactggtatggaggtccaaagaaggca ctagggttacttgggttgccaagccttatcggaaatgatccagttttacctggtagaagtgatgccccaggcagagaagc atggccagaaatcaaggagcatttgaattccctgggtgagaagctgaagaccctcaggatgcggctgaggcgctgtgtg 30 agtagcagatgcgttcttccccacccccaatccccttagagccacccaacaaatactgtctcctacagcccagtcaggcc acatgcatccagagacacacacagactagacaggagactaggtaaatctagagagacgcctgtccggtgtcgggtctctt gctcatctgtctctgagcgagtgtgggagtgactttgaggcactcacacgtgaagatttgcgcatagccttcctgttatt Egtgagtcattgtgggttattagctactcccctctctctccatgggaaggctgggggcttcagtcatggctccctcacctc tgggctgccagctgaggctcccaagcacaggaaaacattcatctctttatctcatcttttgggaagcaaattcagtggca cagagetgggetgacaggacgetggtgtttcagaagggecagaagactgctatccctaagccagtatctatgaataatac agtcggggcatctatgtctctgaagcgatgccttggctgctcttgtttttcttacttctctactgatactgggacatca gctggagtctacttgtgcaacggttctggcctgacgatttggccccagtagctgagactttcgctcctctctcagacacc tagaaatagttcatggtggttgagattggagatagacaagaagagacactaaaaacagaacaggtgccttggagctctga gtggagcaggtgaagatgattttaataaggtaagtggcaaaggggggagtgtaacaagacctctgtctactcaccaaa gcgcagaaggagggcgggagctattctgcacctggagtgtgggaacccagcaaatggtgtgaacctcctctgccagttaga aagccaccacctcagttacatttgttttctgcaaagcgtctctggcagtttctaaatgactgctccacttttgcaggctt ttggcttagactgaccagacagcctatgagcacagggcactaggtgttgaggagagtgacataggaaacagaaagtacag ggctcagcctggatgccctcccccaaatcagaacgagcagaaagcagaattcttacttgtcccggggcactttccacct ggcaaacaaaatgaggtttcacacttccaactgcctgtgaacctattcaaccctagttcccagaagccatgtggcctaca tcatcatctttgtgggctaggcagagacacctggcagggctctaacattagtgggcatgaattccatgacagcaggtcag tatcactgccctgcttacaaactgctccctctggcatctttgcataacattctgcataagcattatatgagcactggcct cttaaaaaaaattagttgaaaaggtgccaccctgaagacagtgctttgggggactgaatgcttcccttgctgactcctggc 55 actaaatggccgatgttctgttctggttggcatcagatggagatggtctgggggaaagtactgggtttgtgaaaataccc ccttctccattagtggcatgctctttcagctcttatctttatattccagtaagttattttgctctcattgttttaacaaa agaacccaacaacaccaaatctttgcataccttgttcgattggagaattttaatgtttttcatttatcattgtaaaaccg gaatgaatttgacatcttcatcaactgcatagaagcatacatgatgatcaaaatgaaaaagctaaaacacctgcagtgtgt attgagtctgctggactccaggacctagacagagctctctaaatctgatccagggatcttagctaacggaaacaactcct tccattggggacactttatagtatttaaagggagattatattatatgatgggaggggttcttccttgggaagcaattgaa qcttctattctaaggctggccacacttgagagctgcagggccctttgctatggtgtcctttcaattgctctcatccctga 70 gttcagagctcctaagagagttgtgaagaaactcatgggtcttgggaagagaaaccagggagatcctttgatgatcattc ctgcagcagetcagagggtteccctactgtcatececcagecgettcatecetgaaaactgtggecagtttgttatttat tttaaaagaaaaatcccttaaaattccagagggcagaagcagtgaatcttagactccacaaaaagaatgccagcaacctc 75 tccaggaaggggttgagctcggatcagatcagatcagaagtcttgcctggctttcaaagcatcagcataaactactgatat cttcaagctcagtcctttaaaatgtgtcctgaaaccttaaaaggcattctaccttccaaagctagggaaggtgattctaa gtaaccatcggaaggaagtgggaagcatcaaagctgaaactctgagacgaaatgttggggttaaaaatggaagctagggg ccaacacacacaccaacactaggcaagagatgcctaatgtgtcagtggttgcttcaagctccagaggtcctggggtgaact tagatcc (SEQ ID NO:12252) gatecccagagaetttecagatatetgaagaagteetgatgteaetgeeeeggteetteeeeaggtagageaaeaeteet

ccaagacaacactactaaggcttctttgggaggggaagtagggataggtaagaggaaagtaagggacctcctatccagc ctccatggaatcctgacttcttttccttgttatttcaacttcttccaccccatcttttaaactttagactccagccacag aagettacaactaaaagaaactetaaggecaatttaatecaaggttteattetatgtgetggagatggtgtacagtaggg tgaggaaaccaaattctcagttggcactggtgtacccttgtacaggtgatgtaacatctctgtgcctcagtttgctcact ataaaatagagacggtaggggtcatggtgagcactacctgactagcatataagaagctttcagcaagtgcagactactct tacccacttcccccaagcacagttggggtgggggacagctgaagaggtggaaacatgtgcctgagaatcctaatgaaatc ggggtaaaggagcctggaacacatcctgtgaccccgcctgtcctgtaggaagccagtctctggaaagtaaaatggaaggg ctgcttgggaactttgaggatatttagcccacccctcatttttacttggggaaactaaggcccagagacctaaggtgac tgcctaagttagcaaggagaagtcttgggtattcatcccaggttggggggacccaattatttctcaatcccattgtattc 10 tggaatgggcaatttgtccacgtcactgtgacctaggaacacgcgaatgagaacccacagctgagggcctctgcgcacag aacagctgttctccccaggaaatcaactttttttaattgagaagctaaaaattattctaagagaggtagcccatcctaa aaatagctgtaatgcagaagttcatgttcaaccaatcatttttgcttacgatgcaaaaattgaaaactaagtttattaga gaggttagagaaggaggagctctaagcagaaaaaatcctgtgccgggaaaccttgattgtgqctttttaatgaatgaaga ggcctccctgagcttacaatataaaagggggacagagaggtgaaggtctacacatcaggggcttgctcttgcaaaaccaa 15 cacageteageaetgetetgttgeetggteeteetgaetggggtgagggeeageecaggeeagggeacccagtetgagaa cagctgcaccaccttcccaggcaacctgcctaacatgcttcgagatctccgagatgccttcagcagagtgaagactttct ttcaaatgaaggatcagctggacaacttgttgttaaaggagtccttgctggaggactttaagggttacctgggttgccaa gccttgtctgagatgatccagttttacctggaggaggtgatgccccaagctgagaaccaagacccagacatcaaggcgca 20 tgtgaactccctgggggagaacctgaagaccctcaggctgaggctacggcgctgtcatcgatttcttccctgtgaaaaca gacatcttcatcaactacatagaagcctacatgacaatgaagatacgaaactgagacatcagggtggcgactctatagac tctaggacataaattagaggtctccaaaatcggatctggggctctgggatagctgacccagccccttgagaaaccttatt 30 acaacctaaatttggttctaggccgggcgcggtggctcacgcctgtaatcccagcactttgggaggctgaggcgggtgga tcacttgaggtcaggagttcctaaccagcctggtcaacatggtgaaaccccgtctctactaaaaaatacaaaaattagccg ggcatggtggcgcgcacctgtaatcccagctacttgggaggctgaggcaagagaattgcttgaacccaggagatggaagt ataaatttggttetaatagaaeteagttttaaetagaatttatteaatteetetgggaatgttacattgtttgtetgtet 35 tcatagcagattttaattttgaataaataaatgtatcttattcacatcagatcttgtaaactgtagaatgcaccctccaa aatotatttgcataagcacacacacacacacacacacacaccccagcagttettgcctgcccagattcctctgcagct aaagtgatgaaacttactgggcggagcttcctaaaaagattattagggtctccctgggttggtgtgcctttaaacctttgg actttaccacctcctatctctcctatctccttgcaacaaaggttaggagaacaagaatgcagaaaaaaacgggtcctggat tactcaggttttccttcatttgcagctaaatacagaaatgagagaatattttggagcagggatggaagaagagaggtatt ccccttcccacaaccttctgatttcccagtacatcccccactggaaaaattcatttaaaatcagtataataagcattgat tagatgcctactatgcatctgggcttgagggcaaactggactcaggccttttggcctcaagaagctcacagtgtgagagt tgtctcagacatgacctatgggcttgggacttttccccgtggaccccagtgacttttcagatgaacaggtatcttcaaaa acttgagaaataggggtcttgttgttcttgttgctttttgtcaatataaggcacagggtctttattcaaatgttcata ctatctcttgacagaaatactatgagacatattgatggagaagccgttatctccatatgctaaatgaggacttgcaccag ggaacttgcccatggttctctccaaccacttaaattctgaaattttgaatgagagtggacagtaatttcaaatcaatggg gaaagaatcaaatcttcagcaaatggcttgagataattagctacacatttcagaacaaataaagaagtcagatccgggcc 50 qcctgtagtcccagctactcgggacgctgaggcaggagaatggcttgaactcgggaggcagagcttgcaggtgagctgag accotatttaacagattatagatgaaagaaaggtacaaatggcttttacatacctcccttctccctgacattttgtatgt 55 teettetgaatgettaeetgtgeeeagaeeaeeteettageetegeaeeeteeaggettaeagggeaetettetatgeee atcccaagtatagetgaacettecaagggecagaettggtgetaagtaecaagtaegcaaagattaataaaacaatgtee 60 gcctggtgcccatgctgagtccacttctggaacacccagctcagagagggggttagacctgcaggctaacacagacacag cccagaaaacccaggagccgagggggaaggaaaggtgcaagaaggggaaacccaggtcctggtccccttctctctgct tcctggcagcagcactcagacagaacccttaagccagtctaagtctggcaggaccagtaagttctgagttagctccatactagtttctagcaggctctttctcacttcctgattcttaggtttctacattgacactccctgaagagttgggaagagacac cctgctgccactggagttgtcccattgctgatgcagaaaggtgaagaactagcagaacactggaaatgccctccatctgg gtccatggctacttaatgctccctggcaggcaggaggacaggtgctattccctgttgggacagatgaaaaacagacacag 70 gagactttccagatatctgaagaagtcctgatgtcactgccccggtccttccccaggtagagcaacactcctcgccgcaa actactaaggcttctttgggaaggggaagtagggataggtaagaggaaagtaagggacetectatecageetecatggaa tcctgacttcttttccttgttatttcaacttcttccaccccatctttaaactttagactccagccacagaagcttacaa ctaaaaqaaactctaaggccaatttaatccaaggtttcattctatgtgctggagatggtgtacagtagggtgaggaaacc 75 aaattctcagttggcactggtgtacccttgtacaggtgatgtaacatctctgtgcctcagtttgctcactataaaataga qacqqtaqqqqtcatgqtqaqcactacctgactagcatataaqaagctttcagcaagtgcagactactcttacccacttc ccccaagcacagttggggtgggggacagctgaagaggtggaaacatgtgcctgagaatcctaatgaaatcggggtaaagg agcctggaacacatcctgtgaccccgcctgtcctgtaggaagccagtctctggaaagtaaaatggaagggctgcttggga actttgaggatatttagcccacccctcatttttacttggggaaactaaggcccagagacctaaggtgactgcctaagtt agcaaggagaagtettgggtatteateecaggttggggggacecaattattteteaateecattgtattetggaatggge aatttgtccacgtcactgtgacctaggaacacgcgaatgagaacccacagctgagggcctctgcgcacagaacagctgtt ctcccaggaaatcaacttttttaattgagaagctaaaaaattattctaagagaggtagcccatcctaaaaatagctgt

aatgcagaagttcatgttcaaccaatcatttttgcttacgatgcaaaaattgaaaactaagtttattagagaggttagag agcttacaatataaaaagggggacagaaggtgaaggtctacacatcaggggcttgctcttgcaaaaaccaaaaccacaaac tgctatgctgctgctcttactgactggcatgaggatcagcaggggccagtacagccgggaagacaataactgcacccac ccagctggacaacatactgctaaccgactccttaatgcaggactttaagggttacttgggttgccaagccttatcggaaa tgatccagttttacctggtagaagtgatgccccaggcagagaagcatggcccagaaatcaaggagcatttgaattccctg actgcatagaagcatacatgatgatcaaaatgaaaagctaaaacacctgcagtgtgtattgagtctgctggactccagga cctagacagagctctctaaatctgatccagggatcttagctaacggaaacaactccttggaaaacctcgtttgtacctct aagcccaatattataattttacagtatttattatttttaacctgtgtttaagctgtttccattggggacactttatagta tttaaagggagattatattatatgatgggaggggttcttccttgggaagcaattgaagcttctattctaaggctggccac acttgagagetgeagggeeetttgetatggtgteettteaattgeteteateeetgagtteagageteetaagagagttg tgaagaaactcatgggtcttgggaagagaaaccagggagatcetttgatgatcattcctgcagcagctcagagggttccc 20 tttgaataaatggatcttattcgcagtcaggagagagggcagtgagggtccatgctagctgggtcttgagcctcttctgg ggttcagtctctgatctacagcagtgtgtccacacctaaaacatcagctcagagaggcagttgcttctgctgttggaaac ggacatcccaaaaaaaacaaaaaacagaaatcaaaagggaaggagaaagtgaaagggatggaggcagcttgtccccttc cctgtgcttgctggtagaaaactcagcctggaactgaccggagcagtagtcttgagtcaattccattccaacttct ataagacgagataaccccgagttcctgttctaccagccctggtgtggtaaccctctccaatggggcaggcttggaaccct gtgccaacgaagatectcccccgtactgatgcaggaaggacagcccgggagtgtaccctctacatgggtctacttttatt agtaggagaagtccctactgaagggaaggtccagacataatcaaaggactaccagagatctcccaggtatctgtagaagt actaacatctccatccttcaacagctacaggttacacgtctccaaggctgggacattgtaaaacagggccatggtaaggt ctacccgacagcacagagcaagcctcccagaagtctgagttccttctctaacttctcatgctgggatctgagcttcttcgtgaaacacggggcagagggagcaccagaactctcctctgaccaactgccccacagcacacatatcctcaaaggatagtc tgotaaggtgatcegaagaattaaaggagtgaggtctgaagaaaatcagccctctcggggtttcctttgggtaactgag tgotaaggtgacttccgagtcagcaagaaatatcggacgttcaacccaggttgagtggaggaaacaattatttctcaatc ctaatatgttctggaatagcccatttatccacgtcattatgacctgggagtgcgtgaatggaatccacagatgagggcct acctttgccaggaaggccccactgagccttcagtataaaagggggaccaagaacaggaggtctacattttagagacttgct cttgcactaccaaagccacaaggcagccttgcagaaaagaggctccatcatgcctggctcagcactgctatgctgcctg ctcttactgactggcatgaggatcagcaggggccagtacagccgggaagacaataactgcaccaacttcccagtcggcca cttcctgccatcacctgaaatatgcattctgatggaactgcaaaaatagctctccttctcctccttcttctcctcttct tacctcatgctgctcctcccctatttccagcacctattacccttaaacttaaatctagagagtcctagggaaagccatga gttaaactaaacccaggcacatccgaaaagctaactaggaggtgaatgcattgtctctcccatgctcaagaactttctgt taagtttccaataaggctccatgttttgctggctaggacaaaagtctgtggtctctgcgtagtctctagatctgggggac agaggtttgggggtttgaagcagcaccagcatagagagcttgcattacaaaagtattcccctttcagagctcctggaact .55 taqqqacqqqqacqqqaqqtqctqcttqtqacaqcaqaqctqqqtctqatqccttqactttcaaaaaqaqaaqtqaqaaqa ccttgactcagcatatcgccagcagtcaagggttgtgaagagctcattctgtggtaaagggagaaaatgtaactagaagg qqcqgqqatqqqqqqqqqtccctaqqaacaqtccatcaaqgttaqcaqcaacaqatccatcaccattccaqtaaqtca cacccaacctctgatccctgctctagggttacttgggttgccaagccttatcggaaatgatccagttttacctggtaga agtgatgccccaggcagaagcatggcccagaaatcaaggagcatttgaattccctgggtgagaagctgaagacctca ggatgeggctgaggegctgtgtgtgagtageagatgegttettececacceccaatececttagagecacccaacaaatact gtctcctacagcccagtcaggccacatgcatccagagacacacagactagacaggagactaggtaaatctagagagac gcctgtccggtgtcgggtctcttgctcatctgtctctgagcgagtgtgggagtgactttgaggcactcacacgtgaagat ttcagtcatggctccctcacctctgggctgccagctgaggctcccaagcacaggaaaacattcatctttatctcatct tttgggaagcaaattcagtggcacagagctgggctgacaggacgctggtgtttcagaagggccagaagactgctatccct aagccagtatetatgaataatacagteggggeatetatgtetetgaagegatgeettggetgetettgttttettaett ctctcactgatactgggacatcagctggagtctacttgtgcaacggttctggcctgacgatttggccccagtagctgaga 70 ctttcgctcctctctcagacacctagaaatagttcatggtggttgagattggagatagacaagaagagacactaaaaaaca gaacaggtgccttggagctctgagagacaaaacccgagacctgagttcacacccacacttagcaagccatcttagtgatt gcaaagacatacattgcatctttctaggctgtcctctgctgtccccctcagtccctaccgaaatagataaggaccaatca cctgtgaaaataagagcaaggcagtggagcaggtgaagagtgattttaataaggtaagtggcaaagggggcgagtgtaac aagacctctgtctactcaccaaagcgcagaaggagggcgggagctattctgcacctggagtgtgggaacccagcaaatgg tgtgacctcctctgccagttagaaagccaccacctcagttacatttgttttctgcaaagcgtctctggcagtttctaaat gactgctccacttttgcaggcttttggcttagactgaccagacagcctatgagcacagggcactaggtgttgaggagagt gacataggaaacagaaagtacagaaagtaccttgttgggaaacaggctcacacaggtacagaaagcagacatgaatt aatttactcaggtacatcattggggctcagcctggatgcccctccccaaatcagaacgagcagaaagcagaattcttac ttgtcccggggcactttccacctggcaaacaaaatgaggtttcacacttccaactgcctgtgaacctattcaacctagttcccagaagccatgtggcctacatcatctttgtgggctaggcaggagacacctggcagggctctaacattagtgggca

accaaccatttccctgctatctctatcactgccctgcttacaaactgctcctctggcatctttgcataacattctgcat aagcattatatgagcactggcctcttaaaaaaaaattagttgaaaaggtgccaccctgaagacagtgctttggggactgaa tgcttcccttgctgactcctggcagtgcttaaagctgggagaaggttggtcccaccaccacctgactactacagtatagt ctctctttcttttctttttaaactaaatggccgatgttctgttctggttggcatcagatggagatggtctggggaaa gtactgggtttgtgaaaatacccccttctccattagtggcatgctctttcagctcttatctttatattccagtaagttat tttgctctcattgttttaacaaaagaacccaacaacaccaaatctttgcataccttgttcgattggagaattttaatgtt tttcatttatcattgtaaaaccgaggacaattttataactttttgtacgtggctgttacatgtagggcaatctgtcttt acggccccttcccaaagcagacggacaaatctttgggtccttcagctcccaacacaagaaagcagagatctttctatgct ${\tt cagcatccttcccagggcagggagccctcagcccaccaatgggtactaaccagatgcttctctccccacacagctccaa}$ gaccaaggtgtctacaaggccatgaatgaatttgacatcttcatcaactgcatagaagcatacatgatgatcaaaatgaa aagctaaaacacctgcagtgtgtattgagtctgctggactccaggacctagacagagctctctaaatctgatccagggat ctttcaattgctctcatccctgagttcagagctcctaagagagttgtgaagaactcatgggtcttgggaagagaacca gggagatcctttgatgatcattcctgcagcagctcagagggttccctactgtcatccccagccgcttcatccctgaaa actgtggccagtttgttatttataaccacctaaaattagttctaatagaactcatttttaactagaagtaatgcaattcc tctgggaatggtgtattgtttgtctgcctttgtagcagactctaattttgaataaatggatcttattcgaattacagtgt ggtgtctattgagttctgtctgatttaaaagaaaaatcccttaaaattccagagggcagaagcagtgaatcttagactcc acaaaaagaatgccagcaacctctccaggaaggggttgagctcggatcagatcagaggaaagtcttgcctggctttcaaa gcatcagcataaactactgatatcttcaaqctcagtcctttaaaatgtgtcctgaaaccttaaaaggcattctaccttcc gggttaaaaatggaagctaggggcaggaggtggggagatggctcagcagttagagtgtgtgcccggcaccagtgagacag 30 ctccagaggtcctggggtgaacttagatcc (SEQ ID NO:12253) aaagagctggaggcgcaggccggctccgctccggccccggacgatgcggcgcgcccaggatgctgccgtgcctcgtag tgctgctggcggcgctdctcagcctccgtcttggctcagacgctcatgggacagagctgcccagcctccgtctgtgtgg tttgaagcagaatttttccaccacatcctccactggacacccatcccaaatcagtctgaaagtacctgctatgaagtggc gctcctgaggtatggaatagagtcctggaactccatctccaactgtagccagaccctgtcctatgaccttaccgcagtga ccttggacctgtaccacagcaatggctaccgggccagagtgcgggctgtggacggcagccggcactccaactggaccgtc accaacacccgcttctctgtggatgaagtgactctgacagttggcagtgtgaacctagagatccacaatggcttcatcct cgggaagattcagctacccaggcccaagatggcccccgcgaatgacacatatgaaaagcatcttcagtcacttccgagagt atgagattgccattcgcaaggtgccgggaaacttcacgttcacacaagaaagtaaaacatgaaaacttcagcctccta acctctggagaagtgggagagttctgtgtccaggtgaaaccatctgtcgcttcccgaagtaacaaggggatgtggtctaa agaggagtgcatctccctcaccaggcagtatttcaccgtgaccaacgtcatcatcttctttgcctttgtcctgctct ccggagccctcgcctactgcctggccctccagctgtatgtgcggcgacgaaagaagctacccagtgtcctgctcttcaag ccccagcacagggcccacctgggagcaacaggtggggagcaacagcaggggccaggatgacagtggcattgacttagttc aaaactctgagggccgggctggggacacacagggtggctcggccttgggccaccacagtcccccggagcctgaggtgcct ggggaagaagacccagctgctgtggcattccagggttacctgaggcagaccagatgtgctgaagagaaggcaaccaagac aggetgeetggaggaagaategeeettgaeagatggeettggeeecaaattegggagatgeetggttgatgaggeagget tgcatccaccagccctggccaagggctatttgaaacaggatcctctagaaatgactctggcttcctcaggggccccaacg ggacagtggaaccagccactgaggaatggtcactcctggccttgagcagctgcagtgcactgggaatatctgactggag ctttgcccatgaccttgcccctctaggctgtgtggcagcccaggtggtctcctgggcagctttaactcagacctggtca ccctgcccctcatctctagcctgcagtcaagtgagtgactcgggctgagaggctgcttttgattttagccatgcctgctc ctctgcctggaccaggaggagggccttggggcagaagttaggcacgtctgggcacttttctgcaagtccactgg 55 ggctggcccagccaggctgcagggctggtcagggtgtctggggcaggaggaggccaactcactgaactagtgcagggtat gtgggtggcactgacctgttctgttgactggggccctgcagactctggcagagctgagaagggcagggaccttctccctc ctaggaactctttcctgtatcataaaggattatttgctcaggggaaccatggggcttctggagttgttgtgtgaggccaccaggctgaagtcaagctcagacccagaccctgcttaggccactcgagcatcagagcttccagcaggaggaaggctgta tgtgtttgctgctaatgtccagctacagacccagaggataagccactgggcactggggtccctgccttgttggtg ttcagctgtgtgattttggactagccacttgtcagagggcctcaatctcccatctgtgaaataaggactccacctttagg ggaccetecatgtttgctgggtattagccaagctggtcctgggagaatgcagatactgtccgtggactaccaagctggct tgtttcttatgccagaggctaacagatccaatgggagtccatggtgtcatgccaagacagtatcagacacagcccagaa qqqqgcattatgggccctgcctccccataqqccatttggactctgccttcaaacaaaggcaqttcagtccacaggcatgg aagctgtgaggggacaggcctgtgcgtgccatccagagtcatctcagccctgcctttctctggagcattctgaaaacaga tattotggcccagggaatccagccatgacccccaccctctgccaaagtactcttaggtgccagtctggtaactgaactc ggagaggcagcattgcacagtgaaagaattctggatatctcaggagccccgaaattctagctctgactttgctgtttcca ttcatagggatgtgaggttctgctgaggaaatgggtatgaatgtgccttgaacacaaagctctgtcaataagtgatacat gttttttattccaataaattgtcaagaccaca (SEQ ID NO:12254) gctgtagctggtgagaggaagtcctagaggctatggacactctgctgctgggatcaccgagatgagcagcagctgctcag ggctgagcagggtcctggtggccgtggctacagccctggtgtctgcctccccctgcccccaggcctggggcccccca ggggtccagtatgggcagccagggaggtccgtgaagctgtgttgtcctggagtgactgccggggacccagtgtcctggtt tcgggatggggagccaaagctgetccagggacctgactctgggctagggcatgaactggtcctggcccaggcagacagca

cctggccatgcccacaggatcccctaggggctgcccgctgtgtttttccacggggctgagttctggagccagtaccggatt aatgigactgaggtgaacccactgggtgccagcacacgcctgctggatgtgagcttgcagagcatcttgcgccctgaccc accccagggcetgcgggtagagtcagtaccaggttacccccgacgcctgcgagccagctggacataccctgcctcctggc cgtgccagcccacttoctgctcaagttccgtttgcagtaccgtccggcgcagcatccagcctggtccacggtggagcca gctggactggaggaggtgatcacagatgctgtggctgggctgcccatgctgtacgagtcagtgcccgggactttctaga tgctggcacctggagcacctggagcccggaggcctggggaactccgagcactgggaccataccaaaggagataccagcat ggggcagctacacacgcagcagaggtggagcctcaggtggacagccctgctcccaaggccctcctccaaccacac 10 tggcctcagtgattccagtggacaggcgtccaggagctccaaacctgtagaggacccaggagggcttcggcagattccac gtttggagcccatttctgtgagaccctgtatttcaaatttgcagctgaaaggtgcttgtacctctgatttcaccccagag ttggagttctgctcaaggaacgtgtgtaatgtgtacatctgtgtccatgtgtgaccatgtgtctgtgaaggccagggaac 15 ggaagatgagcagcagctgctcagggctgagcagggtcctggtggccgtggcctacagccctggtgtctgcctcctccccc tgcccccaggcctggggcccccccaggggtccagtatgggcagccaggtccgtgaagctgtgttgtcctggagtgac tgccggggacccagtgtcctggtttcgggatgggagccaaagctgctccagggacctgactctgggctagggcatgaac tggtcctggcccaggcagacagcactgatgagggcacctacatctgccagaccctggatggtgcacttgggggcacagtg gagtcccagccagatcagcggtttacccacccgctactcacctcctacaggaagaagacagtcctaggagctgatatagc agaggaggagtccatccacagggccctggccatgccacaggatcccctaggggctgcccgctgtgttgtccacgggggct gagttctggagccagtaccggattaatgtgactgaggtgaacccactgggtgccagcacacgcctgctggatgtgagctt gcagaagcatcttgcgccctgacccaccccagggcctgcgggtagagtcacaggtaccaggttaccccgacgcctgcgagcca gctggacataccctgcctcctggcgtgccagcccacttcctgctcaagttccgtttgcagtaccgtccggcgcagcat 25 ccagctggtccacqgtggagccagctggactggaggaggtgatcacagatgctgtggctgggctgcccatgctgtacg agteagtgecegggaetttetagatgetggeacetggageacetggageceggaggeetggggaacteegageaetggga 30 gggaatcctttctttcctgggactggtggctggggcctggcactgggetctggcttaggctgaggctgagactgagacggggtgggaagg atggatccccaaagcctgggttcttggcctcagtgattccagtggacaggcgtccaggagctccaaacctgtagaggacc ggttggateteagetggaagttetgttttggageceatttetgtgagaceetgtattteaaatttgeagetgaaaggtget 35 tctacctctgatttcaccccagagttggagttctgctcaaggaacgtgtgtaatgtgtacatctgtgtccatgtgtgacc cttggcctttccttgcaggggttgtgcaggtgtgaataaagagaataaggaagttcttggagattatactcagaaaaaaa aa (SEQ ID NO:12256) tctgtggagcaggtagctgtgctggcgtctttgggaatcetttctttcctgggactggtggctggggccctggcactggg gctctggtaagtgactgccattggtccctcagcctctgatcctcacacatgctctgatgcccatagaccacattcatctc caccettcatgactgcctgctgaacctgtctgattctggaactacctccccatacctcatcccctatgccccacttgat tttaactgattcctctcctgaccctttactaataaaccctttggcggagactgagataacccacattgttggagagacag actotagetgatgata (long 16 no. 1223); getgtagetgatgatgatgatgatecttagatgetatggatatctgetgetgetgatcaccgagatgagcagcagctgetcag ggetgageagggtcotggtggcettaggetacagccetggtgtetgcetcetccccctgccccaggcetggggcccccca ggggtccagtatgggcagccagggaggtccgtgaagctgtgttgtcctggagtgactgccggggacccagtgtcctggtt tcgggatggggagccaaagctgctccagggacctgactctgggctagggcatgaactggtcctggcccaggcagacagca ctgatgagggcacctacatctgccagaccttggatggtgcacttgggggcacagtgaccctgcagctgggctaccctcca 50 cctggccatgcccacaggatcccctaggggctgccgctgtgttgtccacggggctgagttctggagccagtaccggatt aatgtgactgaggtgaacccactgggtgccagcacacgcctgctggatgtgagcttgcagagcatcttgcgccctgaccc accccagggcttgcgggtagagtcagtaccaggttacccccgacgcctgcgagccagcttggacataccctgcctcctggc 55 cgtgccagcccacttcctgctcaagttccgtttgcagtaccgtccggcgcagcatccagcctggtccacggtggagcca gctggactggaggaggtgatcacagatgctgtggctgggctgcccatgctgtacgagtcagtgcccgggactttctaga 70 acttgggggcacagtgaccetgcagctgggctaccetccagecegcetgttgtctectgecaagcageegactatgaga ctaggagctgatagccagaggaggagtccatccacagggcctggccatgccacaggatcccctaggggctgcccgctg tgttgtccacggggctgagttctggagccagtaccggattaatgtgactgaggtgaacccactgggtgccagcacacgcc 75 cgacgcctgcgagccagctggacataccctgcctcctggccgtgccagcccacttcctgctcaagttccgtttgcagta ccgtccggcgcagcatccagcctggtccacggtggagccagctggaggaggaggtgatcacagatgctgtggctgggc tgccccatgctgtacgagtcagtgcccgggactttctagatgctggcacctggagcacctggagcccggaggcctgggga actccgagcactgggaccataccaaaggagataccagcatggggccagctacacacgcagccagaggtggagcctcaggt ggacagecetgetectccaaggecetecetecaaccacaceteggetaettgateacagggactetgtggageaggtag ctgtgctggcgtctttgggaatcctttctttcctgggactggtggctggggccctggcactggggctctggctgaggctg agacggggtgggaaggatggatccccaaagcctgggttcttggcctcagtgattccagtggacaggcgtccaggagctcc aaacctgtagaggacccaggagggcttcggcagattccacctataattctgtcttgctggtgtggatagaaaccaggcag

gacagtagatccctatggttggatctcagctggaagttctgtttggagcccatttctgtggagaccctgtatttcaaattt gcagctgaaaggtgcttctacctctgatttcaccccagagttggagttctgctcaaggaacgtgtgtaatgtgtacatct gtgtgggtccttggctcttggcctttccttgcaggggttgtgcaggtgtgaataatgaatattcttgagattcttggagtt tatactcagaaaaaaaatctgtggagcaggtagctgtgctggcgtctttgggaatcctttcttcctgggactggtgg tggggccctggcactggggctctggtaagtgactgccattggtccctcagcctctgatcctcacacatgctctgatgcc atagaccacattcatctccacccttcatgactgctgctgaacctgtctgatctggaactacctcccatacctccatc ccctatgcccacttgattttaactgattcctctcctgaccctttaataaaaacctttgggggagactgagataaccc 10 gtttggccagaaacctccccgtggccactccagacccaggaatgttcccatgccttcaccactcccaaaacctgctgagg gccgtcagcaacatgctccagaaggccagacaaactctagaattttacccttgcacttctgaagagattgatcatgaaga tatcacaaaagataaaaaccagcacagtggaggcctgtttaccattggaattaaccaagaatgagagttgcctaaattcc gagagacctctttcataactaatgggagttgcctggcctccagaaagacctcttttatgatggccctgtgccttagtagt atttatgaagacttgaagatgtaccaggtggagttcaagaccatgaatgcaaagcttctgatggatcctaagaggcagat cttctagatcaaaacatgctggcaqttattgatgagctgatgcaggccctgaatttcaacagtgagactgtgccacaaa aateeteettgaagaaceggatttttataaaactaaaateaagetetgeataettetteatgettteagaattegggea 20 gtgactattgatagagtgatgagctatctgaatgcttcctaa (SEQ ID NO:12259) actttagtgatggatcggaggaaattaatacatgtttacaaaaagccctcccccagttgttacatatgcctcagagata 25 gcaatctgatttgtccacttaattgtatatcttggatacagaacttgtttcactggaaggctaaaaaggcaaagtctgggg aggeetagaggaeaeaggggatgggaggaggegetetgagetggatgtaaggteteeaeeeeeggeeagageaeaaggte ctgggaageteegetgetctggcccgggtttcccatttccccettcccgcgttgagaeggaggaaagttagcccggaa atctgcgcccgcctaaaacccggcctggtcccagccaccgccccaggaacttcccccaccgcaggggcggaggtcgagag cagggatggagaagtggacctgcgcgggtggactccggggcgcggggtggactccgggggcgcggggggactccgaggagcg 35 tgtgtgcacgcgtgtgttcccactcggggaatgtggggagaggtgcatggagccaaqatgggtggtaaatagtatgtttc tgaaattaaaggactaatgtggaggaaggcgcccagatgtactaaacctttgccttcatctcatcctctctgacttgg 40 gaagaaccaggattttgtttttaagcccttgggcatacagttgttccatcccgacatgaactcagcctcccgtctgaccg ccccttggccttccttcttcctcgatctgtggaacccagggaatctgcctagtgctgtctccaagcaccttggccatgat ccccagaaggttttgagagttgttttcaatgttgcaacaagtcagtttctagtttaagtttccatcagaaaggagtagag tatataagttccagtaccagcaacagcagcagaagaaacaacatctgtttcagggccattggactctccgtcctgcccag gaattetcagacagcagcattagaaggggccttagagatcaaccatttctcttattttacacaccacctaaaactccctac agccgtgcttcatcagcttcgagcagatgagccacccagaaggcagctccagttattaggtcctagggcctgggtgtagt caggccctttggaagctccaagtcagagatcaaacactcctccccactacccacgcctagggtgactaatgcctgtggg aaaacaactgaactaaaaagtcccacaggaacctcaaacccagcacatccaaaatggaacttctcaccatctcccaa acteagtcctcttatacagtaatccctgtaaagctagaacaatctccattccccattctcagggccttcctctcccgctc acctgaggagctaccaagccttggccacaagccctctgagagtccctcctgccacccctgtgttctccatactgaataa ggacttggccacaccttgtcaactcttccctctgctctactcctgacccctggatccccccatcatgcaaattctgccacatctccgccacaccctggatccccccatcatgcaaaattctgccacatctcccgcctaaaaacccaggaagactccccactactctcagcacagaaagtacactccttagtatggcatcccctgccc 55 aacattcaggttggggcccttgctgctcccgggagcctttgctgactcctggaccccgttgctccggctgagcgtgggc tetttetetaggtettteeteecaggaetetgtgtatteateetategttaaactggattetetacaagagtaataattg cagagtcagccagctctcatcccttttcaggtttcagaaaagacctgtgaacaaaacgccttgagtctgatttagtgtgg 60 caatgccccaagggtcctgttctccctgggtgtcctgcacctggtgcaacgtcggcctggcatctagtgagccatctaaa ggaacgatgatgagtgaatgatttgcctacccttccagtactaggctggaggtcgtggttagggcccatccctacgcag gacatgcaaagtgggaggcactcctctctctacgtcggcaggggggcgctgcacagctgcgggggcggggtagcttagacac aacatttegettteattttgggeegagetggaggeggggggeegteeeggaaeggetgegggeegggeaeeeegggagtt 65 ggagacagaaagcaagagaccagagtcccgggaaagtcctgccgcgcctcgggacaattataaaaatgtggccccctggg tcagceteccagecacegeceteacetgeegegecacaggtetgeatecageggetegeeetgtgteeetgeagtgeeg gctcagcatgtgtccagcgcgca (SEQ ID NO:12261) atgtggccccctgggtcagcctcccagccaccgcctcacctgccgcggccacaggtctgcatccagcggctcgcctgt gtecetgcagtgccggctcagcatgtgtccagcgcgcagcctcctccttgtggctaccetggtcctcctggaccacctca gtetctgeagtgetgydetageatgtgtecagegegeagetetetettgtgydetadeetggtetetetetgageagetgatgagg gtetggecagaaaceteccegtgggecactecagacecaggaatgtteccatgcettetecacactecetaaaacetgetgagg gecgteagcaacatgetecagaaggecagacaaactetagaattttaccettgeacttetgaaggagttgateatgatgaaga tatcacaaaagataaaaccagcacagtggaggectgtttaccattggaatttaccaagaatgagagttgcetaaattcca gagagacetetttcataactaatgggagttgcctggcctccagaaagacetettttatgatggccctgtgcettagtagt 75 atttatgaagacttgaagatgtaccaggtggagttcaagaccatgaatgcaaagcttctgatggatcctaagaggcagat atttatgaagacctgaagacgtatcaggtggagtcaagaccagacgcctgaatttcaacagtgagactgtgccacaaa aatcctcccttgaagaaccggatttttataaaactaaaatcaagctctgcatacttcttcatgctttcagaattcgggca gtgactattgatagagtgatgagctatctgaatgcttcctaaaagcttcttttgcataactggcgctggatttttactga gactttacgttacagtttttttttttaaatttcaaggtgcttttacgaacacatgaataaaatatttgtgtcattttga accttacttgtcttattttatgcatgtatttattatggggggcacaaggactcatctgtggtggtgcagcactgtaa ataaattagtgaaactacttcaogtcaatttctgttcagtacactttagtggtgatggatcggaggaaattaatacatgttta caaaaagcccctcccccagttgttacatatgcctcagagataccagttgtgaaaagtgcaggtgcacttacacacatacg

cacacacaccccacaaatggtatcatacgaaaaaacatacctgcaatctgatttgtccacttaattgtatatcttggata cagaacttgtttcactggaaggctaaaaggcaaagtctggggaggcctagaggacacaggggatgggaggaggcgctctg agetggatgtaaggteteeacceacggccagagcacaaggteggataaccagtgggcctgeeggettggetgcctgggcc ctcccctgcgagacaaacggctggagggaggaagtgtgcggctgggaagctccgctgctctggcccgggtttcccattt cgccccaggaacttcccccaccgcaggggcggaggtcgagagcagggatggagaagtggacctgcgcgggtggactccgg ggcgcgggtggactccggggcgcgcgggggactccgaggagcgggtggactgtgggcgcggggtaccgtctcgcagcgacc tctgtcggcggctctggggatggcccgcatctgtctgcgtgtacctggtatacgtgcaggtacatgttcctgttcacgtg cagactgggcgggggatgggggggtccacaccggtgtacaccttttgcatacctcttagcaacttgaaattccaccacgag 10 agatatetttatteegetatteetgtgeatetgeaeggageeeetagggeeatagatttgtgtgeaaatgaaatgaggat gtagtetgggtgcccaagggggggtgccttgagtgtggttgtctgtatgcctccctgagggtatttcactttctgctccc atccgccctatgagcgagtacctatgagcacaggatgtgcacatatttgagtcttattagtggtacacgcagttttatc agaggtgcatggagccaagatgggtggtaaatagtatgtttctgaaattaaaggactaatgtggaggaaggcgccccaga 15 tgtactaaaccetttgccitcateteatectetetgaettgggaagaaccaggattttgtttttaageeettgggcatae gggaatctgcctagtgctgtctccaagcaccttggccatgatgtaaacccagagaaattagcatctccatctcctt attccccacccaaaagtcatttcctcttagttcattacctgggattttgatgtctatgttccctcctcgttattgataca cacacagagagagacaaacaaaaaaggaacttcttgaaattcccccagaaggttttgagagttgtttcaatgttgcaac 20 aagtcagtttctagtttaagtttccatcagaaaggagtagagtatataagttccagtaccagcagcagcagcagaagaaa caacatctgtttcagggccattggactctccgtcctgcccagagcaaggTaagcacttcccaagccctacctccctccc ctccctgtgggcctgcaggaattctcagacagcagcattagaaggggccttagagatcaaccatttctcttattttacac acacctaaaactccctacagccgtgcttcatcagcttcgagcagatgagccacccagaaggcagctccagttattaggtc ctagggcctgggtgtagtcaggccctttggaagctccaagtcagagatcaaacacatcctccccactacccacgcctagg gtgactaatgcctgtgggaaaaacaactgaactaaaaagtcccacaggaacctcaaacccagcacatccaaaatggaact 25 tctcaccatctcctccaaactcagtcctcttatacagtaatccctgtaaagctagaacaatctccattccccattctcag ggccttcctctcccgctcacctgaggagctaccaagccttggcccacaagccctctgagagtccctcctgcccaccctgt ğttetecataetgaataaggaettggeeacaeettgteaactetteeetetgetetaeteetgaeeeetggateeeeea tcatgcaaattctgccacatctcccgcctaaaacccaggaagactccccactactctcagcacagaaagtacactcctta 30 gtatggcatcccctgccctcatggcatggcccatccagccctccagcctcacaccctgcaaggacacctagaccccacc tccctcaacccttcatgactgcgcttctgatccctgtttcccctggctagaccctgcgtgccctcccgctggaagcggtc ctccggctgagcgtgggctctttctctaggtctttcctcccaggactctgtgtattcatcctatcgttaaactggattct ctacaagagtaataattgcagagtcagccagctctcatcccttttcaggtttcagaaaagacctgtgaacaaaacgcctt 35 gagtotgalttagtgtggcaatgeeccaagggtootgttoteectgggtgtootgcacetggtgcacetggtgcaacgtoggcotggca tctagtgagccatctaaaggaacgatgatgagtgaatgatttgcctaccccttccagtactaggctggaggtcgtggtta 40 45 tqctqqqcaaaaaaqqqqatacaqtqqaactqacctqtacaqcttcccaqaaqaaqaqcatacaattccactqqaaaaac aagaagaagcctttgggaccaaggaaacttccccctgatcatcaagaatcttaagatagaagactcagatacttacatct 50 gggcagagcctgaccctgaccttggagagcccccctggtagtagcccctcagtgcaatgtaggagtccaaggggtaaaaa catacagggggggaagaccctctccgtgtctcagctggagctccaggatagtggcacctggacatgcactgtcttgcaga ggggaacaggtggagttoteetteecactegeetttacagttgaaaagetgacgggcagtggegagetgtgggaggeagg ggagagggcttcctcctccaagtcttggatcacctttgacctgaagaacaaggaagtgtctgtaaaacgggttacccagg 55 accctaagetecagatgggcaagaagetecegetecaceteaccetgeeceaggeettgeeteagtatgetggetetgga aacctcaccctggcccttgaagcgaaaacaggaaagttgcatcaggaagtgaacctggtggtgatgagagccactcagct ccagaaaaatttgacctgtgaggtgtggggacccacctcccctaagctgatgctgagcttgaaactggagaacaaggagg ggacaggtcctgctggaatccaacatcaaggttctgcccacatggtccacccggtgcagccaatggccctgattgtgct 60 ggggggcgtcgccggcctcctgcttttcattgggctaggcatettcttctgtgtcaggtgccggcaccgaaggcgccaag ccceggettcactggttgagtgttgctctctagtttccagaggettaatcacacegtcctccaegccatttccttttcct 65 tcaaqcctaqccttctctctattatttctctctgaccctctccccactgctcatttggatcc (SEQ ID NO:12263) ctgccaactctgacacccacctgcttcaggggcagagcctgaccctgaccttggagagagccccctggtagtagcccctca gtgcaatgtaggagtccaaggggtaaaaacatacagggggggaagaccctctccgtgtctcagctggagctccaggatag tggcacctggacatgcactgttttgcagaaccagaagaaggtggagttcaaaatagacatcgtggtgctagctttcc (SEQ ID NO:12264) tgcaqaqaacaqagaaaggacatctqcqaqqaaagttccctqatqqctgtcaacaaagtgccacgtctctatggctgtgt 70 75 gctggcaccgggaacgcccgagcgccggcagagagcgcgggagagcgcgacacgtgcggcccagagcaccggggccacccg gtccccgcaggcccgggaccgcgccgctggcaggcgacacgtggaagaatacggagttctataccagagttgattgttg atggcacatacttttagaggatgctcattggcatttatgtttataatcacgtggctgttgattaaagcaaaaatagatgc gtgcaagagaggcgatgtgactgtgaagccttcccatgtaattttacttggatccactgtcaatattacatgctctttga agcccagacaaggctgctttcactattccagacgtaacaagttaatcctgtacaagtttgacagaagaatcaattttcac 80 tagtgatgaaattcaaatatgtggagcagagatcttcgttggtgttgctccagaacagcctcaaaatttatcctgcatacagagggagaacagggggactgtggctctacctgggaaagagggacgagacacccacttatacactgagtatactctacag

cacccctgaatcacctgaatccaatttcaccagccaaggttactgctgctactagatcaatttcaaaaggcttcctttcacttccat ccacattcacattcttggacatagtgaggcctcttcctccgtgggacattagaatcaaatttcaaaaggcttccgtgtgagcagatgtaccctttattggagagatgagggactggtactgcttaatcgactcagatatcggcccagtaacagcaggctctg gaatatggttaatgttacaaaggccaaaggaagacatgatttgctggatctgaaaccatttacagaatatgaatttcaga tttcctctaagctacatcttataagggaagttgagtgaattggagtgaatcattggagagcacaaacaccagaagaagag cctactgggatgttagatgtctggtacatgaaacggcacattgactacagtagacaacagatttctctttttctggaagaa tctgagtgtctcagaggcaagaggaaaaattctccactatcaggtgaccttgcaggagctgacaggagggaaagccatga cacagaacatcacaggacacacctcctggaccacagtcattcctagaaccggaaattgggctgtggctgtgtctgcagca 10 aattcaaaaggcagttctctgcccactcgtattaacataatgaacctgtgtgaggcagggttgctggctcctcgccaggt ctctgcaaactcagaggcatggacaacattctggtgacttggcagcctcccaggaaagatccctctgctgttcaggagt acgtggtggaatggagagagctccatccagggggtgacacacaggtccctctaaactggctacggagtcgaccctacaat gtgtctgctctgatttcagagaacataaaatcctacatctgttatgaaatccgtgtgtatgcactctcaggggatcaagg aggatgcagctccatcctgggtaactctaagcacaaagcaccactgagtggcccccacattaatgccatcacagaggaaa 15 aggggagcattttaatttcatggaacagcattccagtccaggagcaaatgggctgcctcctccattataggatatactgg aaggaacgggactccaactcccagcctcagctctgtgaaattccctacagagtctcccaaaattcacatccaataaacag cctgcagccccgagtgacatatgtcctgtggatgacagctctgacagctgctggtgaaagttcccacggaaatgagaggg aattttgtctgcaaggtaaagccaattggatggcgtttgtggcaccaagcatttgcattgctatcatcatggtgggcatt ttctcaacgcattacttccagcaaaaggtgtttgttctcctagcagccctcagacctcagtggtgtagcagagaaattcc 20 agatecageaaatageaettgegetaagaaatateeeattgeagaggagaagaeaeagetgeeettggaeaggeteetga tagactggcccacgcctgaagatcctgaaccgctggtcatcagtgaagtccttcatcaagtgaccccagttttcagacat ccccctgctccaactggccacaaagggaaaaaggaatccaaggtcatcaggcctctgagaaagacatgatgcacagtgc ctcaagcccaccacctccaagagctctccaagctgagagcagacaactggtggatctgtacaaggtgctggagagcaggg ctccctttctgttttcccctcaagttctcttcacccactcaccttctcctgtggtgataagctgactctggatcagttaa agatgaggtgtgactccctcatgctctaggtggtgaggcttcaagccttaaagtcagtgtgccctcaaccagcacagcct gccccaattcccccagccctgctccagcagctgtcatctctgggtgcaccatcggtctggctgcagctagaggacagg caagccagctctgggggagtcttaggaactgggagttggtcttcactcagatgcctcatcttgctttcccagggcctta aaattacatccttcactgtgtggacctagagactccaacttgaattcctagtaactttcttggtatgcctggccagaaagg 30 gaaatgaggaggaggagtagaaaccacagctcttagtagtaatggcatacagtctagaggaccattcatgcaatgactatt tctaaagcacctgctacacagcaggctgtacacagcagatcagtactgttcaacagaacttcctgagatgatggaaatgt tctaccictgcactcactgtccagiacattagacactaggcacattggctgttaatcacttggaatgtgittagcttgac tgaggaattaaattttgattgtaaatttaaatcgccacacatggctagtggctactgtattggatgctcagctctagat ggctcctagattattgagagcctccaaaacaaatcaacctagttctatagatgaagacataaaagacactggtaaacac 35 aatgtaaaagggoccccaaggtggtcatgactggtctcatttgcagaagtctaagaatgtacctttttcttggccgggcgt ggtagctcatgcctgtaatcccagcactttgggaggctga (SEQ ID NO:12265) caagoccagagocotgocatttctgtgggctcaggtccctactgctcagococttcctccctcggcaaggccacaatgaa 40 tgctgggcaaaaaaggggatacagtggaactgacctgtacagcttcccagaagaagagcatacaattccactggaaaaac aagaagaagcctttgggaccaaggaaacttccccctgatcatcaagaatcttaagatagaagactcagatacttacatct ggagagggcttcctcctccaagtcttggatcacctttgacctgaagaacaaggaagtgtctgtaaaacgggttacccagg accctaagctccagatgggcaagaagctcccgctccaccttcaccctgccccaggccttgcctcagtatgctggctctgga aacctcaccctggcccttgaagcgaaaacaggaaagttgcatcaggaagtgaacctggtggtgatgaagagccactcagct ccagaaaaatttgacctgtgaggtgtggggacccacctcccctaagctgatgctgagcttgaaactggagaacaaggagg caaaggtetegaagegggagaaggeggtgtgggtgetgaaccetgageggggatgtgggcagtgtetgagtgaeteg ggacaggteetgetggaatccaacatcaaggttetgeecacatggteeaceeeggtgcageeaatggeeetgattgtget gggggggggtcgccggcctcctgcttttcattgggctaggcatcttcttctgtgtcaggtgccggcaccgaaggcgccaag 55 cagagoggatgtotcagatcaagagactoctcagtgagaagaagacotgccagtgccctcacoggtttcagaagacatgt ccagatgaatgtagcagatcccacgctctggcctcctgttcgtcctccctacaatttgccattgtttctcctgggttagg cccggcttcactggttgagtgttgctctctagtttccagaggcttaatcacaccgtcctccacgccatttcctttcct tcaagcctagcccttctctctattatttctctctgaccctctccccactgctcattttggatccctgccaactctgacaccc acctgettcaggggcagagcctgaccetgaccttggagagcccccetggtagtagcccctcagtgcaatgtaggagtcca aggggtaaaaacatacagggggggaagaccctctccgtgtctcagctggagctccaggatagtggcacctggacatgcac tgttttgcagaaccagaagaaggtggagttcaaaatagacatcgtggtgctagctttcctgcagagaacagagaaaggacatctgcgaggaaagttccctgatggctgtcaacaaagtgccacgtctatggctgtgtacgctgagcacacgattttat ccgcattttatatgaggggaatctgacggtggagagagattatcttgctcaaggcgacacagcagagcccacaggtggc agaagcgagtcctctccgccctgcggccaccgcccagccccgaccccggcccggtcctcactcgccgccagctc 70 tgtgaagcetteccatgtaattttaettggatecaetgteaatattaeatgetetttgaageecagaeaaggetgettte actattccagacgtaacaagttaatcctgtacaagtttgacagaagaatcaattttcaccatggccactccctcaattct caagtcacaggtcttccccttggtacaaccttgtttgtctgcaaactggcctgtatcaatagtgatgaaattcaaatatg 75 tggagcagagatettegttggtgttgeteeagaacageeteaaaatttateetgeatacagaagggagaacaggggaetg tggcctgcacctgggaaagaggacgagacacccacttatacactgagtatactctacagctaagtggaccaaaaaattta acctggcagaagcaatgtaaagacatttattgtgactatttgggactttggaatcaacctcacccctgaatcacctgaatc tagtgaggcctcttcctccgtgggacattagaatcaaatttcaaaaggcttccgtgagcagatgtaccctttattggaga gatgagggactggtactgcttaatcgactcagatatcggcccagtaacagcaggctctggaatatggttaatgttacaaa ggccaaaggaagacatgatttgctggatctgaaaccatttacagaatatgaatttccagatttcctctaagctacatcttt ataagggaagttggagtgattggagtgaatcattgagagcacaaacaccagaagaagagcctactgggatgttagatgtc

tggtacatgaaacggcacattgactacagtagacaacagatttetettttetggaagaatetgagtgteteagaggeaag aggaaaaattctccactatcaggtgaccttgcaggagctgacaggagggaaagccatgacacagaacatcacaggacaca cctcctggaccacagtcattcctagaaccggaaattgggctgtggctgtgtctgcagcaaattcaaaaggcagttctctg cccactogtattaacataatgaacctgtgtgaggcagggttgctggctcctcgccaggtctctgcaaactcagagggcat ggacaacattctggtgacttggcagcctcccaggaaagatccctctgctgttcaggagtacgtggtggaatggagagagc tccatccagggggtgacacacaggtccctctaaactggctacggagtcgaccctacaatgtgtctgctctgatttcagag aacataaaatcctacatctgttatgaaatccgtgtgtatgcactctcaggggatcaaggaggatgcagctccatcctgggtaactctaagcacacaaagcaccactgagtggccccaattaatgccatcacagagggaaaaaggggagcattttaatttcat 10 cagcctcagctctgtgaaattccctacagagtctcccaaaattcacatccaataaacagcctgcagccccgagtgacata tgtcctgtggatgacagctctgacagctgctggtgaaagttcccacggaaatgagagggaattttgtctgcaaggtaaag ccaattggatggcgtttgtggcaccaagcatttgcattgctatcatcatggtgggcattttctcaaccgcattacttccag caaaaggtgtttgttctcctagcagccctcagacctcagtgtgtagcagaaaattccagatccagcaaatagcacttg 15 atcotgaaccgctggtcatcagtgaagtccttcatcaagtgaccccagttttcagacatccccctgctccaactggcca caaagggaaaaaggaatccaaggtcatcaggcctctgagaaagacatgatgcacagtgcctcaagcccaccacctccaag agetetecaagetgagageagacaactggtggatetgtacaaggtgetggagageaggggeteegacecaaagecagaaa acccagcetgtecetggaeggtgeteceageaggtgaeetteceaeceatgatggetaettaeeetecaacatagatgae ctcccttcacatgaggcacctctctgctgactctctggaagaactggagcctcagcacatctccctttctgttttccctt 20 aagttetetteaeceaeteaeetteteetgtggtgataagetgaetetggateagttaaagatgaggtgtgaeteeetea tgctctgagtggtgaggcttcaagccttaaagtcagtgtgccctcaaccagcacagcctgcccaattcccccagccct getecageagetgteatetetgggtgeeaceateggtetggetgeagetagaggaeaggeaageeagetetgggggagte ttaggaactgggagttggtcttcactcagatgcctcatcttgcctttcccagggccttaaaattacatccttcactgtgt ggacctagagactccaacttgaattcctagtaactttcttggtatgctggccagaaagggaaatgaggaggaggtagaa accacagetettagtagtaatggcatacagtetagaggaccattcatgcaatgactatttetaaagcacetgetacacag cagtacattagacactaggcacattggctgttaatcacttggaatgtgtttagcttgactgaggaattaaattttgattg taaatttaaatcgccacacatggctagtggctactgtattggagtgcacagctctagatggctcctagattattgagagc ctccaaaacaaatcaacctagttctatagatgaagacataaaagacactggtaaacaccaatgtaaaagggcccccaagg 30 tggtcatgactggtctcatttgcagaagtctaagaatgtacctttttctggccgggcgtggtagctcatgcctgtaatcc cagcactttgggaggctga (SEQ ID NO:12266) 35 ccgcagcttccagactggccggtctgcgcgcccacccctgcctcccggaccggccaccgccggaggccgcgggaggggc ccggccgcgcagatcccgcttatcgggccccatctcccgttacataaggccaccccctatctccggggccatcgccgc cgcaaccgccgcgccagcgccttctcccacgcgcgggggcgccctgcccaccgctcccggcagggcttttggtggccat gggggataaggggggttgactcacccgggcggggctccgggagttgcacagaccaaggtagttccccgctccttccccca 40 tcacggagaccctgtgggagatgccgtgggccctctactacagattaggaaacaggcccgtagaggggtcgcgggccaa gtagcggcactccaggcactgggggccctcgagggaaggggcagacttctgggagtcagagccagcagctgggcagactgggaa gcttcgagtgtggacagagagggtgggaatgacgttccctgtgggaagagagggtgggcaagcctggggatgcctctgagc gggaalccagcatgccttgtgaggagggtcacaagcacacccttgtgaggaggttgagccccatcgaggacaggacggag ggagcctgagcaggcagagagggggcctgggggggcgctggttcggggaggaagtgggtaggggagaaatcttgacatca acacccaacaggcaaatgccgtggcctctgctgtgggggtttctggaggacttctaggaaaacgagggaagagcaggaaa aggegacatggetgtagggecaageccaggagecgcetecacageaeteattetgcagaagggaaattttgaggeeeeca gacggcaggggttgatcctgcagagactggtgagcaaaggggatcaccccaagccccagtggcactaggaacacttacaa gggccagacacgtgcacactacttccagccactctggaagctgaggtggggggatcgcttgagtctgggagttggaggcc 50 cagaaagacctctgaatctttctggatctctctagtggagacctggaaatctgaactttgacaatccctctcacagtgggg ccaaggaggaattaggcaagccaaaagaagtgaactttactcttctattgcctgtttgacattttgtaccagcaagtgt tacttaaqtaatttaaqaqactggttcatcgaaaaaataaaactccccaaattcccatagctggtagactgtggtcacag ccacagtgcactaagactatctgctcagcacttctggtgacccaaaagggtctgaggacaggagctcagagttgggtcag 55 ctgtccaggtactcagggttgtcacaggcaaaactgctggaactcagggcagcattgcaaatgccacgccgctctcaggg cccttgcctgccgctggaattaaaccacccagatcttggaaactctgccctggacccttctcaataagtccatgagaa atcaaactctttcctttatgcgacactggattttccacaaagtaaaatcaagatgagtaaagatgtggtttctagatagt gcctgaaaaagcagagaccatggtgtcaggcgtcaccacttgggcctataaaagctgccacaagacgccacaaggccacaag ccacccagectatgcatccgctcctcaatcctctcctgttggcactgggcctcatggcgcttttgttgaccacggtcatt 60 caagatgaggtcatgagcaggctgggcctggtcctaagatgcctgtaggtcaggaaaaatctccatggaccaaggcccgg cagggactacctgctctcctggcctggccttgtctgccactgccagctcctactcagccattcctgaacagaggacagca 65 gagaagggccagcaccctcccagaaccatgtggcatttgccaactggattttgaccataacaatgcagccattctcccca gcaccatcataggcccgcccttacaggaggattcgttagtagagtccgctccttgccccactagtaacagctcacatgtc gatgaacccattctgctaaggttcagtgaggttaagtgacagaggctggattcaagccaggcctggccaacaccagagtg tccatgetectaactgcagtgttccctcaccatcagaaggcagggcatttaatacaccagatccccaccgcctcccatct gatttgtcttggtcaacagtggcccaggccactcctacttcactcgtccccaccctggcccttcccgcaggcccctgtcc tectgeeetgactatggcaageettgcatgcagettgteeettactagtggtgtcaattttttteteteagetecaagae cctaaacagtgggacctcacccctatgcctgctgttcaaagcagaaaacgaagctcaggaatgctgaggggctgccaggc ctgcctctgtgccacaccagggatgcttgtggggcctgtgctgggcagacctggcctgggctgccagggcaggcccaca accoctgccagcactctgctcactgtcactttgctcccacaggctccgctctgcaatggcagcatggtatggagcatcaa 75 caccaccagactcacctgcgccaggcatctcagccccatcttcctgcagactcacaaaaaggcagctgcccaagcagggc ctgacccetcggtgtcccctccccacagtactgtgcagccctggaatccctgatcaacgtgtcaggctgcagtgccatcg agaagacccagaggatgctgagcggattctgcccgcacaaggtctcagctggggtaaggcatccccaccctctcacacc caccetgeacccctcctgccaaccetgggetegetgaagggaagetggetgaatatecatggtgtgtgtcacccaggg gtggggccattgtggcagcagcagcagcgtggccttcgggatttacaggatctgggctcaagggctcctaactcctacctggg cctcaatttccacatctgtacagtagaggtactaacagtaccacctcatggggacttccgtgaggactgaatgagacag

 ${\tt tccctggaaagcccctggtttgtgcgagtcgtcccggcctctggcgttctactcacgtgctgacctctttgtcctgcagcagttttccagcttgcatgtccgagacaccaaaatcgaggtggcccagtttgtaaaggacctgctcttacatttaaagaaaa$ ctttttcgcgagggacggttcaactgaaacttcgaaagcatcattatttgcagagacatgacatgactattgaagttgca agaccteageetgtgetgecegtetteageetageegaceteageetteeeettgeceagggeteageetggtgggeete ctctgtccagggccttgagctcggtggacccagggatgacatgtccctacacccctcccctagccctagagcacactgtag agctcaggcacacttcttcttggtcttatttattattgtgtgtlatttaaatgagtgtgtttgtcaccgttggggattgg ggaagactgtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagtggaccccaggag 10 tccctggtaataagtactgtgtacagaattctgctacctcactggggtcctggggcctcggagcctcatccgaggcaggg tcgtatttaaatattaaatatgttagcaaagagttaatatatagaagggtaccttgaacactgggggaggggacattgaa caagttgtttcattgactatcaaaotgaagocagaaataaagttggtgacagataggcctgattgtatttgtctttcatt ttggcctttggggacactggtctgtggtctgaagactctgaggagctcttcgggaggctggtgggttggaggaggggact 15 aggaagcccaccttctgtctgctgcaccagcaaggacggagaggcttgggccagactgtcagggttcaaggagggcatc aggagcagacggagacccaggaagtctcacaatcacatctcctgaggactggccagctgtgtctggcaccaccacacat ccatgtctccctcacaacccaggaggccgatgagaactgtgaggctcagaaagcgtgggcggtttgcctaaggtcacgta gctacttcctcactggggtcctggggcctcagagcctcatctgaggtaaaggagcaaagttgggattggggtccaaaattcactttaactccaaagcccacactttaaccaccctgcctatttctgtccaaatgtcacctgtcctgaat (SEQ ID NO:12267) aagccacccagcctatgcatccgctcctcaatcctctcctgttggcactgggcctcatggegcttttgttgaccacggtc gctggtcaacatcacccagaaccagaaggctccgctctgcaatggcatggtatggagcatcaacctgacagctggca tgtactgtgcagccctggaatccctgatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcgga ttctgcccgcacaaggtctcagctgggcagttttccagcttgcatgtccgagacaccaaaatcgaggtggcccagtttgt gttagggaggggtaaaattcettagcttagacctcagcctgtgctgcccgtcttcagcctagccgacctcagccttccccttgcccagggctcagcctggtggacccagggctcagcctggtgacccagggctcactgtccatacac 30 ccctcccctgccctagagcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacccact gagtgtgtttgtcaccgttggggattggggaagactgtggctgctggcacttggagccaagggttcagagactcagggcc ccagcactaaagcagtggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggtcctg cttgaacactgggggaggggacattgaacaagttgtttcattgactatcaaactgaagccagaaataaagttggtgacag at (SEQ ID NO:12268) ggateceegetgacaatetagaaacaagcaacagaceetetgatgtagecatetgtgeeegegecteteegeacegeeege 40 ggccggtgctggagcggcacgtgcgcgcctcgggcccctcggccgcccctcgccggtgcgcaccggcgctcgggg ccgcagcttccagactggccggtctgcgcccacccctgcctcccggaccggccaccgccggaggccgcggaggagggc ccggccgcgcagatcccgcttatcgggccccatctcccgttacataaggccaccccctatctccgcgggccatcgccgc gggaatccagcatgccttgtgaggagggtcacaagcacaccttgtgaggaggttgagccccatcgaggacaggacggag 50 ggagcctgagcaggcagagagaggggcctggggaggcgctggttcggggaggaagtgggtagggagaaatcttgacatca acacccaacaggcaaatgccgtggcctctgctgtgggggtttctggaggacttctaggaaaacgagggaagagcaggaaa aggcgacatggctgtagggccaagcccaggagccgccctccacagcactcattctgcagaagggaaatttgaggcccca gacggcaggggttgatcctgcagagactggtgagcaaaggggatcaccccaagccccagtggcactaggaacacttacaa tetetgaeetggaetaaggetgeeageetggeeeagttaagagttteeeagaaggatggeeeataeaetttaaattaaag 55 gggccagacacgtgcacactacttccagccactctggaagctgaggtgggggatcgcttgagtctgggagttggagtc cagaaagacctctgaatctttctggatctctcagtggagacctggaaatctgaactttgacaatccctctcacagtgggg tacttaagtaatttaagagactggttcatcgaaaaaataaaactccccaaattcccatagctggtagactgtggtcacag ccacagtgcactaagactatctgctcagcacttctggtgacccaaaagggtctgaggacaggagctcagagttgggtcag ctgtccaggtactcagggttgtcacaggcaaaactgctggaactcagggcagcattgcaaatgccacgccgctctcaggg cccettgcctgccgctggaattaaacccaccagatcttggaaactctgccctggacccttctcaataagtccatgagaa atcaaactctttcctttatgcgacactggattttccacaaagtaaaatcaagatgagtaaagatgtggtttctagatagt gcctgaaaaagcagagaccatggtgtcaggcgtcaccacttgggcctataaaagctgccacaagacgccacaagccacaagccacagcctatgcatccgctcctcaatcctcctcctgttggcactgggcctcatggcgcttttgttgaccacggtcatt 70 gatgaacccattctgctaaggttcagtgaggttaagtgacagaggctggattcaagccaggcctggccaacaccagagtg 75 tecatgetectaactgeagtgtteceteaceateagaaggeagggeatttaatacaccagatecceacegeeteceatet gatttgtcttggtcaacagtggcccaggccactcctacttcactcgtccccaccctggcccttcccgcaggccctgtcc cctaaacagtgggacctcacccctatgcctgctgttcaaagcagaaaacgaagctcaggaatgctgaggggctgccaggc ctgcctctgtgccacaccagggatgcttgtggggcctgtgctggggcagacctgggctgggctgccagggcaggccaca accoctgocageactotgotcactgtcactttgctcocacaggotcogctctgcaatggcagcatggtatggagcatcaa cctgacagctggcatggtaaggacctttgggtgcagggaggatgggcagaggctccaggcctttgggcttatcttctg agcetecettecatggetggggttecaagcaagetteaagtgetetectecetecegccataatetggeceettecege

```
caccaccagactcacctgcgccaggcatctcagccccatcttcctgcagactcacaaaaggcagctgcccaagcagggc
      ctgacccctcggtgtcccctccccacagtactgtgcagccctggaatccctgatcaacgtgtcaggctgcagtgccatcg
      agaagacccagaggatgctgagcggattctgcccgcacaaggtctcagctggggtaaggcatccccaccctctcacacc
      gtggggcattgtggcagcagggacgtggccttcgggatttacaggatctgggctcaagggctcctaactcctacctggg
      cctcaatttccacatctgtacagtagaggtactaacagtacccacctcatggggacttccgtgaggactgaatgagacag
      tccctggaaagccctggtttgtgcgagtcgtcccggcctctggcgttctactcacgtgctgacctctttgtcctgcagc
      agttttccagcttgcatgtccgagacaccaaaatcgaggtggcccagtttgtaaaggacctgctcttacatttaaagaaa
      ctttttcgcgagggacggttcaactgaaacttcgaaagcatcattatttgcagagacaggacctgactattgaagttgca
10
      gattcatttttcttctgatgtcaaaaatgtcttgggtaggcgggaaggaggttagggggtaaaattccttagctt
      agacctcagcctgtgctgcccgtcttcagcctagccgacctcagccttccccttgcccagggctcagcctggtgggcctc
      ctctgtccagggccctgagctcggtggacccagggatgacatgtccctacaccctcccctagccctagagcacactgtag
      agctcaggcacacttcttcttggtcttatttattattgtgtgttatttaaaatgagtgtgtttgtcaccgttggggattgg
15
      ggaagactgtggctgctggcacttggagccaagggttcagagactcagggccccagcactaaagcagtggaccccaggag
      tccctggtaataagtactgtgtacagaattetgctacetcactggggteetggggeeteggageetcateeggaggeaggg
      tCaggagaggggcagaacagcogctcctgtctgccagccagcagccagctctcagccaacgagtaatttattgtttttcc
      caagttgtttcattgactatcaaactgaagccagaaataaagttggtgacagataggcctgattgtatttgtctttcatt
20
      ttggcctttggggacactggtctgtggtctgaagactctgaggagctcttcggggaggctggtgggttggaggaggggact
      aggaagccccaccttctgtctgctgcaccagcaaggacggagaggcttgggccagactgtcagggttcaagggggcatc
      aggagcagacggagacccaggaagtctcacaatcacatctcctgaggactggccagctgtgtctggcaccaccacat
      ccatgtctccctcacaacccaggaggccgatgagaactgtgaggctcagaaagcgtgggcggtttgcctaaggtcacgta
      gctacttcctcactggggtcctggggcctcagagcctcatctgaggtaaaggagcaaagttgggattggggtccaaaattcacttaactccaaagccacacacttaaccacctgcctatttctgtccaaatgtcacctgtcctgaataagccacca
25
      30
      ctgactattgaagttgcagattcatttttctttctgatgtcaaaaatgtcttggggtaggcgggaaggagggttagggagg
      ggtaaaattccttagcttagacctcagcctgtgctgcccgtcttcagcctagccgacctcagccttccccttgcccaggg
35
      ctcagoctggtgggcctcctctgtccagggccctgagctcggtggacccaggggatgacatgtccctacacccctcccctg
      gtcaccgttggggattggggaagactgtggctgctggcacttggagccaagggttcagagactcagggccccagcactaa
      agcagtggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggtcctgggacctcgga
      gtaatttattgtttttcctcgtatttaaatattaaatatgttagcaaagagttaatatatagaagggtaccttgaacact
      gggggaggggacattgaacaagttgtttcattgactatcaaactgaagccagaaataaagttggtgacagat (SBQ ID NO:12269)
      tteggeateegeteeteaateeteetettyttggeaetgggeeteatggegettttgttgaeeaeggteattgeteteaet
      cacccagaaccagaaggctccgctctgcaatggcagcatggtatggagcatcaacctgacagctggcatgtactgtgcag
     50
      caccgttggggattggggaagactgtggctgctgcacttggagccaagggttcagagactcagggcccagcactaaag
55
      cagtggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggtcctggggcctcggagc
      aatttattgtttttcctcgtatttaaatattaaatatgttagcaaagagttaatatagaagggtaccttgaacactgg
      gggaggggacattgaacaagttgtttcattgactatcaaactgaagccagaaataaagttggtgacagat (SEQ ID NO:12270)
      60
      cgccggcggcgggggggggggggggggcgcccccccggaaactcagccacctgtgacaaatttgagtgtctctgttg
      aaaacctctgcacagtaatatggacatggaatccacccgagggagccagctcaaattgtagtctatggtattttagtcat
      tttggcgacaaacaagataagaaaatagctccggaaactcgtcgttcaatagaagtacccctgaatgagaggatttgtct
      gcaagtggggtcccagtgtagcaccaatgagagtgagaagcctagcattttggttgaaaaatgcatctcacccccagaag
      ctttagagaaaggccaatactttggttgttcctttgatctgaccaaagtgaaggattccagttttgaacaacagtgtcc
      {\tt aaataatggtcaaggataatgcaggaaaaattaaaccatccttcaatatagtgcctttaacttcccgtgtgaaacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgataacctgata
     cctccacatattaaaaacctctccttccacaatgatgacctatatcttcatcatcatcatctctccacacagaatctcatctggagaatccacagaattttattatcagcag
atgcctattttatgaagtagaagtcaataacagccaaactgagaccataatgttttcttacgtccaagaggctaaatgtg
agaatccagaatttgagagaaatgtggagaatacatcttgtttcatggtccctggtgttcttcctgatactttgaacaca
gtcagaataagagtcaaaacaaataagttatgctatgaggatgacaaactctggagtaattggagccaagaaatgagtat
aggtaagaagcgcaattccacactctacataaccatgttactcattgttccagtcatcgtcgcaggtgcaatcatagtac
70
      tcctgctttacctaaaaaggctcaagattattatattccctccaattcctgatcctggcaagatttttaaagaaatgttt
      ggagaccagaatgatgatactctgcactggaagaagtacgacatctatgagaagcaaaccaaggaggaaaccgactctgt
      75
      ataagagccacaggtctttatgttgagtcgcgcaccgaaaactaaaaataatgggcgctttggagaagagtgtggagtc
      atteteattgaattataaaagccagcaggetteaaactaggggacaaagcaaaagtgatgatagtggtggagttaatet
      tatcaagagttgtgacaacttcctgagggatctatacttgctttgtgttctttgtgtcaacatgaacaaattttatttgt
      aggggaactcatttggggtgcaaatgctaatgtcaaacttgagtcacaaagaacatgtagaaaacaaaatggataaaatc
      tgatatgtattgtttgggatcctattgaaccatgtttgtggctattaaaactcttttaacagtctgggctgggtccggtg
      gctcacgcctgtaatcccagcaatttgggagtccgaggcgggtcactcgaggtcaggagttccagactagaccagcctgac
```

```
caaaatggtgaaacctcctctctctactaaaactacaaaaattaactgggtgtggtggcgcgtgcctgtaatcccagctact
    cgggaagctgaggcaggtgaattgtttgaacctgggaggtggaggttgcagtgagcagagatcacaccactgcactctag
    catcattcccttcgacagcattttcctctgctttgaaagccccagaaatcagtgtttggccatgatgacaactacagaaaa
    accagaggcagcttctttgccaagacctttcaaagccattttaggctgttaggggcagtggaggtagaatgactccttgg
    gtattagagtttcaaccatgaagtctctaacaatgtattttcttcacctctgctactcaagtagcatttactgtgtcttt
    ggtttgtgctaggcccccgggtgtgaagcacagaccccttccaggggtttacagtctatttgagactcctcagttcttgc
    cactttttttttttaatctccaccagtcatttttcagaccttttaactcctcaattccaacactgatttccccttttgcat
    tctccctccttcccttgtagccttttgactttcattggaaattaggatgtaaatctgctcaggagacctggaggag
10
    cagaggataattagcatctcaggttaagtgtgagtaatctgagaaacaatgactaattcttgcatattttgtaacttcca
    tgtgagggttttcagcattgatatttgtgcattttctaaacagagatgaggtggtatcttcacgtagaacattggtattc
    ttgggttccattctcacctatccacacacatatccgtatatatcccctctactcttacttccccaaatttaaagaagt
15
    ttatttccaagttgttcaaacatttaccaatcatattaatacaatgatgctatttgcaattcctgctcctaggggagggg
    agataagaaaccctcactctctacaggtttgggtacaagtggcaacctgcttccatggccgtgtagaagcatggtgccct
    ggcttctctgaggaagctggggttcatgacaatggcagatgtaaagttattcttgaagtcagattgaggctgggagacag
    20
    tttccaggtattttataattctgggaagcaaaacccatgcctccccctagccatttttactgttatcctatttagatggc
    catgaagaggatgctgtgaaattcccaacaacattgatgctgacagtcatgcagtctgggagtggggaagtgatctttt
    ttgtgatccctaggtcttgggagctcttggaggtgtctgtatcagtggatttcccatcccctgtgggaaattagtaggct
    catttactgttttaggtctagcctatgtggattttttcctaacatacctaagcaaacccagtgtcaggatggtaattctt
25
    attetttegtteagttaagtittteeetteatetgggeactgaagggatatgtgaaacaatgitaacattittggtagte
    tgccaaggctccaqcccggccgggctccgaggcgagaggctgcatggagtggccggcgcggctctgcgggctgtgggcgc
    tgctgctctgcgccggcggcgggggcggggggggcgcgcgcgcactacggaaactcagccacctgtgacaaatttgagt
    gtctctgttgaaaacctctgcacagtaatatggacatggaatccacccgagggagccagctcaaattgtagtctatggta
30
    ttttagtcattttggcgacaaacaagataagaaaatagctccggaaactcgtcgttcaatagaagtacccctgaatgaga
    ggattigtctgcaagtggggtcccagtgtagcaccaatgagagtgagaagcctagcattttiggtigaaaaatgcatctca
    cccccagaaggtgatcctgagtctgctgtgactgagcttcaatgcatttggcacaacctgagctacatgaagtgttcttg
    gctccctggaaggaataccagtcccgacactaactatactctctactattggcacagaagcctggaaaaaattcatcaat
    gtgaaaacatctttagagaaggccaatactttggttgttcctttgatctgaccaaagtgaaggattccagttttgaacaa
35
    cacagtgtccaaataatggtcaaggataatgcaggaaaaattaaaccatccttcaatatagtgcctttaacttcccgtgt
    gaaacctgatcctccacatattaaaaacctctccttccacaatgatgacctatatgtgcaatgggagaatccacagaatt
    ttattagcagatgcctattttatgaagtagaagtcaataacagccaaactgagacacataatgttttctacgtccaagag
gctaaatgtgagaatccagaatttgagagaaatgtggagaatacatcttgtttcatggtccctggtgttcttcctgatac
    tttgaacacagtcagaataagagtcaaaacaaataagttatgctatgaggatgacaaactctggagtaattggagccaag
40
    aaatgagtataggtaagaagcgcaattccacactctacataaccatgttactcattgttccagtcatcgtcgcaggtgca
    atcatagtactcctgctttacctaaaaaggctcaagattattatattccctccaattcctgatcctggcaagatttttaa
    agaaatgtttggagaccagaatgatgatactctgcactggaagaagtacgacatctatgagaagcaaaccaaggaggaaa
    ttgagaagattetteeeatteteeatttgttatetgggaacttattaaatggaaactgaaactactgcaecatttaaaaa
45
    caggcageteataagageeacaggtetttatgttgagtegegeacegaaaaaetaaaaataatgggegetttggagaaga
    gtgtggagtcattctcattgaattataaaagccagcaggcttcaaactaggggacaaagcaaaagtgatgatagtggtg
    gagttaatcttatcaagagttgtgacaacttcctgagggatctatacttgctttgtgttctttgtgtcaacatgaacaa
    ttttatttgtaggggaactcatttgggggtgcaaatgctaatgtcaaacttgagtcacaaagaacatgtagaaaacaaaat
    ggataaaatctgatatgtattgtttgggatcctattgaaccatgtttgtggctattaaaactcttttaacagtctgggct
50
    gggtccggtggctcacgcctgtaatcccagcaatttgggagtccgaggcgggctcactcgaggtcaggagttccaga
    ccagcctgaccaaaatggtgaaacctcctctctactaaaactacaaaaattaactgggtgtggtggcgcgtgcctgtaat
    cccāgctāctcgggaagctgaggcaggtgaattgtttgaacctgggaggtggaggttgcagtgagcagagatcacaccac
    tgcactctagcctgggtgacagagcaagactctgtctaaaaaaacaaaacaaaacaaaacaaaacaaaaacctcttaat
    attotggagteateattecettegaeageatttteetetgetttgaaageeceagaaateagtgttggeeatgatgaeaa
55
    gactccttgggtattagagtttcaaccatgaagtctctaacaatgtattttcttcacctctgctactcaagtagcattta
    ctgtgtctttggtttgtgctaggcccccgggtgtgaagcacagacccttccaggggtttacagtctatttgagactcct
    60
    cctggaggagcagaggataattagcatctcaggttaagtgtgagtaatctgagaaacaatgactaattcttgcatatttt
gtaacttccatgtgagggttttcagcattgatatttgtgcattttctaaacagagatgaggtggtatcttcacgtagaac
    65
    cttgagaactttatttccaagttgttcaaacatttaccaatcatattaatacaatgatgctatttgcaattcctgctcct
    aggggaggggagataagaaaccctcactctctacaggtttgggtacaagtggcaacctgcttccatggccgtgtagaagc
    atggtgccctggcttctctgaggaagctggggttcatgacaatggcagatgtaaagttattcttgaagtcagattgaggc
    70
    gattaatteettteeaggtattttataattetgggaagcaaaacccatgceteeccctagecatttttactgttatecta
    cctgtggtggttgtgatccctaggtcttgggagctcttggaggtgtctgtatcagtggatttcccatcccctgtgggaaa
    ttagtaggeteatttaetgttttaggtetageetatgtggallttltcetaacataeetaageaaacccagtgteaggat
75
    ggtaattcttattctttcgttcagttaagtttttcccttcatctgggcactgaagggatatgtgaaacaatgttaacatt
    atgtcaagcgggccgccaccgcggtggaaactccagctt (SEQ ID NO:12272)
    ggccggtgctggagcggcacgtgcgcctcggcccctcggccgctcccgcccctcgccggtgcaccggcgctcgggg
    agecgetggeccgggtgtccagecggecettgecetgcetggegetcggaccgccacetttgccgccccctcgccagect
    ccgcagcttccagactggccggtctgcgcgcccaccctgcctcccggaccggccaccgccggaggccgcgaggaggaggc
```

```
ccggccgcgcagatcccgcttatcgggccccatctcccgttacataaggccacccctatctccgcgggccatcgc
    cgcaaccgccgcgccagcgccttctcccacgcgcgggggcgcccctgcccaccgctcccggcagggcttttggtggccat
    gggggataaggggcgttgactcacccgggcggggctccgggagttgcacagaccaaggtagttccccgctccttccccca
    tcacggagaccctgtgggagatgccgtgggccctctactacagattaggaaacaggcccgtagaggggtcgcgggccaa
    gtagcggcactccaggcactgggggccctcgagggaaggggcagacttctgggagtcagagccagcagctggggaa
    gcttcgagtgtggacagagagggtgggaatgacgttccctgtgggaagagagggtgggcaagcctgggatgcctctgagc
    gggaatccagcatgccttgtgaggagggtcacaagcacccttgtgaggaggttgagccccatcgaggacaggacggag
    ggagcctgagcaggcagagagggggcctggggaggcgctggttcggggaggaagtgggtagggagaaatcttgacatca
    acacccaacaggcaaatgccgtggcctctgctgtgggggtttctggaggacttctaggaaaacgagggaagagcaggaaa
10
    aggcgacatggctgtagggccaagcccaggagccgccctccacagcactcattctgcagaagggaaatttgaggccccca
    gacggcaggggttgatcctgcagagactggtgagcaaaggggatcaccccaagccccagtggcactaggaacacttacaa
    15
    tacttaagtaatttaagagactggttcatcgaaaaaataaaactccccaaattcccatagctggtagactgtggtcacag
    ccacagtgcactaagactatctgctcagcacttctggtgacccaaaagggtctgaggacaggagctcagagttgggtcag
    ctgtccaggtactcagggttgtcacaggcaaaactgctggaactcagggcagcattgcaaatgccacgccgctctcaggg
20
    ccccttgcctgccgctggaattaaacccaccagatcttggaaactctgccctggacccttctcaataagtccatgagaa
    atcaaactctttcctttatgcgacactggattttccacaaagtaaaatcaagatgagtaaagatgtggtttctagatagt
    gcctgaaaaagcagagaccatggtgtcaggcgtcaccacttgggcctataaaagctgccacaagacgccaaaggccacaag
    ccacccagcctatgcatccgctcctcaatcctctcctgttggcactgggcctcatggcgcttttgttgaccacggtcatt
    25
    caagatgaggtcatgagcaggctgggcctggtcctaagatgcctgtaggtcaggaaaaatctccatggaccaaggcccgg
    cagggactacctgctctcctggccttgtctgccactgccagctcctactcagccattcctgaacagaggacagca
    gagaagggccagcacceteccagaaccatgtggcatttgccaactggattttgaccataacaatgcagccatteteecca
30
    gcaccatcataggcccgcccttacaggaggattcgttagtagagtccgctccttgccccactagtaacagctcacatgtc
    gatgaacccattctgctaaggttcagtgaggttaagtgacagaggctggattcaagccaggcctggccaacaccagagtg
    tccatgctcctaactgcagtgttccctcaccatcagaaggcagggcatttaatacaccagatccccaccgcctcccatct
    gatttgtettggteaacagtggeecaggeeacteetaetteactegteeceacectggeeetteeegeaggeeectgtee
35
   cctgacagctggcatggtaaggacctttgggtgcagggaggatggggcagaggctccaggccttgggcttatcttctg
    agcetecettecatggetggggttecaagcaagetteaagtgetetectecetecegecataatetggeceetteeegec
40
    caccaccagactcacctgcgccaggcatctcagccccatcttcctgcagactcacaaaaaggcagctgcccaagcagggc
    ctgacccctcggtgtcccctccccacagtactgtgcagccctggaatccctgatcaacgtgtcaggctgcagtgccatcg
    agaagacccagaggatgctgagcggattctgcccgcacaaggtctcagctggggtaaggcatcccccaccctctcacacc
    45
    gtggggccattgtggcagcagggacgtggccttcgggatttacaggatctgggctcaagggctcctaactcctacctggg
    cctcaatttccacatctgtacagtagaggtactaacagtacccacctcatggggacttccgtgaggactgaatgagacag
    tecetggaaageeeetggtttgtgegagtegteeeggeetetggegttetaeteaegtgetgaeetetttgteetgeage
    agttttecagettgeatgtecgagaeaeaaategaggtggeeagtttgtaaaggaeetgetettaeatttaaagaaa
    ctttttcgcgagggacggttcaactgaaacttcgaaagcatcattatttgcagagacaggacctgactattgaagttgca
50
    gattcatttttctttctgatgtcaaaaatgtcttgggtaggcgggaaggagggttaggggggtaaaattccttagctt
   55
    tcgtatttaaatattaaatatgttagcaaagagttaatatatagaagggtaccttgaacactgggggaggggacattgaa
    caaqttgtttcattgactatcaaactgaagccagaaataaagttggtgacagataggcctgattgtatttgtctttcatt
60
    ttggcctttggggacactggtctgtggtctgaagactctgaggagctcttcgggaggctggtggttggattggaggagggact
    aggaagcccaccttctgtctgctgcaccagcaaggacggagaggcttgggccagactgtcagggttcaaggagggcatc
    aggagcagacggagacccaggaagtetcacaatcacatctcctgaggactggccagctgtgtcttggcaccaccacacat
    ccatgtctccctcacaacccaggaggccgatgagaactgtgaggctcagaaagcgtgggcggtttgcctaaggtcacgta
65
    gctacttcctcactggggtcctggggcctcagagcctcatctgaggtaaaggagcaaagttgggattggggtccaaaatt
    cactttaactccaaagcccacacacttaaccaccctgcctatttctgtccaaatgtcacctgtcctgaat (SEQ ID NO:12273)
    ttcggcatccgctcctcaatcctctcctgttggcactgggcctcatggcgcttttgttgaccacggtcattgctctcact
    cacccagaaccagaaggctccgctctgcaatggcagcatggtatggagcatcaacctgacagctggcatgtactgtgcag
70
    ccctggaatccctgatcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctgccgcac
    aaggteteagetgggcagttttccagettgcatgtccgagacaccaaaatcgaggtggcccagtttgtaaaggacctgct
    cttacatttaaagaaacttttcgcgagggacggttcaactgaaacttcgaaagcatcattatttgcagagacaggacct
    80
    aatttattgtttttcctcgtatttaaatattaaatatgttagcaaagagttaatatatagaagggtaccttgaacactgg
    gggaggggacattgaacaagttgtttcattgactatcaaactgaagccagaaataaagttggtgacagattcagcccggc
```

cgggatccgaggcgagaggctgcatggagtggccggcgggctatgcggggtgtgggggctgctgctgctctgcgccggcggc 9999gcgggggcggggcgcgcgcctacggaaactcagccacctgtgacaaatttgagtgtctctgttgaaaacctctg cacagtaatatggacatggaatccacccgagggagccagctcaaattgtagtctatggtattttagtcattttggcgaca aacaagataagaaaatagctccggaaactcgtcgttcaatagaagtacccctgaatgagaggatttgtctgcaagtgggg tcccagtgtagcaccaatgagagtgagaagcctagcattttggttgaaaaatgcatctcaccccagaaggtgatcctga gtcccgacactaactatactctctactattggcacagaagcctggaaaaaattcatcaatgtgaaaacatctttagagaa ggccaatactttggttgttcctttgatctgaccaaagtgaaggattccagttttgaacaacacagtgtccaaataatggt caaggataatgcaggaaaaattaaaccatccttcaatatagtgcctttaacttcccgtgtgaaacctgatcctccacata 10 ttaaaaacctttccttccacaatgatgacctatatgtgcaatgggagaatccacagaattttattagcagatgcctattt tatgaagtagaagtcaataacagccaaactgagacacataatgttttctacgtccaagaggctaaatgtgagaatccaga atttgagagaaatgtggagaatacatcttgtttcatggtccctggtgttcttcctgatactttgaacacagtcagaataa gagtcaaaacaaataagttatgctatgaggatgacaaactctggagtaattggagccaagaaatgagtataggtaagaag cgcaattccacactctacataaccatgttactcattgttccagtcatcgtcgcaggtgcaatcatagtactcctgcttta 15 cctaaaaaggctcaagattattatattccctccaattcctgatcctggcaagatttttaaagaaatgtttggagaccaga atgatgatactetgeactggaagaagtacgacatetatgagaagcaaaccaaggaggaaaccgaetetgtagtgetgata ctccatttgttatctgggaacttattaaatggaaactgaaactactgcaccatttaaaaacaggcagctcataagagcca caggtctttatgttgagtcgcgcaccgaaaaactaaaaataatgggcgctttggagaagagtgtggagtcattctcattg 20 aattataaaagccagcaggcttcaaactaggggacaaagcaaaagtgatgatagtggtggagttaatcttatcaagagt tgtgacaacttcctgagggatctatacttgctttgtgttctttgtgtcaacatgaacaaattttatttgtaggggaactc atttggggtgcaaatgctaatgtcaaacttgagtcacaaagaacatgtagaaaacaaaatggataaaaictgatatgtat tgtttgggatcctattgaaccatgtttgtggctattaaaactcttttaacagtctgggctgggtccgggtggctcacgcct gtaatcccagcaatttgggagtccgaggcgggatcactcgaggtcaggagttccagaccagcctgaccaaaatggtg aaacctcctctctactaaaactacaaaaattaactgggtgtggtggcgcgtgcctgtaatcccagctactcgggaagctg aggcaggtgaattgtttgaacctgggaggtggaggttgcagtgagcagagatcacaccactgcactctagcctgggtgac ttcgacagcattttcctctgctttgaaagccccagaaatcagtgttggccatgatgacaactacagaaaaccagaggca gcttctttgccaagacctttcaaagccattttaggctgttagggcagtggaggtagaatgactccttgggtattagagt ttcaaccatgaagtctctaacaatgtattttctcacctctgctactcaagtagcatttactgtgtctttggtttgtgct 30 aggccccgggtgtgaagcacagacccttccaggggtttacagtctatttgagactcctcagttcttgccacttttttt tcccttccttgtagccttttgactttcattggaaattaggatgtaaatctgctcaggagacctggaggagcagaggataa ttagcatctcaggttaagtgtgagtaatctgagaaacaatgactaattcttgcatatttttgtaacttccatgtgagggtt 35 ttcagcattgatatttgtgcattttctaaacagagatgaggtggtatcttcacgtagaacattggtattcgcttgagaaa aaaagaatagttgaacctatttctcttttacaagatgggtccaggattcctcttttctctgccataaatgattaatt aaatagettttgtgtettacattggtageeageeageeaaggetetgttatgettttggggggeeatatattgggtteea ttctcacctatccacacaacatatccgtatatatcccctctactcttacttcccccaaatttaaagaagtatgggaaatg agaggcatttcccccaccccatttctctcctcacacacagactcatattactggtaggaacttgagaactttatttccaa 40 gttgttcaaacatttaccaatcatattaatacaatgatgctatttgcaattcctgctcctaggggaggggagataagaaa ccctcactctctacaggtttgggtacaagtggcaacctgcttccatggccgtgtagaagcatggtgccctggcttctctg aggaagctggggttcatgacaatggcagatgtaaagttattcttgaagtcagattgaggctgggagacagccgtagtaga tgttctactttgttctgctgttctctagaaagaatatttggttttcctgtataggaatgagattaattcctttccaggta ttttataattotgggaagcaaaacccatgcctccccctagccatttttactgttatcctatttagatggccatgaagagg 45 atgctgtgaaattcccaacaacattgatgctgacagtcatgcagtctggggagtggggaagtgatcttttgttcccatcc tttaggtctagcctatgtggatttttcctaacatacctaagcaaacccagtgtcaggatggtaattcttattctttcgt tcagttaagtttttcccttcatctgggcactgaagggatatgtgaaacaatgttaacatttttggtagtcttcaaccagg 50 gccggcggcggggggggggggggggcgcgcgcctacqqaaactcaqccacctqtqacaaatttqaqtqtctctqttqa aaacctctgcacagtaatatggacatggaatccacccgagggagccagctcaaattgtagtctatggtattttagtcatt ttggcgacaaacaagataagaaaatagctccggaaactcgtcgttcaatagaagtacccctgaatgagaggatttgtctg 55 caagtggggtcccagtgtagcaccaatgagagtgagaagcctagcattttggttgaaaaatgcatctcacccccagaagg tgatcctgagtctgctgtgactgagcttcaatgcatttggcacaacctgagctacatgaagtgttcttggctccctggaa ggaataccagtcccgacactaactatactctctactattggcacagaagcctggaaaaaattcatcaatgtgaaaacatc tttagagaaggeeaataetttggttgtteetttgatetgaeeaaagtgaaggatteeagttttgaaeaacaeagtgteea aataatggtcaaggataatgcaggaaaaattaaaccatccttcaatatagtgcctttaacttcccgtgtgaaacctgatc ctccacatattaaaaacctctccttccacaatgatgacctatatgtgcaatgggagaatccacagaatttattagcaga tgcctattttatgaagtagaagtcaataacagccaaactgagacacataatgttttctacgtccaagaggctaaatgtga gaatccagaattttgagagaaaatgtggagaatacatcttgtttcatggtccctggtgttcttcctgatactttgaacacag tcagaataagagtcaaaacaaataagttatgctatgaggatgacaaactctggagtaattggagccaagaaatgagtata ggtaagaagcgcaattccacactctacataaccatgttactcattgttccagtcatcgtcgcaggtgcaatcatagtact cctgctttacctaaaaaggctcaagattattatattccctccaattcctgatcctggcaagatttttaaagaaatgtttg cttcccattctccatttgttatctgggaacttattaaatggaaactgaaactactgcaccatttaaaaacaggcagctca taagagccacaggtctttatgttgagtcgcgcaccgaaaaactaaaaataatgggcgctttggagaagagtgtggagtca ttotcattgaattataaaagccagcaggcttcaaactaggggacaaagcaaaaagtgatgatgatagtggtgagttaatctt atcaagagttgtgacaacttcctgagggatctatacttgctttgtgttctttgtgtcaacatgaacaaattttattgta ggggaactcatttggggtgcaaatgctaatgtcaaacttgagtcacaaagaacatgtagaaaacaaaatggataaaatct 70 gatatgtattgtttgggatcctattgaaccatgtttgtggctattaaaactctttttaacagtctgggctgggtccggtgg ctcacgcctgtaatcccagcaatttgggagtccgaggcgggaggtcactcgaggtcaggagttccagaccagcctgacc 75 aaaatggtgaaacctcctctctactaaaactacaaaaattaactgggtgtggtggcgcgtgcctgtaatcccagctactc gggaagctgaggcaggtgaattgtttgaacctgggaggtggaggttgcagtgagcagagatcacaccactgcactctagc atcattcccttcgacagcattttcctctgctttgaaagccccagaaatcagtgttggccatgatgacaactacagaaaaa ccagaggcagcttctttgccaagacctttcaaagccattttaggctgttaggggcagtggaggtagaatgactccttggq tattagagtttcaaccatgaagtctctaacaatgtattttcttcacctctgctactcaagtagcatttactgtgtctttg gtttgtgctaggcccccgggtgtgaagcacagaccccttccaggggtttacagtctatttgagactcctcagttcttgcc acttitttttttaateteeaceagteattttieagacettttäaeteeteaatteeaacegattteeeettttgeatt

ctccctccttcccttcttgtagccttttgactttcattggaaattaggatgtaaatctgctcaggagacctggaggagc agaggataattagcatctcaggttaagtgtgagtaatctgagaaacaatgactaattcttgcatattttgtaacttccat gtgagggttttcagcattgatatttgtgcattttctaaacagagatgaggtggtatcttcacgtagaacattggtattcg tgggttccattctcacctatccacacaacatatccgtatatatccctctactcttacttcccccaaatttaaagaagta tatttccaagttgttcaaacatttaccaatcatattaatacaatgatgctatttgcaattcctgctcctaggggagggga gataagaaaccctcactctctacaggtttgggtacaagtggcaacctgcttccatggccgtgtagaagcatggtgccctg 10 gcttctctgaggaagctggggttcatgacaatggcagatgtaaagttattcttgaagtcagattgaggctgggagacagc ttccaggtattttataattctgggaagcaaaacccatgcctccccctagccatttttactgttatcctatttagatggcc atgaagaggatgctgtgaaattcccaacaaacattgatgctgacagtcatgcagtctgggaagtggggaagtgatcttttg tgtgatccctaggtcttgggagctcttggaggtgtctgtatcagtggatttcccatcccctgtgggaaattagtaggctc atttactgttttaggtctagcctatgtggattttttcctaacatacctaagcaaacccagtgtcaggatggtaattctta ttctttcgttcagttaagttttcccttcatctgggcactgaagggatatgtgaaacaatgttaacatttttggtagtct gccgccaccgcggtggaaactccagcttggatccccgctgacaatctagaaacaagcaacagaccctctgatgtagccat 20 ctgtgccgcgctctcccgcaccgccacgccttggtccctggagaccaccctccagggcaggggctgccgctcggcc gggcccgcggggtccctcggcctgacatggccggtgctggagcggcacgtgcgcgcctcggccctcggccgctcccgcc cctcgccggtgcgcaccggcgctcgggagagccgctggcccgggtgtccagccgggcccttgccctggctctggcgctcggacc gccacctttgccgccccctcgccagcctccgcagcttccagactggccggtctgcgcgcccacccctgcctcccggaccg gccaccgccggaggccgcggaggagggcccggccgcgcagatcccgcttatcgggccccatctcccgttacataaggcca ccccctatctccgcgggccatcgccgcaaccgccgcgccagcgccttctcccacgcgcgggggcgccctgcccac ccaaggtagttccccgctccttcccccatcacggagaccctgtgggagatgccgtgggcctctactacagattaggaaa caggcccgtagaggggtcgcgggccaagtagcggcactccaggcactgggggcccttggagggaaggggcagacttctgg gagtcagagccagcagctgggctgggaagcttcgagtgtggacagagagggtgggaatgacgttccctgtgggaagagag ggtgggcaagcctgggatgcctctgagcgggaatccagcatgccttgtgaggagggtcacaagcacacccttgtgaggag tctgcagaagggaaatttgaggcccccagacggcaggggttgatcctgcagagactggtgagcaaaggggatcaccccaa gcccagtggcactaggaacacttacaatctctgacctggactaaggctgccagctggcccagttaagagtttcccaga aggatggcccatacactttaaattaaaggggccagacacgtgcacactacttccagccactctggaagctgaggtggggg caaaacaaaaaacaccaaaaaagctcccagaaagacctctgaatctttctggatctctcagtggagacctggaaatctg aactttgacaatccctctcacagtggggccaaggaggaattaggcaagccaaaagaagtgaactttactcttctattgcc 40 tgtttgaattttgtatccaagcaagtgttacttaagtaatttaagagactggttcatcgaaaaaataaaactccccaaat tcccatagctggtagactgtggtcacagccacagtgcactaagactatctgctcagcacttctggtgacccaaaagggtc tgaggacaggagctcagagttgggtcagctgtccagggtactcagggttgtcacaggcaaaactgctggaactcagggcag atgagtaaagatgtggtttctagatagtgcctgaaaaagcagagaccatggtgtcaggcgtcaccacttgggcctataaaagctgccacaagacgccaaggccacaagccaccagcctatgcatccgctcctcaatcctctcctgttggcactgggcct ctcagccattcctgaacagaggacagcagagaagggccagcaccctcccagaaccatgtggcatttgccaactggatttt ttgccccactagtaacagctcacatgtctgagcactgcttacaccaggcctggtgcacgtgctttatgtgtccatttcatc 55 actgccagccacctcaagaggcaggtacgatgaacccattctgctaaggttcagtgaggttaagtgacagaggctggatt caagocaggeetggeeaacaccagagtgteeatgeteetaactgeagtgtteeeteaccateagaaggeagggeatttaa tacaccagatccccaccgcctcccatctgatttgtcttggtcaacagtggcccaggccactcctacttcactcgtcccca gtcaatttttttctctcagctccaagaccctaaacagtgggacctcacccctatgcctgctgttcaaagcagaaaacgaa 60 geteaggaatgetgaggggetgeeaggeetgeetetgtgecacaecagggatgettgtggggeetgtgtggggeagaee Eggeetgggetgeeagggeaggeecaeaaeeeetgeeageaetetgeteaetgteaetttgeteeeaeaggeteegetet gcaatggcagcatggtatggagcatcaacctgacagctggcatggtaaggacctttgggtgcagggaggatgggcagag tcccgccataatctggccccttcccgcccaccaccagactcacctgcgccaggcatctcagccccatcttcctgcagac tcacaaaaggcagctgcccaagcagggcctgacccctcggtgtcccctccccacagtactgtgcagccctggaatccctg atcaacgtgtcaggctgcagtgccatcgagaagacccagaggatgctgagcggattctgcccgcacaaggtctcagctgg aatatcoatggtgtgtgtccacccaggggtggggccattgtggcagcagggacgtggccttcgggatttacaggatctgg gctcaagggctcctaactcctacctgggcctcaatttccacatctgtacagtagaggtactaacagtacccacctcatgg 70 ggacttccgtgaggactgaatgagacagtccctggaaagcccctggtttgtgcgagtcgtcccggcctctggcgttctac tcacgtgctgacctctttgtcctgcagcagttttccagcttgcatgtccgagacaccaaaatcgaggtggcccagtttgt gttagggaggggtaaaattccttagcttagacctcagcctgtgctgcccgtcttcagcctagccgacctcagccttcccc ttgcccagggctcagcctggtgggcctcctctgtccagggccctgagctcggtggacccagggatgacatgtccctacac ccctcccttgccctagagcacactgtagcattacagtgggtgcccccttgccagacatgtggtgggacagggacccact gagtgtgtttgtcaccgttggggattggggaagactgtggctgctgctgcacttggagccaagggttcagagactcagggcc ccagcactaaagcagtggaccccaggagtccctggtaataagtactgtgtacagaattctgctacctcactggggtcctg cttgaacactgggggaggggacattgaacaagttgtttcattgactatcaaactgaagccagaaataaagttggtgacag

gctactgagaagcatcattggcctggtcctggcactaccaaagggcaggggaagcgatgcccaaggggctcctgaccagc ctgcctagggacaccttttccaggtctagagaatcaaaggagcctcagagcagctaggagggcctgagctgaccaagca gcctcaaatcagacagagaaatgctcaagtcacttctgccaactcactgtgatggcagctacagatgacagcccctctca 15 agactetteageteacagacaagecaetgaetteatetgtacacacececateeecaatgcaageecaetgtacaettae aggtataaatgcatttgcaaggccttgcaaaatgccctatgtacgtaaaactgacccacaaaatccaaaattgcaagtgc cagatgccagccaggtcagaacatcctggcttcagcaatgggctgctcagcatgggagccttttatgggccaggcctggc tgggctgccgctcccttcccagcatgacccaacaccaggctctctaggccctggcggaggtgggctcttgaggcccagtc tggcctgatgcttctgtgctcggtgctcctgggtagcaaggcgcttctgtgaecctgggggagctgggtgcttgagcccc 20 aggeceetetggeeteeteteagggeeaetgteagtgagggageeetggeeaecageaeteaggteetgtaeeetettgt tcaggtcattgcgctctgtctgcagtgcccggcacagcttctccagccgttggatttttacctgcaggccctccagttct ttatcccggactgttttctcctcagccatctcaagcagggccttgttgctgctctcccaccgggaccggtacatggtggt ttctttctccagcttcttgatcttcttagtcatcttttccatctcctgcttgaatgtggtgaatacctcgctgcttttgg aaagtgtgttctggaactcctcaaacttctctgtgtatagggcaagctgttgcttcaggtgggtctctttgctgcttcatc agclcacacatectctgggactctactgcctctttcaggagaaaatccttctcccgctggtgccgctcttcttcagcatccttctagactcctctttagcctccttctagactctcctgggcctgctggagcttggcatccaccagctgctgttgtaggtccttgtgtttgaagactttgtcgatat ttgcgctcattgtgctgttccatctgcagctgaatgtcattcagtgtcacctggaagtgcgaggtcacctccttgcgctt ctcctcctcctccgggcccgctgcacaccttcttccttgagggagcggttgtgcccgtgcaggtcacggcataggctct

30

35

50

70

tggcctgatgcttctgtgctcgtgtgctcctgggtagcaaggcgcttctgtgaccctgggggagctgggtgcttgagccc
aggcccctctggcctcctctcagggccactgtcagtgaggagaccctggccaccagcactcaggtcctgtaccctcttgt
tcaggtcattgcgctctgtctgcagtgcccggcacagcttctccagctggtagatttttacctgcaggccctccagttct
ttatcccggactgttttctcctcagcattctcaagcagggccttgttgctgctctccaccgggaccggtacatgggt
ttctttctccagcttcttgatcttcttagtcatcttttccatctcctgcttgaatgggtgaatacctcgctgcttttgg
aaagtgtgttctggaactcctcaaacttctctggtatagggacaagctgttgcttcaggtgggtctcttgctctcatc
agctacacatcctctgggactctactgcctctttcaggaagaaaatccttctccgctggtgccgctcttctgcctcctt
tagcatctcctgggcctgctgtggagcttggcatcacacagctgctgttgtaggtcctttgtgtttgaagacttgtgcg
tcctcgcgcagctcatactgcagctgatgctgttgagctctagaggaggcagctggag
ttgcgctcattgtgctgtccaatcgcagctgaatgtcattgtgcacctggaaggcaggtcacctctttgcgctt

ttgcgctcattgtgctgttccatctgcagctgaatgtcattcagtgtcacctggaagtgcgaggtcacctccttgcgctt etcetectectectgggcccgctgcacaccttetteettgagggagcggttgtgcccgtgcagctcacggcataggctct caagettgctgcgggccaggacggcttgctgtgctgctcaccgcgcaggtggtccttctctttgcaccagctggctctgcttt tctgtaggagcttcatctgcttctgtgaattcc (SEQ ID NO:12276)

ggcatttaaaatgtgctgtcaaaacaagtttttctgtcaagaagatgatcagaccttggatcagatgaactcttagaaat

ggcattgtaatcagacagaactggcctcaaatcctggctgtcatgtacttgctatgggcctagagtagcttacctaaatg ctactaaccttcctccataccattattgtaaagattaaaggtgatgcatctgttaagtaactaatagagtgcttattaaa accetagattqtattqtaqqaqqcategtggatggatggctqctggaaaccecttgccatagccagetettettcaatac ttaaggatttaccgtggctttgagtaatgagaatttccggtaagaagaaaaatagatgaaaatatcctatggaatttccc ttaaaggtcgtctgaatctcagagtctttgcaataagttacatggttattctccaaagatcttgagatatcacagatgtc tgttcacatttggattgttcttattttgaaaataaataggtttttaaaaaactctattgaccatcttgataggctcttctt gicattataaatgtgttatttcacttatcccactcttttgtgttctctaaatgtctttgtactcactaaattgtgtagtc tkagagggcagggtgtgggtatcattcatcttttgaaaggaagcatgaacaattagtggttaaggtggcagttaacact gctttctgaaactttaaaagcttcgacaacacaaaagaggcaggtgaaagtaccaaaactctggtaagttgtaggataaa tgattttcctaaatcaccaagaaagattattagtcactctcaagatggaatacagtatctgtaattggttccattttatc caatttttcaccaaataataattaatataattcattttcataatttacatgaagttaatataactattgcatctctgttag tgcatctgcagaaatatctgttaaggaactttgtgcataagagacagagttggaggtgggagagaaagtgaaaaaagata aattatagttttattatttttgataaggggcagtaattatgaaattatgacaaacttacatctttagacctagaaatatg ttgacatqttattttaaacctcactttttaactaaaaaatttaaccatttgtctatgattatatttttcagaaaccacat ttgagaagtatttccatccagtgctacttgtgtttacttctaaacagtcattttctaactgaagctggcattcatgtctt cattttgggggtaattttatctttaggcataaataacattatgttcatggtcatgatgattgtccttggatatattttcc attaaattagtttacgttcagtttgcttatatctctaggtactcagtatctgggggatagaaggcagactacagagattt 25 agagaggtttggtaaacacctaactgagcatttttctacattgtggtaatagtccaaacaagcattatagccctcaaata aattgggccttttgatatttaactgaacttggaagtataccacttattgatagactacatatttttcatggcaattaaaa gtagatatttagaatttgcttatgttactttttatctgtccctgacactgactcctctatcccttgatctttatccta gttcagtttaaaacatttctttctttatttaagcettttgttgttccttctaataaaattcatatgtttccatgactat aaaatcatttattqaqcattqccacacattqqcactqcttctatttcattqtgataaattqaqccaqtttatttataaa gtatgcctacagttaggcttttctctaatccgggttggtgaagcctcaagttatcataaaatgccaaaattgtactatat gctcaatgtttatgttcagttacaaggctgttgaatgcacagaagcaaggataacactgattttttcactggtcagaata aaaattattgattgctcttttgcttatagtattcatcaagatgaataggctccttcaaaatgctttgctctatggttttt 40 gatettattcaagtgagtactcatttttccataaaatgeetggtataactgetatggagtttgtetetetetgtgttttt ctgtctgtcttaaggaaaccacacttgaaacaataatatttttgtagaaatttatgatcttataaagctcaaaaagaagt cttttccttactgttttagaatctaattatctttaaaacgtaatttataagcggcccagacggatgagttctagtctgca caggtgaggtattctcttcctctatctggagaagccagatatcttggtggcacctgcagggagaatggcttgacccaggg 45 aacagctgttgttgcttgtggactaaaggccctcttctcccacctcaagaaaacaggtggcctgacctaaggaagtgatt tttgccatagcaggtaataccagcttcagtggaagtctcgatggcaccaagcataccaaaatagcaccacaaagttctga aaactaaattgtcattggaatcacagcattaaaaaataggttagaacttgcatgctaaatccaaacaacctgactgcatg ttaaaatagaagatttaaataggaccagagtgtcctaacataatagacatgaagccaagatacaattggaaatcacccat tgtaacaagaaataggaaagttacaacttaaatgagaaaatatagtcaacagattacaaaattgaagtggatcagatgtt ggaattetetgacatagatttgaaagcagacattataaaaagtgettgaaaaagcaattacaaatgccettgaagcaaat 50 tctataagcagttcacttctagtacaatgacatacataggttgaaatttaaaaagacagaaaaagatatagcatactata atgggttgaatagtgtcccccaaatttcacatcctcttggaaccttaaaatgtgatcttattttgaaataatatctttg caaatataattaatqaaattaaqatqaqatcatactagagtaggggggccctaaatccaatgacaagtgtctttattag aaaaqqaaaqqacacaqaqtaactcactqqqaaqaaagccatgtgaaqacagaggaagagatcagagtgatgcggctata agccaaggaaggcagagattgccaggatccaccagaaccttggggaagtcaagaaagcattcttctctagactgataca catgcatacattaattataaaaagcagaagtggctatattaacatcaaagttaatgttattaacataaagtagacttcac aatgtatacacatcaaacaacgaagactcaaaatttgtgaaacaaaaaataatagggataaaagagaaatagacaaatcc acaattattettgaggactteactgeeteeteegtaactaatggaagtaetagacagaaaatcagaaagggeataaa 65 atcaagactaaatatatactgagccataaaagaaactttaaaaattttttcagaacttaaaicatgcagaatttgttctc aaaccacaatggaatcaaaccagaaatcaagaaattaaatacaacgggcaaatctccaaatgcttggaaattaaatacta gcatatcaagatatatgtgatgtggctaaagcaatactgacaggacattttttaaaatcaaatgaatacattagaaaaaa aqqagaattatcaaatcaaaaatctaagttactgcttcaagaaactagaagaagtagagcaaaacaaattcaatacaagc 70 agaacaaagaaaatatttaaatataagagccaaaattaatgaagttgaaatcaagaaaacaatagaaaaattaatgaaa tgaaatttggggctgtcactacagaatctgcagtcattagaaggataataagaaaaactatgaacaattttatgctcaca aatctgataacttagaggaaatggaccaattcttcagaaaccacaaactaccaaaacataatgaagatgaaatagacaat ccaaacactcatataatcactaaatacattgaattcatcatacacaagctcccaaaaaagggaccttcaagcctgctggtt 75 acactgaatcattctatcaaatatttacagaagcattaacaacaattgtacagtctcttctagaaaatagaagggaagg aacattttccagttgattttaggaggccagtattactgtgatgctaaaaccaaataaagatattactaaaaaagacaact acaaaaatatctcccattaacttagatattaaaatgctctataaaatattaacaaatcgaattcagcaatgtataaaaag aattatacaccatgaccgagtgagatttatttcaggtacacaagtcttgctcaattatttgaaagtcaagcaatgtaatc taccctatcaacaggctaaagaagaaaatcatatgtagaaaaggtatctgataaaatgcaacacctctcatggcctgtgt ccctccctatgcctcctggatttatatgttgaagtactaattgccagtatatcaaaatgtgactgtattttgagataggg tcagttaaaatgaggtcatgagggcaggtcctactgcaatatgactggtatctttagaaaaacagataagggtatagata cacagagatagaaaaccatgtgaagacactgggagaaaatggccacctataagccaaggaggaggactccaaagaaacc

 ${\tt aacactgctggtaccctgatttcagacctctagcctcctgaattgtgagaaaataaagttctattatttaagtcaccaag}$ tctgtggtactttttatagcagccctagcagactgatataaacacctattgaagataaaatttcttagaaagtaggtgtg gagaactgcctcaacttggtacaaaacatgttcaaaaagtctagagctaccatacttaatggtgagtacaagactgaatg aggttgaggagccacatctggtgagggccttcctgctggtgggggctctctggagtccagaggtgacaaaaagcatcaca tggcgaggggctgaatgtactcatgtgctagctcaggtctctcttcttcttcttataaaactaccggttccctttccgta ataacacattgatactctaatccattcatgagggcagagccattgtgatccaattacctcttaaagccccacctctcaat actgccacattggggattaagtttcaatctgaattttggaggggacattcaaaccacagcaataatattggaagtttagc tcaccccaagttttttggagagaaagtagtaaaaatgggtatattttgtttagaaagtaatgcaaattaaaaccacaatg a catattatta catg cag ctata ag c g tata cag a ataa aa aa tag t g atg cta ag ta aa tata aa t g aa caa ag g g tata cag ag cag agaaaatagtttggcagcatcctatgaaacaaaacatgcatttgccttacaatccaacaattgtgctcttagacattcatcc ttgataaatgaaaactacgtgcacacaaaaatatgtacatgaatgttcacagagattttttcatgactgccaaaaactgg aaacagatgtgcttcagttggtaaaatctgtgatatatcatgtcagggaatactacagagcaataaaaaggaacaaacta gtgatacccacaagttaggtggatctccagggtattatgatgagtgaaaaaagccagtcttcataaagaaactgtggtac atttataaaatagaatattatccagtgataaaaagaaataagctatcaagccatgaaaagaaatggagaaaccttcaaag tcatattgttgagtgaaagatggggacgccaatctgaaaaggcttcacactgtatgatcccaactatgacattttgaaaa 20 ggctacttttaaagcagtgaaaatattaatatatgatgatgggtggcattatacatttgtcaaaacctgtaaaacataca ${\tt atgcaagatattaacaatagggaaactggggtggaaacaaaggggtgtataagtctctgtactttctgctagtttttct}$ gtaaacctaaatqqctcataaaaatqtctatcaattcttttaaaagctaattcagaaggttacatatgatatgagtccg tttacataatattettgaaatgacaaaattataggeatggagageagagagtggttgccagaatttagagagattgggt gatgatqaqqtatqtatggggagaaaqqtqactttggttatgaaagaatagcagcagaatccttgtggtgatgaaactat tttgtgtcttaactgtggtggtggtgatgtgaatctatgcaaatgataaaattgcataaaacttcacacatatgcaagca cacacactgtggcacataaaacttgtgaaatctgaacaaggtgagtgcattgtattaatgtcaattttctgattgtaata 30 taatatttaaagcagggcatagtttttaatattgtctaattttgtttcctttcagtctatgcatattgatgctactttat tagtgattattgagatgggacttggggacagatagctacatcaatgctatttttgtaatggtgccaaatcaaaatattaa 35 aagagtettttecateaatgteaaacaagataeattataegtttttgtgatgeagttgeateatggtgeaattagatgea aaaatcagattaactgtttcaatttaagagtagccaatatatcagttatttccaatgctgtaatgtatcaccatctgcaa tcatatttttccataaattgcttaaaatcattcatgttctgcattttacatgattctctacattttgtcagaaaaagattct aattattetetatgtgagaaaggaaacataacccatgaaacttattagaactgaaaaatggtettgaacttgtttcatta ataccctgacatttcctaaggaatgtaggatttgtcatgttggtggttgttcttcccttcagtattgttactaaaaccaa gaaatgaatccccaacttcacgtcagggaaaacaaactctatgtcctctctccattattcctcaattagaacttctcttta catagatgactttctaagcattggaaagaaaccatagtcagaaactagaaaaaagagatattcactaaccaattgggtca tgctgctgcacaaagaaattgtctccctcctctggcttcagcatggattctgtttttctttgcattttttgtaaaatgga aaqtaqtcaattaqccaccaaattcaqcatcctqaaattgcttttttgcaaqaaqataactttgcaacccatgggttaga gaaacaaccttagattttagattttagattttagaagtttagattttaaaactgactccaccactttttacttgtgttac 45 cttggagattgctaaacatttctgaagctcatttttattattgctgatatggtgacagtatttgtctttcaatcctaagc catttgtgaagtgtctgcaggctcccaggtactgtgcaaggtatcgaggacacaaagtcaaataatggtcaaatccctag atattccttgtttcctttttaagttattgttaagtaaatgttgtggaaaacatatttttgtggcacctaagagagcc ttttctgatttgatctgcctgtaagtggacactagtcctgctttgatttttctaataaatttcttggaattacttctctc 50 cctctggaactttggaacttgaaagaacagtataattagcagctaccactatttaaaatgttaacaacacaatttgattc taaaaattettacaaataaactgtetatattgatgttttcagaetetaaggecagtattattaccetttecacaggggaa atgtgctcggtgagaaaaactggccactatttctgcattttctagtttcatgttcttctgtacaatattgccatccttct tgattgtgttttgtttggtttgttttggttttattttattttaaagccaaaagaaaaaaattaagctgcctcctatgtaaaatt tcttaaggatattgtgtatctttataaaatatttggattgactttttgaaaatcaaaattacatcagtatgaaaattaat 55 aatcagaaaaaagtaattgttctttataacttttatttttagcccagttgcaaagtaacagcaatgaagtgctttctctt ggagttacaagttatttcacttgagtccggagatgcaagtattcatgatacagtagaaaatctgatcatcctagcaaaca acagtttgtcttctaatggggtgagttttccaacagttgcttagagttgcatcttatgtttttgggcctgatttggagaag tcattcatggacaagcagatcctcctaaggggcaatcaggagaaggagtcctgttccagtggagtggtgtgcaaaagtgg agtgtgcttcagtgctagaattatagttgcaaaccagacaggtcactgacctcaaggtgtttattgtcaggtgcag tggatagacattaatctaattacatactcaaatgtctaacatcaataatagtaactcacatttattgagttattactgta tgccagacactattctttgagctttaaattgataattcatttaatcctcatgataaatctgtgagatagttatctttatt tetgtttgaatgttgaagaaattgtageactgagageetggateactegetteagtteatacagetagtaaaatggggag ccacaactcttacccgagcagtctgtctgcagagtctgttatctcatgagaagataaatgctttaaaaaagataacaatga aaatattaatgattcgagtataatctgggacatcccaggcaacttgagcagtagaqqqttccaggagagcaaattctagg tactcgtatgataggctggggaatcagctgtgcaatggccctgaagtgcaaagaattagggctttcatggcaaaacacca gtggccaaagcaaggtagagagaaagcagttttgcaacaaagaggcataatcaaattagttcatttcataaatacttttt aqcaaatgagtaataagttagttatttatgaagtccagtggtgaaaaaggacacaqqgtaggggcactgggggctccagtt 70 agggtaggctgagctaataagctgccatttgacaaagatgtgagagaatgagccttaagggtatctagggacatatgttt ctttaggtctttgcttcagtgtcaccttctcagtgatttacctatttacagttgcaatcccttccctatctgagcactcc ctgtccccttctctgcgtgtcccatatctggaatatgatatatttatgtaatgggtattgtctgtttttccctactaga 75 taaatactttacatatgtatgaaatgaatttattaaggtttatactatetettatgatgttatetecatettattggtgga catgacagagtgtgacatacgtgctggaatgcgtgggcaggactgcacagtcagaagacctggatgggaagaatttcagt tgattatgtcagttgagatgagtcaatatctctgtcttcctatctgacatgattattttcaggatcaaataggacagcat tatatgaaatatgacagtgcttggcatagaggatgtgcttgataaatgtcgctgattctgaattccaaatagttaatgga 80 tataaaatctaatttttattttegetggeacageetteatggtteagatgatetetaaaaagtttattettaattgetac atttggaacattctagttatccatgagactgtgtttgaagtacaacaatttgtggtattcacctaaatggctcagttcaa

agcttagagaatagtattacagtataaaaaagagtaaaacttcataatatgaatagaatacatgacatattgtgagagagg tctaaataaggggttctgagatgtaaagatgggacattgagtccagccctaggagcccaggggttcagagaagcctccct caagggggatatgtgaaataaataagtaaggaacagctcatgaagagcctgtgtgctatgcagggaggcatggtctttat gctagaagcagatgataggaaaccattgaagggctcaaagcaggaactccgtggtctgatagacacagcttatttttctc aatgtccttaacccattattggaaaaataaacatatatcaaatctccctgttctctttcctcgtagttcttcctaatatg ctatttatttgctaaagctttcatatctcaagacctcaccatatggttcaaacgatatgatattcccattcccatgaatg 10 tgtgaggaactggaggaaaaaaatattaaagaatttttgcagagttttgtacatattgtccaaatgttcatcaacacttc gcatttcaaatgtgctgtcaaaacaagtttttctgtcaagaagatgatcagaccttggatcagatgaactcttagaaaatg ttgaaattqtacatatttgtggaataatgtaaaatgttgaataaaatatgtacaagtgttgtttttaagttgcactga 15 tattttacctcttattgcaaaatagcatttgtttaagggtgatagtcaaattatgtattggtgggggctgggtaccaatgc tgcaggtcaacagctatgctggtaggctcctgccagtgtggaaccactgactactggctctcattgacttccttactaag catagcaaacagaggaagaatttgttatcagtaagaaaaagaagtatatatgtgaatcctcttcttatactgtaattt agttattgatgtataaagcaactgttatgaaataaagaaattgcaataactggcatataatgtccatcagtaaatcttgg tggtggtggcaataataaacttctactgataggtagaatggtgtgcaagcttgtccaatcacggattgcaggccacatgc 20 ggcccaggacaactttgaatgtggcccaacacaaattcataaactttcatacatctcgtttttagctcatcagctatcat tagcggtagtgtatttaaagtgtggcccaagacaattcttcttattccaatgtggcccagggaaatcaaaagattggatg cccctggtatagaaaactaatagtgacagtgttcatatttcatgctttcccaaatacaggtattttattttcacattctt tttgccatgtttatataataataaagaaaaccctgttgatttgttggagccattgttatctgacagaaaataattgttt 25 gttcttattgctctagtcaaacggtgcttataaatatctttcagaaagcttaggagaaatctgtatcctatttgacttc aataatca (SEQ ID NO:12279) cggattgggatcggacctacttgattcacttctgggaaatcaaggatctacgtaccatggattttcaggtgcagattttc
agcttcctgctaatcagtgcctcagtcataatgtctagagccaactgggtgaatgtaataagtgatttgaaaaaaattga 30 agatcttattcaatctatgcatattgatgctactttatatacggaaagtgatgttcaccccagttgcaaagtaacagcaa tgaagtgctttctctttggagttacaagttatttcacttgagtccggagatgcaagtattcatgatacagtagaaaatctg atcatcctagcaaacaacagtttgtcttctaatgggaatgtaacagaatctggatgcaaagaatgtgaggaactggagga aaaaaatattaaagaatttttgcagagttttgtacatattgtccaaatgttcatcaacacttcttgattgcaattgattc ctcqaq (SEQ ID NO:12280) aaatcctggctgtcatgtacttgctatgggcctagagtagcttacctaaatgctactaaccttcctccataccattattg ctccctttctttttcttactagtgcacttgtgtttttaatggatcatactttaccctagattgtattgtaggaggcatcg tggatggatggctgctggaaaccccttgccatagccagctcttcttcaatacttaaggatttaccgtggctttgagtaat gagaatttcgaaaccacatttgagaagtatttccatccagtgctacttgtgtttacttctaaacagtcattttctaactg aagetggealteatgtettealtiltgggatgeagetaatataeecagttggeecaaageacetaaeetatagttatataa tctgactctcagttcagttttactctactattgccttcatggtattgggaaccatagatttgtgcagctgtttcagtgca gggcttcctaaaacagaagccaactgggtgaatgtaataagtgatttgaaaaaaattgaagatcttattcaatctatgca tattgatgctactttatatacggaaagtgatgttcaccccagttgcaaagtaacagcaatgaagtgctttctctttggagt tacaagttatttcacttgagtccggagatgcaagtattcatgatacagtagaaaatctgatcatcctagcaaacaacagt taacaaacatcactctgctgcttagacataacaaaacactcggcatttcaaatgtgctgtcaaaacaagtttttctgtca ccqcaccctcccqqctqcqqtqctgtcqcccccaccctgcaqccaggactcgatggagaatccattccaatatatggc catgtqqctctttgqaqcaatgttccatgttccatgctqctqctqctqacqtcacatggaqcacagaaatcaatgttagc 55 ccagctcttcttcaatacttaaggatttaccgtggctttgagtaatgagaatttcgaaaccacatttgagaagtatttcc atccagtgctacttgtgtttacttctaaacagtcattttctaactgaagctggcattcatgtcttcattttgggctgttt cagtgcagggcttcctaaaacagaagccaactgggtgaatgtaataagtgatttgaaaaaaattgaagatcttattcaat ctatgcatattgatgctactttatatacggaaagtgatgttcaccccagttgcaaagtaacagcaatgaagtgctttctc ttggagttacaagttatttcacttgagtccggagatgcaagtattcatgatacagtagaaaatctgatcatcctagcaaa 60 caacagtttgtcttctaatgggaatgtaacagaatctggatgcaaagaatgtgaggaactggaggaaaaaaatattaaag aatttttgcagagttttgtacatattgtccaaatgttcatcaacacttcttgattgcaattgattctttttaaagtgttt ctgttattaacaaacatcactctgctgcttagacataacaaaacactcggcatttaaaatgtgctgtcaaaacaagtttt tctgtcaagaagatgatcagaccttggatcagatgaactcttagaaatgaaggcagaaaaatgtcattgagtaatatagt 65 aaatgttgaataaaaatatgtacaagtgttgttttttaagttgcactgatattttacctcttattgcaaaatagcatttg caataagttacatggttattctccaaagatcttgagatatcacagatgtctgttcacatttggattgttcttattttgaa aataaataggtttttaaaaactctattgaccatcttgataggctcttcttgtcattataaatgtgttatttcacttatcc ttttgaaaggaagcatgaacaattagtggttaaggtggcagttaacactgctttctgaaactttaaaagcttcgacaac tcattttcataatttacatgaagttaatataactattgcatctctgttagtaatgcatgttattaacctgtgctgtataa aatattttgacctattaaaaaagaaagaatgaggaggtcaaagataatataaaaactttaagtggtgacattgg tatgtatgtaaattaacaaatatgtcaactttgttaaattatctttgacatgcatctgcagaaatatctgttaaggaact cagtaattatgacattatgacaaacttacatctttagacctagaaatatgttgacatgttattttaaacctcactttta

tgtttacttctaaacagtcattttctaactgaagctggcattcatgtcttcattttgggggtaattttatctttaggcat aaataacattatgttcatggtcatgatgattgtccttggatatattttccattaaattagtttacgttcagtttgcttat atctctaggtactcagtatctgggggatagaaggcagactacagagatttagagaggtttggtaaacacctaactgagca ggaagtataccacttattgatagactacatatttttcatggcaattaaaagtagatatttagaatttgcttatgttactt aatatacccagttggcccaaagcacctaacctatagttatataatctgactctcagttcagttttactctactaatgcct 10 tcatggtattgggaaccatagatttgtgcaggtaattcttcatcataagacagattagtgttgactatcatgcttctgtg taagatocatcaggaagtgagtgattatttttcctcaagctctaagcatcattccaatgttacttggtcagtataagtgt attitgtctggatattaaattttaattttatgaaatttgtgaaagtgagtaagtatatgatcattcagcctacactgga atgaagtetgtactgtttatggagaaagetgetgeaageatagtaagagtgtgageaacatgaaaggggeatgtttaatg 15 cgggttggtgaagcctcaagttatcataaaatgccaaaattgtactatatgctcaatgtttatgttcagttacaaggctg attcatcaagatgaataggotocttcaaaatgotttgototatggttttctttctttcagotgtttcagtgcagggottccta aaacagaagccaactgggtgaatgtaataagtgatttgaaaaaaattgaagatcttattcaagtgagtactcatttttcc 20 caataatatttttgtagaaatttatgatettataaagetcaaaaagaagtetttteettaetgttttagaatetaattat ctttaaaacgtaatttataagcggcccagacggatgagttctagtctgcacaggtgaggtattctcttctctatctgga gaagccagatatettggtggcacctgcagggagaatggcttgacccagggaacagctgttgttgcttgtggactaaaggc cctcttctcccacctcaagaaaacaggtggcctgacctaaggaagtgatttttgccatagcaggtaataccagcttcagt ggaagtetegatggeaccaagcataccaaaatageaccacaaagttetgaaaactaaattgtcattggaatcacagcatt aaaaaataggttagaacttgcatgctaaatccaaacaacctgactgcatgttaaaatagaagatttaaaataggaccagag tgtcctaacataatagacatgaagccaagatacaattggaaatcacccattgtaacaagaaataggaaagttacaactta aatgaqaaaatataqtcaacaqattacaaaattgaaqtgqatcagatqttqqaattctctctqacataqatttqaaaqcaqa 30 cattataaaaagtgcttgaaaaagcaattacaaatgcccttgaagcaaatgaaaaactaaatgccttaacaaagaaatag aagatatgaaaggaaccatatagaaattatataactgaaaatataactgaaatataaagcaaactgtaaaggctcattag cactgatcttgacgacagtaacaaaagattcagcattcctatggttagtatcacaggagagatatgagaatacaccaagta 35 catacataggttgaaatttaaaaagacagaaaaagatatagcatactataatgggttgaatagtgtccccccaaatttca catcctcttggaaccttaaaatgtgatcttattttgaaataatatttttgcaaatatattaatgaaattaagatgagat catactagagtaggggggccctaaatccaatgacaagtgtctttattagaaaaggaaaaggacacagagtaactcactgg tggctatattaacatcaaagttaatgttattaacataaagtagacttcacagaaaataaagttgctataatccagaggga tattacaaaatgataaaaaataaatetgtgaggaaaacataatgttettaaatgtatacacatcaaacaacgaagaetea aaatttgtgaaacaaaaataatagggataaaagagaaatagacaaatccacaattattcttgaggacttcactgcctcc agaaactttaaaaattttttcagaacttaaatcatgcagaatttgttctcaaaccacaatggaatcaaaccagaaatcaa 45 qaaattaaatacaacqqqcaaatctccaaatqcttqqaaattaaatactatacctctatataatccatqqqtcaaaqaqt aaatctcaaaggatattcataatacatagaatgaaaaaaatgaaatacagcatatcaagatatatgtgatgtggctaaa actgcttcaagaaactagaagaagtagagcaaaacaaattcaatacaagcagaacaaagaaaatatttaaatataagagc 50 caaaattaatgaagttgaaatcaagaaaacaatagaaaaaattaatgaaacataaaactggttatttggaaaatcaatac aattgatetttaattgacagaaataagagagaagacacaaateteaggaatgaaatttgggggetgteactacagaatetg cagtcattagaaggataataagaaaaactatgaacaattttatgctcacaaatctgataacttagaggaaatggaccaat tetteagaaaccacaaactaccaaaacataatgaagatgaaatagacaatecaaacactcatataataataactacatt gaattoatoatacacaagotoccaaaaagggacottoaagootgotggttacactgaatcattotatcaaatatttacag 55 tattactgtgatgctaaaaccaaataaagatattactaaaaaagacaactacaaaaatatctcccattaacttagatatt aaaatgctctataaaatattaacaaatcgaattcagcaatgtataaaaagaattatacaccatgaccgagtgagatttat ttcaggtacacaagtcttgctcaattatttgaaagtcaagcaatgtaatctaccctatcaacaggctaaagaagaaaatc atatgtagaaaaggtatetgataaaatgcaacaceteteatggeetgtgteeeteeetatgeeteetggatttatatgtt 60 gaagtactaattgccagtatatcaaaatgtgactgtattttgagatagggtcagttaaaatgaggtcatgagggcaggtc ctactgcaatatgactggtatctttagaaaaacagataagggtatagatacacagagatagaaaaccatgtgaagacact gggagaaaatggccacctataagccaaggagggaggactccaaagaaaccaacactgctggtaccctgatttcagacctc tagcctcctgaattgtgagaaaataaagttctattatttaagtcaccaagtctgtggtactttttatagcagccctagca gactgatataaacacctattgaagataaaatttcttagaaagtaggtgtggagaactgcctcaacttggtacaaaacatg ttcaaaaagtctagagctaccatacttaatggtgagtacaagactgaatgtttttctgctaggactggaaactaagcagg gatatetteteteaccaettttaeteaacataattgtetgagttttetgttgettataacagagtaettgaaatgcataa tttataaagaaaggaatttatgtcttatggttatgagactgaaaagttcaaggttgaggagccacatctggtgagggcct tcctgctggtgggggctctctggagtccagaggtgacaaaaagcatcactggcgaggggctgaatgtactcatgtgcgtgg gctcaggtctctcttcctcttcttataaaactaccggttccctttccgtaataacacattgatactctaatccattcatg 70 agggcagagccattgtgatccaattacctcttaaagccccacctctcaatactgccacattggggattaagtttcaatct gaattttggaggggacattcaaaccacagcaataatattggaagtttagccaaattatgaagcaggagagaaaaaatgta tgagaaaaaaataaataaaaaggcacacagattggaaaggaaaattatacatcaccccaagtttttttggagagaaagtagt aaaaatgggtatatttttgtttagaaagtaatgcaaattaaaaccacaatgacatattattacatgcagctataagcgtat acagaataaaaaatagtgatgatgctaagtaaatataaatgaacaagggtgataatgctggcaaggatgtgggagaaactg 75 gatcattcatacattgctggtgatgatgtaaaatgatacaggcactgtataaaatagtttggcagcatcctatgaaacaa aacatgcatttgccttacaatccaacaattgtgctcttagacattcatccttgataaatgaaaactacgtgcacacaaaa atatgtacatgaatgttcacagagattttttcatgactgccaaaaactggaaacagatgtgcttcagttggtaaaatctg tgatatatcatgtcagggaatactacagagcaataaaaaggaacaaactagtgatacccacaagttaggtggatctccag ggtattatgatgagtgaaaaaagccagtcttcataaagaaactgtggtacatttataaaatagaatattatccagtgata 80 aaaagaaataagctatcaagccatgaaaagaaatggagaaaccttcaaagtcatattgttgagtgaaagatggggacgcc aatctgaaaaggcttcacactgtatgatcccaactatgacattttgaaaaaggcaaagctatggagacaataaaaagatc agtggttgttagggggtttggagggaaggaaatggctaggcagagcacaggctacttttaaagcagtgaaaatattaat

 $\verb|atatgatgatgggtggcattatacatttgtcaaaacctgtaaaacatacaacacaaataatgagccctaatattctgtac|$ gtggagaacaaaggggtgtataagtctctgtactttctgctagtttttctgtaaacctaaatggctcataaaaatgtcta tcaattcttttaaaagctaatttcagaaggttacatatgatatgagtccgtttacataatattcttgaaatgacaaaatt tgggagaagcttgttgaagggtacacaggatctctctgtatttactcttacagtttcatatgaattttaaattatctcaa aataaaaaagaattaaaaacaatttaatgttttcagtaggttgttctcataatatttaaagcagggcatagtttttaat attgtctaattttgtttcctttcagtctatgcatattgatgctactttatatacggaaagtgatgttcacgtgagtatac ttttttcaaaattgctatttgtcttgttattaaagtttttaaaagtatatttttgtaacaactaaaatatggtagttt aaaatctaacttttggtgtgtttctataatatatggtccatgagttttattagtgattattgagatgggacttggggaca gatagctacatcaatgctatttttgtaatggtgccaaatcaaaatattaaaagagtcttttccatcaatgtcaaacaaga tacattatacgtttttgtgatgcagttgcatcatggtgcaattagatgcaaaaatcagattaactgtttcaatttaagag tagccaatatatcagttatttccaatgctgtaatgtatcaccatctgcaatcatattttccataattgcttaaaatcat tcatqttctqcattttacatqattctctacatttqtcaqaaaaqattctaattattctctatqtqaqaaaqqaaacata acccatgaaacttattagaactgaaaaatggtcttgaacttgtttcattaataccctgacatttcctaaggaatgtagga tttgtcatgttggtggtggttcttcccttcagtattgttactaaaaccaagaaatgaatccccaacttcacgtcagggaa 20 aacaaactctatgtcctctccattattcctcaattagaacttctcttacatagatgactttctaagcattggaaagaa tctggcttcagcatggattctgtttttctttgcattttttgtaaaatggaaagtagtcaattagccaccaaattcagcat cctgaaattgcttttttgcaagaagataactttgcaacccatgggttagagaaacaaccttagattttagattttagatt ttagaagtttagattttaaaactgactccaccactttttacttgtgttaccttggagattgctaaacatttctgaagctc attittattattgctgatatggtgacagtatttgtctttcaatcctaagcagtgactgttgggtttaaggaatattacca gtgctgggcacatgggtgtattccttcattttttttatccattcagtaagcatttgtgaagtgtctgcaggctcccaggt gttaaagtaaatgttgtggaaaacatatttttgtggcacctaagagagccttttctgatttgatctgcctgtaagtggac actagtcctgctttgatttttctaataaatttcttggaattacttctctcccctctggaactttggaacttgaaagaacag 30 tgatgttttcagactctaaggccagtattattaccctttccacaggggaaatgtgctcggtgagaaaaactggccactat ttttatttttagcccagttgcaaagtaacagcaatgaagtgctttctctttggagttacaagttatttcacttgagtccg agatgcaagtatcatgatacagtagaaaatctgatcatcctagcaaacaacagtttgtcttctaatggggtgagttttc ctgttcaatgattgattcagtagacaaacatttacagaataatgccaggtagtgtgcttcagtgctagaattatagttgc aaaccagacagacaggtcactgacctcaaggtgtttattgtcaggtgcagtggatagacattaatctaattacatactca aatgtctaacatcaataatagtaactcacatttattgagttattactgtatgccagacactattctttgagctttaaatt gataattcatttaatcctcatgataaatctgtgagatagttatctttatttctgtttgaatgttgaagaaattgtagcac agagtctgttatctcatgagaagataaatgctttaaaaaagataacaatgaaaatattaatgattcgagtataatctggga catcccaggcaacttgagcagtagagggttccaggagagcaaattctaggtactcgtatgataggctggggaatcagctg tgcaatggccctgaagtgcaaagaattagggctttcatggcaaaacaccagtggccaaagcaaggtagagagaaagcagt ${\tt aagtccagtggtgaaaaaggacacagggtaggggcactggggctccagttagggtaggctgagctaataagctgccattt}$ gacaaagatgtgagagaatgagccttaagggtatctagggacatatgtttaggcagagacaactgaaagtgcaaaggccc taagcttgtgtgggtggacaccttgacttttctctaaaaatacaagactgctttaggtctttgcttcagtgtcaccttctcagtgatttacctatttacagttgcaatcccttctcagtgatcaccttctctgtgtcaccttctctgtgtcaccttctctgtgtcaccttctctgtgtcaccttctctgtgtcaccttctctgtgtcaccttctctgtgtcaccttcttgtgtcaccttcttgtgtcaccttcttgtgtgtcccatatctg gaatatgatatattttatgtaatgggtattgtctgtttttccctactagaatgtcagcttaaaatggacaagtgtttttg tattaaggtttataatactcttatgatgttatctccatcttattggtggaaagagtgagccacgcaacaggtaactcatg qcaaaataaatqatqaqqtctttaatgtqaatqttqataqtcatcctcatcatqacaqagtgtgacatacgtqctggaat gcgtgggcaggactgcacagtcagaagacctggatgggaagaatttcagttgattatgtcagttgagatgagtcaatatc tctgtcttcctatctgacatgattattttcaggatcaaataggacagcattatatgaaatatgacagtgcttggcataga ggatgtgcttgataaatgtcgctgattctgaattccaaatagttaatggatataaaaatctaatttttatttttgctggca caqcettcatggttcagatgatctctaaaaagtttattettaattgctacatttggaacattctagttatccatgagact gtgtttgaagtacaacaatttgtggtattcacctaaatggctcagttcaaccaatgggtgattacagtgtgtcaggccct gtgctaaatgctagggaaacaaacatactggctctgaccttctggcagagagcttagagaatagtattacagtataaaaa gagtaaaacttcataatatgaatagaatacatgacatattgtgagagaggtctaaataaggggttctgagatgtaaagat gggacattgagtecagccctaggagcccaggggttcagagaagcctccctaaaagagtacctgaataatcttaagtgcga gtagcagcagctaaaataggaatgtaacagagagaaaagcaaaggcagagaggcatctaatagtatgctgtgcatg gaacagctcatgaagagcctgtgtgtgctatgcagggaggcatggtctttatgctagaagcagatgataggaaaccattgaa gggctcaaagcaggaactccgtggtctgatagacacagcttatttttctcaatgtccttaacccattattggaaaaataa 70 agacctcaccatatggttcaaacgatatgatattcccattcccatgaatgtatatttaatttaattataaattgccaatt taatctctctctatattttgcagaatgtaacagaatctggatgcaaagaatgtgaggaactggaggaaaaaaatattaaa gaatttttgcagagttttgtacatattgtccaaatgttcatcaacacttcttgattgcaattgattctttttaaagtgtttotgttattaacaaacatcactctgctgcttagacataacaaaacactcggcatttcaaatgtgctgtcaaaacaagttt 75 aaaatgttgaataaaaatatgtacaagtgttgttttttaagttgcactgatattttacctcttattgcaaaatagcattt gtttaagggtgatagtcaaattatgtattggtggggctgggtaccaatgctgcaggtcaacagctatgctggtaggctcc
tgccagtgtggaaccactgactactggctctcattgacttccttactaagcatagcaaacaggaagaatttgttatca
gtaagaaaaagaagaactatatgtgaatcctcttctttatactgtaatttagttattgatgtataaagcaactgttatga aataaagaaattgcaataactggcatataatgtccatcagtaaatcttggtggtggtggcaataataaacttctactgat

gacaattettettattecaatgtggcccagggaaatcaaaagattggatgcccctggtatagaaaactaatagtgacagt gttcatatttcatgctttcccaaatacaggtattttattttcacattctttttgccatgtttatataataataaagaaaa accetgttgatttgttggagccattgttatetgacagaaaataattgtttatattttttgcactacaetgtetaaaatta gcaagctetetetaatggaactgtaagaagatgaaatatttttgttttattataaatttattcaccttaattctggt ctctgttgaaacattcttctatcaccccagtgccctatccatgtacatgtgttcttattgctctagtcaaacggtgctta taaatatotttoagaaagottaggagaaatotgtatootatttgaottocaataatoacggattgggatoggaoctaott gattcacttctgggaaatcaaggatctacgtaccatggattttcaggtgcagattttcagcttcctgctaatcagtgcct cagtcataatgtctagagccaactgggtgaatgtaataagtgatttgaaaaaaattgaagatcttattcaatctatgcat attgatgctactttatatacggaaagtgatgttcaccccagttgcaaagtaacagcaatgaagtgctttctctttggagtt 10 acaagttatttcacttgagtccggagatgcaagtattcatgatacagtagaaaatctgatcatcctagcaaacaacagtt tgtcttctaatgggaatgtaacagaatctggatgcaaagaatgtgaggaactggaggaaaaaaatattaaagaatttttg cagagttttgtacatattgtccaaatgttcatcaacacttcttgattgcaattgattcctcgag (SEQ ID NO:12281) cccagagcagcgctcgccacctccccccggcctgggcagcgctcgcccggggagtccagcggtgtcctgtggagctgccg 15 ccatggccccgcggcgggcgcgcgccggaccctcggtctcccggcgctgctactgctgctgctgctccggccg gcgacgcggggcatcacgtgccctcccccatgtccgtggaacacgcagacatctgggtcaagagctacagcttgtactc cagggagcggtacatttgtaactctggtttcaagcgtaaagccggcacgtccagcctgacggagtgcgtgttgaacaagg ccacgaatgtcgcccactggacaacccccagtctcaaatgcattagagaccctgccctggttcaccaaaggccagcgcca ccctccacagtaacgacggcaggggtgaccccacagccagagagcctctccccttctggaaaagagcccgcagcttcatc tcccagctcaaacaacagcggccacaacagcagctattgtcccgggctcccagctgatgccttcaaaatcaccttccacagggaaccacagagataagcagtcatgagtcctcccacggcaccccctctcagacaacagccaagaactgggaactcaca 20 gcatccgcctcccaccagccgccaggtgtgtatccacagggccacagcgacaccactgtggctatctccacgtccactgt cctgctgtgtgggctgagcgctgtgtctctcctggcatgctacctcaagtcaaggcaaactcccccgctggccagcgttg ccagcttcccaggagagaccaaaggcttctgagcaggatttttatttcattacagtgtgagctgcctggaatacatgtgg taatgaaataaaaccctgccccgaatcttccgtccctcatcctaacttgcagttcacagagaaaaagtgacatacccaaa getetetetetetaatetacaaggetteteetggegtagaegtetaeaggaagaegetetteggetetteggetetaaceagegtttgggettetaaceace etgteteeagetgetetgeacacatggacagggacetgggaaaggtgggagagatgetgageccagegaatectetecat 30 tgaaggattcaggaagaagaaactcaactcagtgccattttacgaatatatgcgtttatatttatacttccttgtctat tatatctatacattatatattatttgtattttgacattgtaccttgtataaacaaaataaaacatctattttcaatattt ttaaaatgca (SEQ ID NO:12282) 35 atgcctgacctcaactcctccactgactctgcagcctcagcctctgcagccagtgatgtttctgtagaatctacagcaga ggccacagtctgcacggtgacactggagaagatgtcggcagggctgggcttcagcctggaaggagggaagggctccctac acggagacaagcccctcaccattaacaggattttcaaaggagcagcctcagaacaaagtgagacagtccagcctggagat gaaatcttgcagctgggtggcactgccatgcagggcctcacacggtttgaagcctggaacatcatcaaggcactgcctga tggacctgtcacgattgtcatcaggagaaaaagcctccagtccaaggaaaccacagctgctggagactcctag (SEQ ID NO:12283) 40 cagagaatcagctcctttgaaacctttggctcctctcaactgcctgacaaaggagcccagagactgagcctccagccctc 50 ctctqqqqaqgcaqcaaaacctcttqqqaagcatqaqgaaggacggttttctggactcttqqqqaggaggggctgcaccca ctcttgtgccccagcagcctgagcaagtactgtcctcggggtcccctgcagcctccgaggccagagacccaggtgtgtct qagtcccctcccccagggcggcagcccaatcagaaaactttcccccctggcccggacccgctcctaaggctgctgtcaac acaggetgaggaateteaaggeecagtgeteaagatgeetageeagegageacggagetteeceectgaceaggteeeagt cctgtgagacgaagctacttgacgaaaagaccagcaaactctattctatcagcagccaagtgtcatcggctgtcatgaaa 55 tecttgetgtgeettecatettetateteetgtgeecagacteeetgcatececaaggeaggggcatetecaacateate atccaacgaagactcagctgcaaatggttctgctgaaacatctgccttggacacggggttctcgctcaacctttcagagc tgagagaatatacagagggteteacggaagccaaggaagacgatgatggggaccacagttecetteagtetggteagtee gttatctccctgctgagctcagaagaattaaaaaactcatcgaggaggtgaaggttctggatgaagcaacattaaagca attagacggcatccatgtcaccatcttacacaaggaggaaggtgctggtcttgggttcagcttggcaggaggaggagcagatc 60 tagaaaacaaggtgattacggttcacagagtgtttccaaatgggctggcctcccaggaagggactattcagaagggcaat gaggttetttecateaacggcaagteteteaaggggaceacgcaccatgatgeettggccateetecgecaagetcgaga gcccaggcaagctgtgattgtcacaaggaagctgactccagaggccatgcccgacctcaactcctccactgactctgcag 65 gggcagctgatacaaattgcagactgtgtaaaagagagcttaatgatatattgtggtgcacaaataaaatggattt attagaattccatatgacattcatgcctggcttcgcaaaatgtttcaagtactgtaactgtgtcatgattcacccccaaa cagtgacatttatttttctcatgaatctgcaatgtgggcagagattggaatgggcagctcatctctgtcccacttggcat cagctggcgtcatgcaaagtcatgcaaaggctgggaccacctgagatcattcactcatacatctggccgttgatgttggc tgggaactcacctggggctgctggactgaatgcttataggtggcctctccttgtggcctgggctcctcacaacatggtgt ctggattcccaggatgagcatcccaggatcgcaagagccacgtagaagctgcatcttgtttatacctttgccttggaagt tagggaaggstggtggagccagtaaatagaggagtacaggtgaagcaccaagctcaaagcgtggacaggtgtgccgacag atgoctgaceteaactectecactgactetgcagecteagectetgcagecagtgatgtttctgtagaatetacageaga ggccacagtctgcacggtgacactggagaagatgtcggcagggcttgggcttcagcctggaagggaagggaagggctccctac

acggagacaagcccctcaccattaacaggattttcaaaggagcagcctcagaacaaagtgagacagtccagcctggagat

gaaatcttgcagctgggtggcactgccatgcagggcctcacacggtttgaagcctggaacatcatcaaggcactgcctga tggacctgtcacgattgtcatcaggagaaaaagcctccagtccaaggaaaccacagctgctggagactcctagtgcttaa tagtttacaccacaggaagcgagagagctgctgccactgctgctaccacaggaagacacagcagggagaagccctagtgc ctctgccggctgcccaggacctggtatcggcccacagaccaagtcctccacagaggcgagccagggtggagaagagcca gcctetacagcccaatgccagcctgaatgaagaagaagggacacaggggcacccagatgggaccccaccaaagctggaca ccgccaatggcactcccaaagtttacaagtcagcagcagcactgtgaagaaaggtcctcctgtggctcccaagcca 10 gcctggtttogccaaagcttgaaaggtttgaggaatcgtgcttcagagccaagagggctccctgatcctgccttgtccac ccagecageacetgettecagggageacetaggateacatacgggeeteeteeteeteeteeteeteeateaggeagagaa teageteetttgaaacetttggeteeteteaactgeetgacaaaggageeeagagactgageeteeageeeteetetggg gaggcagcaaaacctcttgggaagcatgaggaaggacggttttetggactcttggggggagggctgcacccactcttgt gccccagcagcctgagcaagtactgtcctcggggtccccttgcagcctccgagggccagagacccaggtgtgtctgagtccc ctccccagggcgcagccaatcagaaaactttccccctggcccggacccgctcctaaggctgctgtcaacacaggct gaggaatctcaaggcccagtgctcaagatgcctagccagcgagcacggagcttcccctgaccaggtcccagtcctgtga gacgaagctacttgacgaaaagaccagcaaactctattctatcagcagccaagtgtcatcggctgtcatgaaatccttgc tgtgccttccatcttctatctcctgtgcccagactccctgcatccccaaggcagggcatctccaacatcatccaac gaagactcagctgcaaatggttctgctgaaacatctgccttggacacggggttctcgctcaacctttcagagctgagaga atatacagagggtetcaeggaagccaaggaagacgatgatggggaccacagttecetteagtetggteagteegttatet ccctgctgagctcagaagaattaaaaaaactcatcgaggaggtgaaggtrctggatgaagcaacattaaagcaattagac ggcatccatgtcaccatcttacacaaggaggaaggtgctggtcttgggttcagcttggcaggaggagcaagatctagaaaacaaggtgattacggttcacagagtgtttccaaatgggctggcctcccaggaagggactattcagaagggcaatgaggttc tttccatcaacggcaagtctctcaaggggaccacgcaccatgatgccttggccatcctcgccaagctcgagagcccaggcaagctgtgtgttgtcacaaggaagctgactccagaggccatgccgacctcaactcctccactgactctgcagcctcagc ctctgcagccagtgatgtttctgtagaatctacagcagaggccacagtctgcacggtgacactggagaagatgtcggcaggggttgacactggaagaagatgtcggcaggggcttcagcctctcaccaggagacaagcctctcacacggagattttcaaagga gcagcctcagaacaaagtgagacagtccagcctggagatgaaatcttgcagctgggtggcactgccatgcagggcctcac acggtttgaagcctggaacatcatcaaggcactgcctgatggacctgtcacgattgtcatcaggagaaaaaagcctccagt 30 ccaaggaaaccacagctgctggagactcctaggcaggacatgctgaagccaaagccaataacacacagctaacacacagc teccataacegetgatteteagggtetetgetgeegeeecaceagatgggggaaageacaggtgggetteccagtgget gctgcccaggcccagaccttctaggacgccacccagcaaaaggttgttcctaaaataagggcagagtcacactggggcag ctgatacaaattgcagactgtgtaaaaagagagcttaatgataatattgtggtgccacaaataaaatggatttattagaa ttccatatgacattcatgcctggcttcgcaaaatgtttcaagtactgtaactgtgtcatgattcacccccaaacagtgac atttatttttctcatgaatctgcaatgtgggcagagattggaatgggcagctcatctctgtcccacttggcatcagctgg tcacctggggctgctggcctgaatgcttataggtggcctctccttgtggcctgggctcctcacaacatggtgtctggatt cccaggatgagcatcccaggatcgcaagagccacgtagaagctgcatcttgtttatacctttgccttggaagttgcatgg actgagcattaattccatgctaagtactgaactcagcactaggaataagaaggcgacctagaggcatatcctctctaa agatgcatagagcctcattggaatgatcagccgtgtctccagagagctacaaggcagttttcaattggtaaatgccctga gagtgatgggcttgtggcatgtgtaagggttagacagacctgggacctagacatgacaccactcctgacgaattatgtga gtgtgggtgtttcacaaccacaatgagatgcaatgcctgcacttgtaacatggaaatagtgatggcatgccccgcagatt gctgtgagaagtcagcggcagagacatgcaacattctcagcacagtgcttgccatgtagtaagggcctagtcagtgctag 50 aaaccaagaaaagaggaggcggtgttgcaggaacagtgagcagttgatgatttttattttgttctctggtctgcttggga acatttttgtggcaaagacagcatgaaggatagcgaagaattaatactgaaggataggccagggcaggttatgaaggat tttgaataccgggctaagaaatgtgggcttaatttcaaagacattatggacactcctaaaatgttacgttgtagataagg gaaaagtattcttccagaagattaaattggggctgggcacggtggctcacgcctgtgatcccagcactttgggaggcgaa gaatccttgtcctgggccgcattggtaactcatcagtgctggcttgagagaataaactctattatcaatccctgaactaa aatcatgacagaagtggccagggagctttgctgctatccccaggaaacaacgtcctccactcaatggaaagaggaccc tctgacaacatctgtgggacccaacagcactggtcaccacaagccacaaaatgttaacaaagtcagttttcaattgttag ggacggaggactcagttcatgattcatacaaaccaactgttctctcccagtgttttctgggtggcacaacccacaagtca acagtggcttgggaactagacatttgagtagagttgggttatttgattcatagtggattttggttttccacgggacccct gtgcccttgtctagtagaatctggtggaaattacaaactgcagaaattcaactcagtgccgcaataacaggatgcacctg tagatttcgtagaattagcagcagcattctttcaataccagtttgagagaaataaccctgtttgcatagtgccaactggg gcagaatctgaagtgtcttgcctgcctctcggccatgggaggcaccgatctcagcaacatctatccaaccgccatccact taacaagcaaagatggaaggccctcgtgctccaggctatcctgcaatggttcatttgcttttgatgggattatcactttg 70 acagatgtgcttgcaattaactgggggctttctgcttccaatccaaattcccacaggtggatcactggctctttggggagc aaaaacccttctttgtttgtttttgcttctcccagagcctgggcagagctccccattcctggatcctacgttgatatgca ctgaattgaattatactaaagggtgcacccaagagtgcatgagctaagtaaaatgtaatttgtgggacctcatgtggaca tttcaggtccatgtgtacaagataaaggagagaaaatcctgggggacaccacaggcctgggaaaatgacctcctactaag cctaacaagaacatccagtacataaacagcaggctctctgcaaccgcttcggtccttccactgccacgctcccagaaagc 75 atgagagagtgaggctgctttcatgtggtgccagcgtatagtgcagggcaggcctgattgctgaacggatccctgcagac gtgagcggtcacttccccttttgagggcccatttctttcctctttgaggagactgtgagcgtcctcagtgcagggctat gttttagcttcttggctctcctcacaggttctagcataattctttgattaattgcagtcaacgtttattgatggattatg 80

gagaaaccccattattcgtggactaaacaggcttcccactagtcctggctcacagaggaagtcatgctccatgtttcaaa tgtcctcaaagctcgttcaactccaaaatgcatgaagacaaaatgggaattttactcaagatttttgtgggctgttgggg agaagagttaacattgcaaagcatattgcaaactcttatcttcaaatgattttaaaattttcttccaagctctttattat ttctccagagctgccctgctcttcccactctgggtcctttctctgccactctcctcagcatgacttctccctaatcggcc agcatttcttttattctatagagcaagttttcttgccctgggcacctctcatttgcatgttataccaccacaccaagtga gcctcagagcaccagtgttttaatccctgaaaacagtccttacgggattcagcacagaggtcctcttggcagcctgtagt ctccagagtgacacgtcctcaacagtcaaagtgagcaagctatggtgcccatcaccaagtggggctcaccatttccctct ccaagtagetggaattacaggcatgtgccaccaagcccggcaaatttttgtatttttagtagagacagggtttcaccatg agecategigeteggeeggttetatgggeattgiggaagtgacegttaacaageceeaagggiaagitaaaggaaaatgaa aggtgattgattcctcaccacctctccccttttttcctctactctttgcccctgctccccaatctagactctaataaaca 15 gaaatgatitttgttgcaagctgaaaactcgttcttgtggttggggciaggggggtggcaagtcaagctttagagttgtc tcacaaatgetaetgeetetetgeeateeeetaaceteageeteacaeaettgaatttegeeaateeatttgatgagete aaatcagtgaattttctcctcgccaaagctcacaaattctgttccccgcttcttgccccacatccaggcattaccaactg 20 ttccttcctgaagagtatttcagcatctctatgcctcaatcttccctgcacaccaccaccagctcggcctcatcatcacat tacttggctatgtcccgcctgggttagacagcttcagtggctgaagtccatagatcttattctgtttttcgaggtccacc tgactetgaatecagetgacatttetgeeettagettetacecetetetaettetggttaactatggaccacactetget tecteaggaaceacetaceaaggeegtateeateetteaaggaeaataegtgggeettteetgateacateageteaaea 25 cttgcagcaggtttgaaacaaaactttgaatttgcctcacaaagaatttgtctgaaactgctttagtatatgctagttat 30 attigtatgcacatgtggcttcatacatagtggttggacacccatatgtgttatgcactttgttaggtgacgtaagttca cagataaactggaacatagggctatcctctagaggcccacagtttgacaccttaacctgagatccttggacctttgaagt tcagagtgcccacaaccgctgggtgtggttgactcacacttgtaatcccagtactctgcagggctgaggtgggaggatcgc ttgagtccaggagtctgagaccagcctgggcaacatgacaaaaaccccatctctacaaaaaattacaaaaaaattagccag gcctggtggtgcatgcctgtggtcccagttacttgagaggctgaagtgggaggatcacttgagtcaaggaggtagaggct aatgctcctgaaacttcctacggatttatccagagtatgtgctgatgtgcattttttccaaggagggaaaccaaaggttc tatcaaattaagaaaagagtttttaccattgtggaagacagtatggcgattcctcaagcatctaaaatcagaaataccat ttgacccagcaatcctattactgggtatatacccaaaggaatagaaatcattctactataaagtcacatgcaaccgtatg tttattgcagcactatttacaatagcaaaatggaaccaactgaaatgcccatcaatgagactagataaagaaaatgtgat acatatacaccatggaatactatgcagccatgaaaaggaatgagatcacgtccttggcagggacatggatgaagctggaa 45 tggaaacctcagcgtcagcaaacgacgacagagcgttcatccgtaaggtgaaccagaaaagccagttcaatgacttgttt aaccatggtccatctcagaaccaagagttgggcctctatttaccagaaaaattgtgggggctttgtgatatggctttaa 50 aaggtcaggagttcgagaccagcctgaccaacatggtgaaactccgtctctactaaaaaatacaaaaactagctggatgtg gtgacgcgtgcctgtaatcctagctactcaggaggctgacgcaggagaatcacttgaacctgggaggcagaggttgcagt cacattaactacttaaagcataagctattttecaggagaggcagcaagtgcattctactcccatgcccaagaagaaagga gcgtgactttggtgggagtactaggagtttctactggagcacttgcccgcagagtgagaaacgttcctagagaggaagtt atacctgctgtggaatttaagagaatcttgtcatattttgacaagttttttgagatggaagtctcactctgtcgcccagg ctggagtgcagtggcgcaatctcagctcactgcagcctgcacctcctcggttccagctattctcttgtctcagcctcctg agtaactgggattacaggcgcccgccactacgcctggctaatttttgtatttttagtagaaatggggttttaccatgttg gatectteagttegeegeatectteteeattatttgaatattggaggetgeetgaeeagaatettgteaqqaetttgete agaccactgccaagaagtgcttgctcaccctaccttcaacggcaggggaatctcctctctttatgggcgtagctga 70 agagagtgctaggcagtttcctggctgaacacgccagcccaatacttaaagagagcaactcctgactccgatagagactg gatggacccacaagggtgacagcccaggeggacegatettcccateccacatectccggegegatgecaaaaagaggetg acggcaactgggccttctgcagagaaagacctccgcttcactgccccggctggtcccaagggtcaggaagatggattcat .75 ttc (SEQ ID NO:12286) atcctCcggCgcgatgccaaaaagaggctgacggcaactgggccttctgcagagaaagacctccgcttcactgccccggc tggtcccaagggtcaggaagatggattcatacctgctgatgtggggactgctcacgttcatcatggtgcctggctgccag gaactgtgaatgcaagagaggtttccgcagaataaaaagcgggtcactctatatgctctgtacaggaaactctagccactcgtcctgggacaaccaatgtcaatgcacagctctgccactcgggacaaccaatgtcaatgcacaagctctgccactcggaacacaacgaaacaagtgacacctcaacctgaagaa

cagaaagaaaggaaaaccacagaaatgcaaagtccaatgcagccagtggaccaagcgagccttccaggtcactgcagggaacctccaccatgggaaaatgaagccacagagagaatttatcatttcgtggtggggcagatggtttattatcagtgcgtcc tggcagcggagacagaggaagagtagaagaacaatctagaaaaccaaaagaacaagaatttctttggtaagaagccgggaa cagacaacagaagtcatgaagcccaagtgaaatcaaaggtgctaaatggtcgcccaggagacatccgttgtgcttgcctg cgttttggaagctctgaagtcacatcacaggacacggggcagtggcaaccttgtctctatgccagctcagtcccatcaga 10 gagcgagcgctacccacttctaaatagcaatttcgccgttgaagaggaagggcaaaaccactagaactctccatcttatt tctaccctatacaactggacattgtctgcgtggttcctttctcagccgcttctgactgctgattctcccgttcacgttgc ctaataaacatccttcaagaactctgggctgctacccagaaatcattttacccttggctcaatcctctaagctaaccccc ttctactgagccttcagtcttgaatttctaaaaacagaggccatggcagaataatctttgggtaacttcaaaacggggc aatttgatgtttacaggtggacacacaaggtgcaaatcaatgcgtacgtttcctgagaagtgtctaaaaacaccaaaaag tagaacgtaaccacggaaaagagcgcatcaggcctggcacggtggctcaggcctataaccccagctccctaggagaccaa ggcgggagcatctcttgaggccaggagtttgagaccagcctgggcagcatagcaagacacatccctacaaaaaattagaa attggctggatgtggtggcatacgcctgtagtcctagccactcaggaggctgaggcaggaggattgcttgagcccaggag ttcgaggctgcagtcagtcatgatggcaccactgcactccagcctgggcaacagagcaagatcctgtctttaaggaaaaa aagacaagggaattc (SEQ ID NO:12287) atttaccctgatgtgattattatacattgtatgcctgtatcaaaatagctcatgtgcctcatgaatatagacacctacca catgcccacaaaattaaaaactaaaaaaaacagtcatctctgaatgctaaacggagtaagggcttcctggaaggctggg 30 cctgggtgettgaggagtttcaggetttctcataagcetegteteccegcetetecacaaggeettgeeeetetatee tctgcacaggaagtgggctggctctgggcttttagtctttgcggccccagcagcagcagagctcagcagggccctggagaga gcctccctcccggcccctgtggaccagccagagggctgggagtgaaagtcacagagaagactttcagctctgactcagtt ccccagcagtttctgcctgaactcccatccccaactttgtcttagaattc (SEQ ID NO:12288) gaagagcaagcgccatgttgaagccatcattaccattcacatccctettattcctgcagctgcccctgctgggagtgggg ctgaacacgacaattctgacgcccaatgggaatgaagacaccacagctgatttcttcctgaccactatgcccactgactc cctcagtgtttccactctgcccctcccagaggttcagtgttttgtgttcaatgtcgagtacatgaattgcacttggaaca gcagctctgagccccagcctaccaacctcactctgcattattggtacaagaactcggataatgataaagtccagaagtgc agecactatetatetetetgaagaaateaettetggetgteagttgeaaaaaaaggagateeaeetetaceaaaeatttgt tgtteageteeaggaceeaegggaaeeeaggagaeaggeeaeaeagatgetaaaaetgeagaatetggtgateeeetggg tgcgtctcatactcacctcaccccactgtggctgatttggaatttgtgcccccatgtaagcaccccttcatttggcatt 55 cctccctccctctttccctcccttcctcttccatctaccctccgattgttcctgaaccgatgagaaataaagtttctgt tgataatcatc (SEQ ID NO:12289) gagagactggatggacccacaagggtgacagcccaggcggaccgatcttcccatcccacatcctccggcgcgatgccaaa aagaggetgaeggeaactgggeettetgeagagaaagaeeteegetteactgeeeeggetggteecaagggteaggaaga 60 tggattcatacctgctgatgtggggactgctcacgttcatcatggtgcctggctgccaggcagagctctgtgacgatgac tectgagagtgagaetteetgeetegteacaacaacagatttteaaatacagacagaaatggetgeaaccatggagaegt tgcctaataaacatccttcaagaactetgggetgctacccagaaatcattttacccttggctcaatcctctaagctaacc cccttccactgagccttcagtcttgaatttctaaaaaacagaggccatggcagaataatctttgggtaacttcaaaacgg gaatteteaggateetteagttegeegeateetteteeattatttgaatattggaggetgeetgaceagaatettgteag gactttgeteetteateecaggtggteecggetgaeteetgaggaegttaeageectgaggggaggaeteageettatga agtgctgggtgagaccactgccaagaagtgcttgctcaccctaccttcaacggcaggggaatctccctctcttttatgg gcgtagtgaagaaaggattcataaatgaagttcaatccttctcatcaaccccagcccacacctccagcaattgaacttga

agatgagagaagagagtgctaggcagtttcctggctgaacacgccagcccaatacttaaagagagcaactcctgactccg aaagaggctgacggcaactgggccttctgcagagaaagacctccgcttcactgccccggctggtcccaagggtcaggaag gcccccggaattc (SEQ ID NO:12291) gagetetgtgaegatgaeeegeeagagateeeacaegeeacatteaaageeatggeetacaaggaaggaaccatgttgaa ctgtgaatgcaagaggtttccgcagaataaaaagcgggtcactctatatgctctgtacaggaaactctagccactcgt cctgggacaaccaatgtcaatgcacagctctgccactcggaacacaacgaaacaagtgacacctcaacctgaagaacag aaagaaaggaaaaccacagaaatgcaaagtccaatgcagcagtggaccaagcgagccttccaggtcactgcaaggaacc tccaccatgggaaaatgaagccacagagagaatttatcatttcgtggtggggcagatggtttattatcagtgcgtccagg gatacagggetetacacagaggteetgetgagagegtetgeaaaatgaeeeaegggaagacaaggtggaeeeageeeeag ctcatatgcacaggtgaaatggagaccagtcagtttccaggtgaagagaagcctcaggcaagcccgaaggccgtcctga ttacaacagagtaccaggtagcagtggccggctgtgttttcctgctgatcagcgtcctcctcctgagtgggctcacctgg . cagcagagacagaggaagagtagaagaacaatctag (SEQ ID NO:12292) gaattctcaggatccttcagttcgccgcatccttctccattatttgaatattggaggctgcctgaccagaatcttgtcag 20 agagactggatggacccacaagggtgacagccaggcggaccgatcttcccatcccactcctccggcgcgatgccaaaa agaggctgacggcaactgggccttctgcagagaaagacctccgcttcactgcccggctggtcccaagggtcaggaagat 25 gaattcatgccacaactgagtgattttttttttttccaaacccaattccacaaagtaaaagcctgatgaaatacagtgaag actgagcattaattecatgetaagtaetgaaeteageaetaggaataagaaggegaeetagaggeatateetetetaa agatgcatagagcctcattggaatgatcagccgtgtctccagagagctacaaggcagttttcaattggtaaatgccctga gtgtgggtgtttcacaaccacaatgagatgcaatgcctgcacttgtaacatggaaatagtgatggcatgcccggcagatt gctgtgagaagtcagcggcagagacatgcaacattctcagcacagtgcttgccatgtagtaagggcctagtcagtgctag aaaccaagaaaagaggaggcggtgttgcaggaacagtgagcagttgatgatttttattttgttctctggtctgcttggga 35 acatttttgtggcaaagacagcatgaaggatagcgaagaattaatactgaagagataggccagggcaggttatgaaggat tttgaataccgggctaagaaatgtgggcttaatttcaaagacattatggacactcctaaaatgttacgttgtagataagg gaaaagtattcttccagaagattaaattggggctgggcacggtggctcacgcctgtgatcccagcactttgggaggcgaa gaatcottggcotgggcocattggtaactcatctctcttgcaagatcatagatcatggcttggcttgaagtgg gaatcottggcotgggcocattggtaactcatcagtgctggcttgaggataaactctattatcatccctgaactaa aatcatgacagaagtggccagggagctttgctgctatcccccaggaaacacgtcctccactcaaatggaaagaggaccc tctgacaacatctgtgggacccaacagcactggtcaccacaagccacaaaatgttaacaaagtcagttttcaattgttag ggacggaggactcagttcatgattcatacaaaccaactgttctctcccagtgttttctgggtggcacaacccacaagtca acagtggcttgggaactagacatttgagtagagttgggttatttgattcatagtggattttggttttccacgggacccct gtgcccttgtctagtagaatctggtggaaattacaaactgcagaaattcaactcagtgccgcaataacaggatgcacctg tagatttcgtagaattagcagcagcattctttcaataccagtttgagagaaataaccctgtttgcatagtgccaactggg 50 gcagaatctgaagtgtcttgcctgcctctcggccatgggaggcaccgatctcagcaacatctatccaaccgccatccact taacaagcaaagatggaaggccctcgtgctccaggctatcctgcaatggttcatttgcttttgatgggattatcactttg acagatgtgcttgcaattaactgggggctttctgcttccaatccaaattcccacaggtggatcactggctcttggggagc aaaaacccttctttgtttgtttttgcttctcccagagcctgggcagagctccccattccttggatcctacgttgatatgca ctgaattgaattatactaaagggtgcacccaagagtgcatgagctaagtaaatgtaatttgtgggacctcatgtggacatttcaggtccatgtgtacaagataaaggagagaaaatcctgggggacaccacaggcctgggaaaatgacctcctactaag atgagagagtgaggctgctttcatgtggtgccagcgtatagtgcagggcaggcctgattgctgaacggatccctgcagacgtgagggcactctcagtgcagggctat 60 tttttagaggcgaggtcttgctctgtggcctggctggagtgcagtggtgcaatcatagctcattgcagccttgacctcc
tggggtcaagcgaacctcaacgtcttggcctcctgagtagctgagactataggcatgcgccaccacgctcagcttcacct tttcctttccttgtgctcccctggcagatatgctggtaaacaatgaaccagtcaagaggacagcaacaggaggaaaatgg 65 gagaaaccccattattcgtggactaaacaggcttcccactagtcctggctcacagaggaagtcatgctccatgtttcaaa tgtcctcaaagctcgttcaactccaaaatgcatgaagacaaaatgggaattttactcaagatttttgtgggctgtttgggg agaagagttaacattgcaaagcatattgcaaactcttatcttcaaatgattttaaaattttcttccaagctctttattat ttctccagagctgccctgctcttcccactctgggtcctttctctgccactctcctcagcatgacttctccctaatcggcc agcatttctttattctatagagcaagttttcttgccctgggcacctctcatttgcatgttataccaccacaccaagtga 70 gcctcagagcaccagtgttttaatccctgaaaacagtccttacgggattcagcacagaggtcctcttggcagcctgtagt ctccagagtgacacgtcctcaacagtcaaagtgagcaagctatggtgcccatcaccaagtggggctcaccatttccctct aggetggegtgeageggtgtgatettggeteactgeaateteeaceteetaggtteaageaagteteetgeettageete ccaagtagctggaattacaggcatgtgccaccaagcccggcaaatttttgtattttagtagagacagggtttcaccatg ttggccaggctggtctcaaactcctgacctcaggtgatctgcctccggcctcccaaagtgctgggataacaggcgtg aggatgatttttgttgcaagctgaaaactcgttcttgtggttggggctaggggggtggcaagtcaagctttagagttgtc tggataataaatgctgtcttcaaggactgtccaacattgtaggaacaagagaacaacccaagtgaacaactcatcctgt 80 teacaaatgetactgectetetgecateccetaaceteageeteacacattgaatttegecaatecatttgatgagete
aaatcagtgaatttteteetegecaaageteacaaattetgtteecegettettgececacatecaggeattaccaactg

tacttggctatgtcccgcctgggttagacagcttcagtggctgaagtccatagatcttattctgtttttcgaggtccacc tgactctgaatccagctgacatttctgcccttagcttctacccctctctacttctggttaactatggaccacactctgct tecteaggaaceacetaceaggeegtatecateetteaaggacaataegtgggeettteetgateacateageteaaca gtcttaaacctaagggaaggcagtctaggtcagaaatttgttgtccgctgttctgagcagtttcttctaggaagtaccaa acatttctgataatagaattgagcaatttcctgatgaagtgagactcagcttgcactgttgaccggctgtcctggatgaa cctagttacttttaaccaaatgttcctttcttgaacttgttcctttcttgaacttaatctatcaatgttatctagataac cttgcagcaggtttgaaacaaaactttgaatttgcctcacaaagaatttgtctgaaactgctttagtatatgctagttat atttgtatgcacatgtggcttcatacatagtggttggacacccatatgtgttatgcactttgttaggtgacgtaagttca cagataaactggaacatagggctatcctctagaggcccacagtttgacaccttaacctgagatccttggacctttgaagt tcagagtgcccacaaccgctgggtgtggtggctcacacttgtaatcccagtactctgcagggctgaggtgggaggatcgc ttgagtccaggagtctgagaccagcctgggcaacatgacaaaaaccccatctctacaaaaaattacaaaaaattagccag 15 gcctqqtqqtqcatqcctqtqgtcccaqttacttqaqaqqctqaaqtgggaqqatcacttqaqtcaaqqaqqtaqaggct aatgctcctgaaacttcctacggatttatccagagtatgtgctgatgtgcattttttccaaggagggaaaccaaaggttc tatcaaattaagaaaagagtttttaccattgtggaagacagtatggcgattcctcaagcatctaaaatcagaaataccat 20 ttgacccagcaatcctattactgggtatatacccaaaggaatagaaatcattctactataaagtcacatgcaaccgtatg tttattgcagcactatttacaatagcaaaatggaaccaactgaaatgcccatcaatgagactagataaagaaaatgtgat acatatacaccatggaatactatgcagccatgaaaaggaatgagatcacgtccttggcagggacatggatgaagctggaa 25 atataaacagtgaattgcaatgcagcacggcaggtgttatgatggagtagaaaggactggaaaaggcctcctggaggaag ggacactcaagtgtctttccattttaacctgtaaactcattaagggcaaaagctttgctacagctttagtatgagatcctg ggcaatccgtgacaaaatgggtctgcttttgcaccccaacttcttctcacatccctgcatcgtgccatgcatcaac tggaaacctcagcgtcagcaaacgacgacagaggttcatccgtaaggtgaaccagaaaagccagttcaatgacttgttt aaccatggtccatctcagaaccaagagttgggcctcttatttaccagaaaaattgtgggggctttgtgatatggctttaa aaggtcaggagttcgagaccagcctgaccaacatggtgaaactccgtctctactaaaaatacaaaaaactagctggatgtg gtgacgcgtgcctgtaatcctagctactcaggaggctgacgcaggagaatcacttgaacctgggaggcagaggttgcagt 35 agtaactgggattacaggcgccgccactacgcctggctaatttttgtatttttagtagaaatggggttttaccatgttg cactgcgcctggctaattttttttttttttttttttagtagagacggtggtttcaccatgtcatccaggctggtctcaa actectgaecteaggtgatecaeceaecttggtetaecaaagtgeteggattaeaggeatgagecaecaggeecagteaa 45 atttaaaaaattgtgttttgctctaactatgcaatggctttaagtcttagacaaatttccagggagcaaaacacactcaa ${\tt accasagcccactttttgcatgatcctttaagagaaagaaatctggaagcaaaacaccttataaaatgacaatgcacttt}$ gateetteagttegeegeateetteteeattatttgaatattggaggetgeetgaeeagaatettgteaggaetttgete cttcatcccaggtggtcccggctgactcctgaggacgttacagccctgaggggaggactcagcttatgaagtgctgggtg agaccactgccaagaagtgcttgctcaccctaccttcaacggcagggaatctcccttcccttttatgggcgtagctgaa agagagtgctaggcagtttcctggctgaacacgccagcccaatacttaaagagagcaactcctgactccgatagagactg gatggaccacaagggtgacagccaggacgaatcttccaatccacatcctcggggggatgccaaaaagggttg acggcaactgggccttctgcagagaaagacctccgcttcactgccccggctggtcccaaagggtcaggaagatggattcat 55 cacatcctccggcgcgatgccaaaaagaggctgacggcaactgggccttctgcagagaaagacctccgcttcactgcccc 60 ggctggtcccaagggtcaggaagatggattcatacctgctgatgtggggactgctcacgttcatcatggtgcctggctgc caggcagagetetgtgaegatgaeeegeeagagateeeacaegeeacatteaaageeatggeetaeaaggaaggaaeeat gttgaactgtgaatgcaagagaggtttccgcagaataaaaagcgggtcactctatatgctctgtacaggaaactctagcc actegteetgggacaaccaatgtcaatgcacaagetetgecacteggaacacaacgaaacaagtgacacetcaacetgaa gaacagaaagaaaggaaaaccacagaaatgcaaagtccaatgcagccagtggaccaagcgagccttccaggtcactgcag 65 ggaacetecaceatgggaaaatgaagecacagagagaatttateatttegtgggtggggeagatggtttattateagtgeg tccagggatacagggctctacacagaggtcctgctgagagcgtctgcaaaatgacccacgggaagacaaggtggacccag ccatatttacaacagagtaccaggtagcagtggccggctgtgttttcctgctgatcagcgtctcctcctgagtgggctc 70 ${\tt acctggcagcggagacagaggaagagtagaagaacaatctagaaaaccaaaagaactatcttggtaagaagccgg}$ gaacagacaacagaagtcatgaagcccaagtgaaatcaaaggtgctaaatggtcgcccaggagacatccgttgtgcttgc ctgcgttttggaagctctgaagtcacatcacaggacacggggcagtggcaaccttgtctctatgccagctcagtcccatc agagagcgagcgctacccacttctaaatagcaatttcgccgttgaagagggaagggcaaaaccactagaactctccatcttattitcatgtatatgtgttcattaaagcatgaatggtatggaactctctccaccctatatgtagtataaagaaaagtagg actaatttgatgtttacaggtggacacacaaaggtgcaaatcaatgcgtacgtttcctgagaagtgtctaaaaacaccaaa

tggtagaacgtaaccacggaaaagagcgcatcaggcctggcacggtggctcaggcctataaccccagctccctaggagac caaggcgggagcatctcttgaggccaggagtttgagaccagcctgggcagcatagcaagacacatccctacaaaaaatta gaaattggctggatgtggtggcatacgcctgtagtcctagccactcaggaggctgaggcaggaggattgcttgagcccag gagttegaggetgeagteagteatgatggeaceaetgeaetecageetgggeaacagageaagateetgtetttaaggaa aaaaagacaagggaattcgaattcatggaaatgggaagggcagtgatggagatgggaagggcagtgggggttggaggggt tgaggtgatggataccccatttaccctgatgtgattattatacattgtatgcctgtatcaaaatagctcatgtgcctcat 10 gcttcctggaaggctgggtgaaatgggagtctcggaaagatggtgttgttgcaggctgggaggaggatgagacgctggggt ggcagatctttatctggccctgggtgcttgaggagtttcaggctttctataagcctcgtctccccgcctctccacccca 15 agcagggccctggagagatggccacggtcccagcaccggggaggactggaggactgcagcccctgccaccgccccatgtctca ttcagctctgactcagttcccccagcagtttctgcctgaactcccatccccaactttgtcttagaattcgaagagcaag tcagetctgactcagtteccecageagttectgectgaactcccccaacttegtettagaattegaagagaag
cgccatgttgaagccatcattaccattcacatccctcttattcctgcagetgcccetgctggagtggggtgaacacga
caattetgacgcccaatgggaatgaagacacacacagetgatttettectgaccactatgccactagctccctcagtgtt
tccactctgccctcccagaggttcagtgttttgtgttcaatgtcgagtacatgaattgcacttggaacagcagtctga
gcccagcctaccaacctcactctgcattattggtacaagaactcggataatgataaagtccagaagtgcagcactatc
tattctctgaagaaatcacttctggctgtcagttgcaaaaaaaggagatccacctctaccaacatttgttgttcagctc
caggacccacgggaacccaggagacacacagatgctaaaactgcagaaatctggtgatcccctgggtccagagaa
cctaacacttcacaaactgagtgaatcccagctagaactgaactgaacaacagattcttgaaccactgtttggagcact
tggtgcagtaccggactgactgggaccacaggtggactgaactgaacaataagtcttatagacaataagtctctcttgcctagt 25 głogałygocagaaacyckacacytticgtyticggaycogettiacccactetytygaagtycteagcatiggaytyg atggayccacccaatecactygygyageaatactteaaaagayaatectitectytityaattygaaytygeteagcatiggaytya 30 gagtetgeagecagaetaeagtgaaegaetetgeetegteagtgagatteeeecaaaaaggagggeeettggggagggge ctggggcctccccatgcaaccagcatagccctactgggccccccatgttacaccctaaagcctgaaacctgaacccca actcacctcaccccactgtggctgatttggaattttgtgcccccatgtaagcaccccttcattttggcattccccacttga 35 gaattaccettttgccccgaacatgttttettettetccctcagtetggccctteettttegcaggattetteetccctccc tettteeeteeetteetettteeatetaeeeteegattgtteetgääeegatgagaaataaagtttetgttgataateat cgagagactggatggacccacaagggtgacagcccaggcggaccgatcttcccatcccacatcctccggcgcgatgccaa aaagaggetgaeggeaactgggeettetgeagagaaagaeeteegetteactgeeeeggetggteeeaagggteaggaag atggattcatacctgctgatgtggggactgctcacgttcatcatggtgcctggctgccaggcagagctctgtgacgatga 45 cacctggcagcggagacagaggaagagtagaagaacaatctagaaaaaacaaaagaacaagaatttcttggtaagaagcc ggaacagacaacagaagtcatgaagcccaagtgaaatcaaaggtgctaaatggtcgcccaggagacatccgttgtgcttg cctgcgtttttggaagetetgaagtcacateacaggacacggggcagtggcaacettgtetetatgccagetcagteccat cagagagcgagcgctacccacttctaaatagcaatttcgccgttgaagaggaagggcaaaaccactagaactctccatct 50 tattttcatgtatatgtgttcattaaagcatgaatggtatggaactctctccaccctatatgtagtataaagaaaagtag acactctaccctatacaactggacattgtctgcgtggttcctttctcagccgcttctgactgctgattctcccgttcacg ttgcctaataaacatccttcaagaactctgggctgctacccagaaatcattttacccttggctcaatcctctaagctaac ccccttccactgagccttcagtcttgaatttctaaaaaacagaggccatggcagaataatctttgggtaacttcaaaacg 65 gcagaataaaaagcgggtcactctatatgctctgtacaggaaactctagccactcgtcctgggacaaccaatgtcaatgc acaagetetgecaeteggaacaeaegaaacaagtgacaeeteaacetgaagaacagaaagaaaggaaaaccacagaaat gcaaagtccaatgcagccagtggaccaagcgagccttccaggtcactgcaaggaacctccaccatgggaaaatgaagcca 70 cagagagaatttatcatttcgtggtggggcagatggtttattatcagtgcgtccagggatacagggctctacacagaggt cctgctgagagcgtctgcaaaatgacccacgggaagacaaggtggacccagcccagctcatatgcacaggtgaaatgga gaccagtcagtttccaggtgaagagaagcctcaggcaagccccgaaggccgtcctgagagtgagacttcctgcctcgtca caacaacagattttcaaatacagacagaaatggctgcaaccatggagacgtccatatttacaacagagtaccaggtagca gtggccggctgtgttttcctgctgateagcgtcctcctcctgagtgggctcacctggcagcagagacagaggaagagtag 75 aagaacaatetaggaatteteaggateetteagttegeegeateetteteeattatttgaatattggaggetgeetgaee

```
ggcc (SEQ ID NO:12294)
   aagettaatataaacaagtttettgteaetgeeaceaceacgaccaaaaaaagetaateaateaetatatataatacata
   cagagaagetetateteccetecaggageceagetatgaacteettetecacaagegeetteggtecagttgcettetec
   ctggggctgctcctggtgttgcctgcttccctgccccagtaccccaggagaagattccaaagatgtagccgccc
   aggagacatgtaacaagagtaacatgtgtgaaagcagcaaagaggcactggcagaaaacaacctgaaccttccaaagatg
   gctgaaaaagatggatgcttccaatctggattcaatgaggagacttgcctggtgaaaatcatcactggtcttttggagtt
   tgaggtatacctagagtacctccagaacagatttgagagtagtgaggaacaagccagagctgtgcagatgagtacaaaaag
   tcctgatccagttcctgcagaaaaaggcaaagaatctagatgcaataaccacccctgacccaaccacaaatgccagcctg
   ctgacgaagctgcaggcacagaaccagtggctgcaggacatgacaactcatctcattctgcgcagctttaaggagttcct
   gcagtccagcctgagggctcttcggcaaatgtagcatgggcacctcagattgttgttgttaatgggcattccttcttctg
   ccacttgaaacattttatgtattagttttgaaataataatggaaagtggctatgcagtttgaatatcctttgtttcagag
   gtatttatataatgtataaaatggtttttataccaataaatggcattttaaaaaaattcagca (SEQ ID NO:12296)
   tctcagccctgagaaaggagacatgtaacaagagtaacatgtgtgaaagcagcaaagaggcactggcagaaaacaacctg
   aaccttccaaagatggctgaaaaagatggatgcttccaatctggattcaatgaggagacttgcctggtgaaaatcatcac
   tggtcttttggagtttgaggtatacctagagtacctccagaacagatttgagagtagtgaggaacaagccagagctgtgc
30
   agatgagtacaaaagtcctgatccagttcctgcagaaaaaaggcaaagaatctagatgcaataaccacccctgacccaacc
   acaaatgccagcctgctgacgaagctgcaggcacagaaccagtggctgcaggacatgacaactcatctcattctgcgcag
   ctttaaggagttcctgcagtccagcctgagggctcttcggcaaatgtagcatgggcacctcagattgttgttgttaatgg
   gcattccttcttctggtcagaaacctgtccactgggcacagaacttatgttgttctctatggagaactaaaagtatgagc
   atatttttaagaagtaccacttgaaacattttatgtattagttttgaaataataatggaaagtggctatgcagtttgaat
   atcetttgtttcagagecagatcatttettggaaagtgtaggettaeeteaaatagagetaaettataeatatttta
   aagaaatatttatattgtatttatataatgtataaatggtttttataccaataaatggcattttaaaaaaattc (SEQ ID NO:12297)
   aagettaatataaacaagtttettgteactgecaccaccacgaccaaaaaaagetaateaateactatataatacata
   cccttccaggagcccagctatgaactccttctccacaagcgctttcggtccagttgccttctcctcgggctgctcctgg
tgttgcctgctgctcctgcccagtaccccagtaccccaggagaagattccaaagatgtagccgcccacacaagacagccatt
   acctcttcagaacgaattgacaaacaaattcggtacatcctcgacggcatctcagccctgagaaaggagacatgtaacaa
   gagtaacatgtgtgaaagcagcaaagaggcactggcagaaaacaacctgaaccttccaaagatggctgaaaaagatggat
   gcttccaatctggattcaatgaggagacttgcctggtgaaaatcatcactggtcttttggagtttgaggtatacctagag
   tacctccagaacagatttgagagtagtgaggaacaagccagagctgtgcagatgagtacaaaagtcctgatccagttcct
   gcagaaaaaggcaaagaatctagatgcaataaccacccctgacccaaccacaaatgccagcctgctgacgaagctgcagg
   cacagaaccagtggctgcaggacatgacaactcatctcattctgcgcagctttaaggagttcctgcagtccagcctgagg
   gctcttcggcaaatgtagcatgggcacctcagattgttgttgttaatgggcattccttcttcttggtcagaaacctgtcca
   ctgggcacagaacttatgttgttctctatggagaactaaaagtatgagcgttaggacactattttaattattttaattt
55
   attaatatttaaatatgtgaagctgagttaatttatgtaagtgatatttatattttaagaagtaccacttgaaacatttt
   atgtattagttttgaaataataatggaaagtggctatgcagtttgaatatcctttgtttcagagccagatcatttcttgg
   aaagtgtacgcttacctcaaataaatggctaacttatacatatttttaaaagaaatatttatattgtatttatataatgta
   taaaatggtttttataccaataaatggcattttaaaaaattcagcagaattccgggaacgaaagagaagctctatctccc
   ctccaggagcccagctatgaactccttctccacaagcgccttcggtccagttgccttctccctggggctgctcctggtgt
   tetteagaacgaattgacaaacaaatteggtacateetegaeggcateteageeetgagaaaggagacatgtaacaagag
   tccaatctggattcaatgaggagacttgcctggtgaaaatcatcactggtcttttggagtttgaggtatacctagagtac
   ctccagaacagatttgagagtagtgaggaacaagccagagctgtgcagatgagtacaaaagtcctgatccagttcctgca
   gaaaaaggcaaagaatctagatgcaataaccaccctgacccaaccacaaatgccagcctgctgacgaagctgcaggcac
   agaaccagtggctgcaggacatgacaactcatctcattctgcgcagctttaaggagttcctgcagtccagcctgagggct
   cttcggcaaatgtagcatgggcacctcagattgttgttgttaatgggcattccttcttctggtcagaaacctgtccactg
   ggcacagaacttatgttgttctctatggagaactaaaagtatgaggcgttaggacactattttaatttttaattttta
aatatttaaatatgtgaagctgagttaatttatgtaagtcatatttatatttttaagacactattgaaacattttat
   gtattagttttgaaataataatggaaagtggctatgcagtttgaatatcctttgtttcagagccagatcatttcttggaa
   agtgtaggcttacctcaaataaatggctaacttatacatatttttaaagaaatatttatatttgtatttatataatgtata
   aatqqtttttataccaataaatqqcattttaaaaaattc (SEQ ID NO:12298)
   ggatcctcctgcaagagacaccatcctgaggggaagaggcttctgaaccagcttgacccaataagaaattcttgggtgc
   cgacggggacagcagattcagagcctagagccgtgcctgcgtccgtagtttccttctagcttctttttgatttcaaatca
   agacttacagggagagggagcgataaacacaaactctgcaagatgccacaaggtcctcctttgacatccccaacaagaa
   ggtgagtagtaatctccccctttctgccctgaaccaagtggcttcagtaagtttcagggctccaggagacctgggcatgc
   aggłąccgatgaaacagtggtgaagagactcagtggcagtggcagtgggagagcactcgcagcacaggcaaacctctgg
   gctgaagcaggtgaagaaatggcagaagacgcggtggtggcaaaaaggagtcacacactccacctggagacgccttgaag
   taactgcacgaaatttgagggtggccaggcagttctacaacagccgcctcacagggagagccagaacacagcaagaactc
   agatgactggtagtattaccttcttcataatcccaggcttggggggctgcgatggagtcagaggaaactcagttcagaac
```

tgtcaagacatgccaagtgctgagtcactaataaagaaaaaagaagtaaaggaagagtggttctgcttcttagcgctagc ctcaatgacgacctaagctgcacttttccccctagttgtgtcttgcgatgctaaaggacgtcattgcacaatcttaataa ggtttccaatcageccacccgctctggccccaccctccaccacaaagatttatcaaatgtgggattttcccatga gtctcaatattagagtctcaacccccaataaatataggactggagatgtctctgaggctcattctgccctcgag (SEQ ID NO:12299) tgcgccatccgctccggctttcgtaaccgcaccctgggacggcccagagacgctccagcgcgagttcctcaaatgttttc ctgcgttgccaggaccgtccgccgctctgagtcatgtgcgagtgggaagtcgcactgacactgagccgggccagagggag gggectgagcccgcctgcccgcccaccgccccgcccctgccacccctgccgcccggttcccattagcctgtccgc cgccgggagcggctggccccaaggcgctgccctgcgcaggaggtggcaagaggcgtgctgaccagtctgccaggagac agcgtgactctgacctgcccgggggtagagccggaagacaatgccactgttcactgggtgctcaggaagccggctgcagg cttggtgaggaagtttcagaacagtccggacgaagacttctagagagccgtgcagtattcccaggagtcccagaagtttccccgcagtagtagtcgcagtagtcgcagtagtcgcagtagtggcagtagtggcagtagtcgccagtagtggcagtagtggcaggagcaag 20 gcctggagcggcctgaggcacgtggtgcagcttcgtgcccaggaggagttcgggcaaggcgagtggagcgagtggagccc ggaggccatgggcacgccttggacagaatccaggagtcctccagctgagaacgaggtgtccaccccatgcaggcactta ctactaataaagacgatgataatattctcttcagagattctgcaaatgcgacaagcctcccagtgcaagattcttcttca 25 gtaccactgccacattcctggttgctggagggagcctggccttcggaacgctcctctgcattgcattgttctgaggtt cggagaggcctcgacccaccccagtgcttgttcctctcatctccccaccggtgtcccccagcagcctggggtctgacaat acctcgagccacaaccgaccagatgccagggacccacggagccttatgacatcagcaatacagactacttcttccccag atagetggetgggtggcaccagcagcetggaccetgtggatgacaaaacacaaacgggetcagcaaaagatgettetcac 30 tgccatgccagettatctcaggggtgtgcgggcctttggcttcacggaagaccttgcggaaggttctacgccaggggaaa atcagectgetecagetgttcagetggttgaggtttcaaacetecetttecaaatgeecagettaaaggggttagagtga acttgggccactgtgaagagaaccatatcaagactctttggacactcacacggacactcaaaagctgggcaggttggtgg gggcctcggtgtggagaagcggctggcagcccacccctcaacacctctgcacaagctgcaccctcaaggcaggtgggatgg atttccagccaaagcctcctccagccgccatgctcctggcccactgcatcgttcatcttccaactcaaactcttaaaac $\verb|ctctcccttccttccttccctacagttcaaaaacagctgagggtgagtgggtgaataatacagtatgtcagggcctggtcg|$ ttttcaacagaattataattagttcctcattagcagttttgcctaaatgtgaatgatgatcctaggcatttgctgaatac 40 aacctgggtaactagggaagataatattaaggaagacaatgtgaaaagaaaatgagcctggcaagaatgcgtttaaact tggtttttaaaaaactgctgactgttttctcttgagagggtggaatatccaatattcgctgtgtcagcatagaagtaact tacttaggtgtgggggaagcaccataactttgtttagcccaaaaccaagtcaagtgaaaaaggaggaagagaaaaaatat tttcctgccaggcatggaggcccacgcacttcgggaggtcgaggcaggaggatcacttgagtccagaagtttgagatcag 45 cctgggcaatgtgataaaaccccatctctacaaaaagcataaaaattagccaagtgtggtagagtgtgcctgaagtccca gatacttggggggctgaggtgggaggatctcttgagcctgggaggtcaaggctgcagtgagccgagattgcaccactgca ctccagcctggggtgacagagcaagtgagaccctgtctc (SEQ ID NO:12300) ggatcctcctgcaagagacaccatcctgaggggaagaggcttctgaaccagcttgacccaataagaaattcttgggtgc cgacggggacagcagattcagagcctagagccgtgcctgcgtccgtagtttccttctagcttctttttgatttcaaatca agacttacagggagagggagcgataaacacaaactctgcaagatgccacaaggtcctcctttgacatccccaacaaagaa ggtgagtagtaatctccccctttctgccctgaaccaagtggcttcagtaagtttcagggctccaggagacctgggcatgc aggtgccgatgaaacagtggtgaagagactcagtggcagtggcagtgggagagcactcgcagcacaggcaaacctctgg gctgaagcaggtgaagaatggcagaagacgcggtggtggcaaaaaggagtcacacactccacctggagacgccttgaag 55 taactgcacgaaatttgagggtggccaggcagttctacaacagccgcctcacagggagagccagaacacagcaagaactcagatgactggtagtattaccttcttcataatcccaggcttggggggctgcgatggagtcagaggaaactcagttcagaac tgtcaagacatgccaagtgctgagtcactaataaagaaaaaagaagtaaaggaagagtggttctgcttcttagcgctagcctcaatgacgacctaagctgcacttttccccctagttgtgtcttgcgatgctaaaggacgtcattgcacaatcttaataa 60 ggtttccaatcagccccacccgctctggccccaccctcaccctccaacaagatttatcaaatgtgggattttcccatga gtctcaatattagagtctcaacccccaataaatataggactggagatgtctctgaggctcattctgccctcgagggcggt atccgctccggctttcgtaaccgcaccctgggacggcccagagacgctccagcgcgagttcctcaaatgttttcctgcgt 65 gageggegetggeeccaaggegetgeeetgegeaggaggtggeaagaggegtgetgaeeagtetgeeaggagaeagegtg 70 actotgacotgocogggggtagagooggaagacaatgocactgttcactgggtgctcaggaagcoggotgcaggotccca ccccagcagatgggctggcatgggaaggaggctgctgctgaggtcggtgcagctccacgactctggaaactattcatgct accgggccggcccagctgggactgtgcacttgctggtggatgttccccccgaggagccccagctctcctgcttccgg aagagccccctcagcaatgttgtttgttgtgagtggggtcctcggagcaccccatccctgacgacaaaggctgtgtctttgg gaggaagtttcagaacagtccggccgaagacttccaggagccgtgccagtattcccaggagtcccagaagttctcctgcc agttagcagtcccggagggagacagctctttctacatagtgtccatgtgcgtcgccagtagtgtcgggagcaagttcagc aaaactcaaacctttcagggttgtggaatcttgcagcctgatccgcctgccaacatcacagtcactgccgtggccagaaa cccccgctggctcagtgtcacctggcaagacccccactcctggaactcatctttctacagactacggtttgagctcagat atogggotgaacggtcaaagacattcacaacatggatggtcaaggacotccagcatcactgtgtcatccacgacgcotggagcgctgaggcacgtggtgcagcttcacgtgcagctccaggaggcctgaggccaggcgagtggagcggagtggagcccggaggc catgggcacgccttggacagaatccaggagtcctccagctgagaacgaggtgtccacccccatgcaggcacttactactaataaagacgatgataatattctcttcagagattctgcaaatgcgacaagcctcccagtgcaagattcttcttcagtacca ctgcccacattcctggttgctggagggagcctggccttcggaacgctcctctgcattgcattgttctgaggttcaagaa

gacgtggaagetgcgggctetgaaggaaggcaagacaagcatgcatccgccgtactetttggggcagctggtcccggaga ggcctcgacccacccagtgcttgttcctctcatctccccaccggtgtcccccagcagcctgggtctgacaatacctcg agccacaaccgaccagatgccagggacccacggagcccttatgacatcagcaatacagactacttcttccccagatagct ggctgggtggcaccagcagcctggaccctgtggatgacaaaacacaaacgggctcagcaaaagatgcttctcactgccat gccagcttatctcaggggtgtgcggcctttggcttcacggaagaccttgcggaaggttctacgccaggggaaaatcagc ctgctccagctgttcagctggttgaggtttcaaacctccctttccaaatgcccagcttaaaggggttagagtgaacttgg gccactgtgaagagaaccatatcaagactctttggacactcacacggacactcaaaagctgggcaggttggtggggcct agccaaagcctcctccagccgccatgctcctggcccactgcatcgtttcatcttccaactcaaactcttaaaacccaagt gcccttagcaaattctgtttttctaggcctggggacggcttttacttaaacgccaaggcctgggggaagaagctctctcc tccctttettecetacagttcaaaaacagetgagggtgagtgggtgaataatacagtatgtcagggcctggtcgttttca acagaattataattagttcctcattagcagttttgcctaaatgtgaatgatgctaggcatttgctgaatacagaggc 15 ggtgtgggggaagcaccataactttgtttagcccaaaaccaagtcaagtgaaaaaggaggaagaaaaaatattttcct gccaggcatggaggcccacgcacttcgggaggtcgaggcaggaggatcacttgagtccagaagtttgagatcagcctggg 20 caatgtgataaaaccccatctctacaaaaagcataaaaattagccaagtgtggtagagtgtgcctgaagtcccagatact tggggggctgaggtgggaggatetettgageetgggaggteaaggetgeagtgageegagattgeaeeactgeaeteeag cctggggtgacagagcaagtgagaccctgtctc (SEQ ID NO:12301) atacctaggcactaatttagttccatatgtactatgtgtacctgaaaagttgtgtggcaatcaaattttcacaaatagaa tcctgttttaaatacactaagaaagtacctactttatcctttaaacaagagtcagcagactttttctacaaagggtcag 25 atagtaaagattttacaccttttgtacaatacaatctctatctcatctacttagctctgccattgttgcataaaaggcagc tgtagatgatacacaaatgggtgaggctgtattccaaatgaaacgttatttgcaaaaacaggtggtagattaaatttggt aggtcatagtttgccagccctgccctaaacaaataattcttgaatgcctactgtggtgtgtaaagatatgagtaaatacc agggatacacagagaacaaaagagaaaaactgctattcttgtgaaacttggaagttggaggtaagctatttaaaataaac 30 aagtttgaatttttgtcttcagattcttttaaagtgggcccttagtcaggagcggtggctcatgcctgtagtcctagcac tttgggaggctgaggcaggcagatcacttgaggtcaggagttcgagacaagcctggccaacatggcgaaaccccgtctcc ${\tt actgaaaacacaaaaattaggctggcatagtggcatttgcctgtagtcctagctactcaggaggctgaggcaggagaatt}$ gcttgaacctgggaggtgaaaattgcagtgagccgagatcatgctattgtactccagcctgggcaacaaagcaagactcg tctcaaaaaaataaaaattaaaaaaataaagtagcctctagcctaagatagcttgagcctaggtgtgaatctactgcctt 40 ctaacttttcttatggattttggattatctgtagcatggtttcaggttattcagttccctaagagacctgagtcaggcac tgggtttgagtgc (SEQ ID NO:12302) ctctctctctctctctcagaatgacaattctaggtacaacttttggcatggttttttctttacttcaagtcgtttctg gagaaagtggctatgctcaaaatggagacttggaagatgcagaactggatgactactcattctcatgctatagccagttg 45 gaagtgaatggatcgcagcattcactgacctgtgcttttgaggacccagatgtcaacaccaccaatctggaatttgaaat atgiggggcctcgtggaggtaaagtgcctgaatttcaggaaactacaagagatatatttcatcgagacaaagaaattct tactgattggaaagagcaatatatgtgtgaaggttggagaaaagagtctaacctgcaaaaaaatagacctaaccactata gttaaacctgaggeteettttgacctgagtgtcatctategggaaggageeaatgactttgtggtgacatttaatacate acacttgcaaaagaagtatgtaaaagttttaatgcatgatgtagcttaccgccaggaaaaggatgaaaacaaatggacgc atgtgaatttatccagcacaaagctgacactcctgcagagaaagctccaaccggcagcaatgtatgagattaaagttcga tccatccctgatcactattttaaaggcttctggagtgaatggagtccaagttattacttcagaactccagagatcaataa tagctcaggggagatggatcctatcttactaaccatcagcattttgagttttttctctgtcgctctgttggtcatctttgcctgtgtgttattggaaaaaaaggattaagcctatcgtatggccagtctccccgatcataagaagactctggaacatctt tgtaagaaaccaagaaaaaatttaaatgtgagtttcaatcctgaaagtttcctggactgccagattcatagggtggatga 55 cattcaagctagagatgaagtggaaggttttctgcaagatacgtttcctcagcaactagaagaatctgagaagcagaggc tggcaagaatgggcctcatgtgtaccaggacctcctgcttagccttgggactacaaacagcacgctgccccctccatttt ctctccaatctggaatcctgacattgaacccagttgctcagggtcagcccattcttacttccttgggatcaaatcaagaa 60 gaagcatatgtcaccatgtccagcttctaccaaaaccagtgaagtgtaagaaacccagactgaacttaccgtgagcgaca aagatgatttaaaagggaagtctagagttcctagtctccctcacagcacagagaagacaaaattagcaaaaccccactac acagtctgcaagattctgaaacattgctttgaccactcttcctgagttcagtggcactcaacatgagtcaagagcatcct gcttctaccatgtggatttggtcacaaggtttaaggtgacccaatgattcagctattt (SEQ ID NO:12303) atacctaggcactaatttagttccatatgtactatgtgtacctgaaaagttgtgtggcaatcaaattttcacaaatagaa 65 tectgttttaaatacactaagaaagtacetactttateetttaaacaagaggteageagaetttttetacaaagggteag atagtaaagattttacaccttttgtacaatacaatctctatctcatctacttagctctgccattgttgcataaaagcagc tgtagatgatacacaaatgggtgaggctgtattccaaatgaaacgttatttgcaaaaacaggtggtagattaaatttggt aggtcatagtttgccagccctgccctaaacaaataattcttgaatgcctactgtggtgtgtaagatatgagtaaatacc 70 agggatacacagagaacaaaagagaaaaactgctattcttgtgaaacttggaagttggaggtaagctatttaaaataaac aagtttgaatttttgtcttcagattctttaaagtgggcccttagtcaggagcggtggctcatgcctgtagtcctagcac tttgggaggctgaggcaggcagatcacttgaggtcaggagttcgagacaagcctggccaacatggcgaaaccccgtctccactgaaaacacaaaaattaggctggcatagtggcatttgcctgtagtcctagctactcaggaggctgaggcaggagaatt 75 gettgaacetgggaggtgaaaattgcagtgageegagatcatgetattgtaeteeageetgggeaacaaagcaagaeteg totcaaaaaaaaaaattaaaaaaaaaagtagoototagootaagatagottgagootaggtgtgaatotaotgoott gtacaacttttggcatggttttttctttacttaagtcgtttctggagaaagtggctatgctcaaaatggtgagtcattt ctaactttttttatggattttggattatctgtagcatggtttctaggttattcagttccctaagagacctgagtcaggcac

tgggtttgagtgcctctctctctatctctctcagaatgacaattctaggtacaacttttggcatggtttttttctttactt caagtogtttctggagaaagtggctatgctcaaaatggagacttggaagatgcagaactggatgactactcattctcatg ctatagccagttggaagtgaatggaatggagcagcattcactgacctgtgcttttgaggacccagatgtcaacaccaatc tggaatttgaaatatgtggggccctcgtggaggtaaagtgcctgaatttcaggaaactacaagagatatatttcatcgag acaaagaaattettactgattggaaagageaatatatgtgtgaaggttggagaaaagagtetaaeeetgcaaaaaataga cctaaccactatagttaaacctgaggctccttttgacctgagtgtcatctatcgggaaggagccaatgactttgtggtga catttaatacatcacacttgcaaaagaagtatgtaaaagttttaatgcatgatgtagcttaccgccaggaaaaggatgaa aacaaatggacgcatgtgaatttatccagcacaaagctgacactcctgcagagaaagctccaaccggcagcaatgtatga gattaaagitcgatccatccctgatcactattttaaaggcttctggagtgaatggagtccaagttattacttcagaactc cagagatcaataatagctcaggggagatggatcctatcttactaaccatcagcattttgagttttttctctgtcgctctg ttggtcatcttggcctgtgtgttatggaaaaaaggattaagcctatcgtatggcccagtctccccgatcataagaagac tctggaacatetttgtaagaaaccaagaaaaaatttaaatgtgagtttcaateetgaaagttteetggactgecagatte atagggtggatgacattcaagctagagatgaagtggaaggttttctgcaagatacgtttcctcagcaactagaagaatct gagaageagaggettggaggggatgtgcagagcccaactgcccatctgaggatgtagtcgtcactccagaaagctttgg actgcagggagagtggcaagaatgggcctcatgtgtaccaggacctcctgcttagccttgggactacaaacagcacgctg ccccctccattttctctccaatctggaatcctgacattgaacccagttgctcagggtcagcccattcttacttccctggg atcaaatcaagaagaagcatatgtcaccatgtccagcttctaccaaaaccagtgaagtgtaagaaacccagactgaactt accgtgagcgacaaagatgattttaaaagggaagtctagagttcctagtctcccccacagcacagagaagacaaaattagc aaaaccccactacacagtctgcaagattctgaaacattgctttgaccactcttcctgagttcagtggcactcaacatgag 25 30 tgttccctggacgggctgttcccagtctcggaggcccaggtccacctggcactgggggaccagaggttgaaccccacagt gtgcagtaatactggggaaccagagccaggagacactgcagacagtgaccatctacagctttccggcgcccaacgtgatt ctgacgaagccagaggtctcagaagggaccgaggtgacagtgaagtgtgaggcccaccctagagccaaggtgacgctgaa tggggttccagccagccactgggcccgagggcccagctcctgctgaaggccaccccagaggacaacgggcgcagcttct cctgctctgcaaccctggaggtggccggccagcttatacacaagaacccgggagcttcgtgtcctgtatggccc cgactggacgagagggattgtccgggaaactggacgtggccagaaaattcccagcagactccaatgtgccaggcttgggg gaacccattgcccgagctcaagtgtctaaaggatggcactttcccactgcccatcggggaatcagtgactgtcactcgag atcttgagggcacctacctctgtcgggccaggagcactcaaggggaggtcacccgcgaggtgaccgtgaatgtgctctcc ${\tt ccccggtatgagattgtcatcatcactgtggtagcagccgcagtcataatgggcactgcaggcctcagcacgtacctcta}$ taaccgccagcggaagatcaagaaatacagactacaacaggcccaaaaagggacccccatgaaaccgaacacacaagcca ctaaagatctccctccaggcagcccttggctggtccctgcgagcccgtggagactgccagagatgtcctctttcggttacaggaccctgactgtggccctctttcaccctgatctgccaggatcggatgagaaggtattcgaggtacacgtgaggcc tggagacctctctaaataagattctgctggacgaacaggctcagtggaaacattacttggtctcaaacatctcccatgac 50 acggtcctccaatgccacttcacctgctccgggaagcaggagtcaatgaattccaacgtcagcgtgtaccagcctccaag gcaggtcatcctgacactgcaacccactttggtggctgtgggcaagtccttcaccattgagtgcagggtgcccaccgtgg agcccctggacagcctcaccctcttcctgttccgtggcaatgagactctgcactatgagaccttcgggaaggcagccct gctggacttgatgtctcgcggtggcaacatctttcacaaacactcagccccgaagatgttggagatctatgagcctgtgt 55 eggacagecagatggtcatcatagtcacggtggtgteggtgttgctgtccctgttcgtgacatctgtcctgctctgcttc atetteggeeageaettgegeeageageggatgggeaeetaeggggtgegageggettggaggaggetgeeeeaggeett ccggccatagcaaccatgagtggcatggccaccaccacggtggtcactggaactcagtgtgactcctcagggttgaggtc cagccctggctgaaggactgtgacaggcagcagagacttgggacattgccttttctagcccgaatacaaacactggact t (SEQ ID NO:12306) 60 $\verb|ctcagcctcgctatggctcccagcagcccgggctgcccgcactcctggtcctgctcggggctctgttcccagggctcccaggctcccagggctcccaggctcccagggctcccaggctcccaggctcccaggctcccagggctcccag$ acctggcaatgcccagacatctgtgtccccctcaaaagtcatcctgccccggggaggctccgtgctggtgacatgcagca 65 70 gtgcagtaatactggggaaccagagccaggagacactgcagacagtgaccatctacagctttccggcgcccaacgtgatt ctgacgaagccagaggtotcagaagggaccgaggtgacagtgaagtgtgaggcccaccctagagccaaggtgacgctgaa tggggttccagcccagccactgggcccgagggcccagctcctgctgaaggccaccccagaggacaacgggcgcagcttct cctgctctgcaaccctggaggtggccggccagettatacacaagaaccaggacccgggagcttcgtgtcctgtatggcccc 75 cgactggacgagagggattgtccggggaaactggacgtggccagaaaattcccagcagactccaatgtgccaggcttgggg gaacccattgcccgagctcaagtgtctaaaggatggcactttcccactgcccatcggggaatcagtgactgtcactcgag atcttgagggcacctacctctgtcgggccaggagcactcaaggggaggtcacccgcgaggtgaccgtgaatgtgctctcc ccccggtatgagattgtcatcatcactgtggtagcagccgcagtcataatgggcactgcaggcctcagcacgtacctcta taaccgccagcggaagatcaagaatacagactacaacaggcccaaaaagggacccccatgaaaccgaacacacaagcca cgcctccctgaacctatcccgggacagggcctcttcctcggccttcccatattggtggcagtggtgccacactgaacaga cagcatttggggccatggtacctgcacacctaaaacactaggccacgcatctgatctgtagtcacatgactaagccaaga

ggaaggctaaagatctccctccaggcagcccttggctggtccctgcgagcccgtggagactgccagagatgtcctctttc ggttacaggaccctgactgtggccctcttcaccctgatctgctgtccaggatcggatgagaaggtattcgaggtacacgt gaggccaaagaagctggcggttgagcccaaagggtccctcgaggtcaactgcagcaccacctgtaaccagcctgaagtgg gtggtctggagacctctctaaataagattctgctggacgaacaggctcagtggaaacattacttggtctcaaacatctcc catgacacggtcctccaatgccacttcacctgctccgggaagcaggagtcaatgaattccaacgtcagcgtgtaccagcctccaaggcaggtcatcctgacactgcaacccactttggtggctgtggccaagtccttcaccattgagtgccgaggtgccca ccgtggagcccctggacagcctcaccctcttcctgttccgtggcaatgagactctgcactatgagaccttcgggaaggca gcccctgctccgcaggaggccacagccacattcaacagcacggctgacagagaggatggccaccgcaacttctcctgcct ggctgtgctggacttgatgtctcgcggtggcaacatctttcacaaacactcagccccgaagatgttggagatctatgagc aatggcaacattggtaacattcggtgttgtgggccagggcctgctggtggactctgctggtctgctgtctgctgacccaggtgtccaggggcaggagttcctttttgcgggtggagcccaggaaccctgtgctctctgctggagggtccctgtttgtgaactgc 15 agtactgattgtcccagctttgagaaaatcgccttggagacgtccctatcaaaggagctggtggccagtggcatgggctg qqcaqccttcaatctcaqcaacqtqactggcaacaqtcqgatcctctgctcagtgtactgcaatggctcccagataacag gctcctctaacatcaccgtgtacgggctcccggagcgtgtggagctggcacccctgcctccttggcagccggtgggccag 20 aacttcaccctgcgctgccaagtggagggtgggtcgcccggaccagcctcacggtggtgctgcttcgctgggaggaggagga gctgagccggcagccgcagtggaggagccagcggaggtcactgccactgtgctggccagcagagacgaccacggagccc ctttctcatgccgcacagaactggacatgcagccccaggggctgggactgttcgtgaacacctcagcccccggccagctc cgaacctttgtcctgcccgtgaccccccgggcctcgtggcccccggttcttggaggtggaaacgtcgtggccggtgga ctgcaccctagacgggctttttccagcctcagaggcccaggtctacctggcgctgggggaccagatgctgaatgcgacag 25 tgcaacgtgaccctagggggcgagagacgggaggcccgggagaacttgacggtctttagcttcctaggacccattgtgaa cctcagcgagcccaccgccatgaggggtccacagtgaccgtgagttgcatggctggggctcgagtccaggtcacgctgg ttctgcagtgccactctcgaggtggacggcgagttcttgcacaggaacagtagcgtccagctgcgagtcctgtatggtcc 30 caaaattgaccgagccacatgccccagcacttgaaatggaaagataaaacgagacacgtgctgcagtgccaagccaggg gcaacccgtaccccgagctgcggtgtttgaaggaaggctccagccgggaggtgccggtggggatcccgttcttcgtcaac gtaacacataatggtacttatcagtgccaagcgtccagctcacgaggcaaatacaccctggtcgtggtgatggacattga ggctgggagctcccactttgtccccgtcttcgtggcggtgttactgaccctgggcgtggtgactatcgtactggccttaa gcacggagggcagagaccccggagccccagcccaccatgaccctcggccgactcgcgtgtcttttcctcgcctgt 40 ccgcgcactgcgtggcgaatgtaaacgtccgcggggtgcgggtggtcctgggagcccataacctctcgcggcgggagccc acceggcaggtgttegcegtgcagegcatettegaaaacggctaegaccecgtaaacttgctcaacgacategtgattet ccagctcaacgggtcggccaccatcaacgccaacgtgcaggtggcccagctgccggctcagggacgccctgggcaacg gggtgcagtgcctggccatgggctggggccttctgggcaggaaccgtgggatcgccagcgtcctgcaggagctcaacgtg acggtggtgacgtccctctgccgtcgcagcaacgtctgcactctcgtgaggggccggcaggccggcgtctgtttcgggga ctccggcagcccttggtctgcaacgggctaatccacggaattgcctccttcgtccggggaggctgcgcctcagggctct accccgatgcctttgccccggtggcacagtttgtaaactggatcgactctatcatccaacgctccgaggacaacccctgt ccccaccccgggacccggacccggccagcaggacccactgagaagggctgcccgggtcacctcagctgcccacacccac actotecagoatetggcacaataaacattetetgttttgt (SEQ ID NO:12309) ggagaggatggaaggcctggccccaagaatgagccctgaggttcaggagcggctggagtgagccgcccccagatctccg 50 55 tetetactaataaaatacaaaaaattagecaggegeagtgeteaegeetgtgateecagcactetgggaggtgaggeaggeg qatcacccgaggtcagctgttcaagaccagcctggccgagtgggcgaaacactgtctctactacaaatacaaaattagc 60 cgggagtggaggcaggtgcctgtaatctcagctattcaggaggctgaggcaggagaatcacttgaacctgggaggcggag aaaacccacattgattatctgacatttgaatgcgattgtgcatcctgaattttgtctggaggccccacccgagccaatcc 65 cecaccatgacceteggeeggegactegogtgtettttectegeetgtgteetgeeggeettgetgetggggggtgagtt tttgagtccaacctccggtgctccctctgtcccgggttctgttcccacctctccatagagggccccaccagtgtgggtc cctcatcctcacaggggaggtgccagctgggacaaggagaccagaagagactgaggttctgagcggtgaagccaccacca tgccttggaggggcaccgtggggaggtccctttgcctctcgtgcctcagtttcctcatctgaacaacaggggtgcgaac 70 gcacccgcacccggtgtgtccccaggcaccgcgctggcctcggagattgtgggggccggcggcggaggccccacgcgtggcccttcatggtgtccctgcagctgcgcggaggccacttctgcggggggccccaacttcgtcatgtcatgtcgg ccgcgcactgcgtggcgaatgtgtgagtagccgggagtgtgcgcccggctcggaccccgcgtcccggtctgtgaggtg 75 cggscggscgggsgagggsgagggcccgatctgttgtcaatcaacaaacttactgagaggggggsgcccgatctgttacaacaaacttactgagaagggaggccccgatctgtt

tgtgtgtctctccattcaccagtcctgtggcccagggcaggggccgcctctgtctttgggaaaaggggcaaaagtcccca cctttccaccctgtccgcggcttgcagttctggttatttcctgggcgccgggccccgtggctcaggcctgtcatcccag cactttgggaggctgaggcgggtggatcacgaggtcaggtgttcgagaccagcctgagcaacatagtgaaaccccgtctc tactaaaatacacaaaaaaaaaattagccgagtgtggttgtgggtgcctgtaatgccaactactcaggaggctgaggaag gagaategettgaaceceggaggeggagattgeagtgagetgagateacacecactgeactccagectgggteteaaaaaa aaaaaaaaagatteeteectgggaagggttagagggagagttteettgteactaagtttteteatageteteacecagtg cagtggcgcgatcgcagctcactacacctccatctcctgggctcaagccaccctctcagcttggaatggggggtagctgg teacteactgeaceteegecteecaggtteaagegattetectgecteagecteecaggtagetgggaetacaggegeec gccaccacgcctggctaattttttggtattgttagtagagacggggtttaaccatgttagccaggatggtcttgatctcct ttatttttgtagacatggggctttgccacattgcccaggctggtcttgaatgcctggcctggcctaagtgatcctcctgc gcttcctgcactcaagccacatccagggacaacctccaacgccctgagccttggtgacggctcccactctacagatgggg gatggggaaactgaggccggagaggggggggtcatcatcactgcccgtgtgacgcgctgacgatctgtccccaccgcacagctcaacgggtcagcaccatcaacgccaacgtgcaggtggcccagctgccggctcagggacgccctgggcaacg acageteaacgggteggcaacateaacgcaacgtgcaggtggccagetgcggctcagggacgcgcetgggcaacg
gggtgcagtgcctggccatgggcttctggggcatctgggagacgtgcaggtgccagcgtcctgcaggacgctcaacgtg
acggtggtgacgtccctctgccgctcgcagcacgtctgcactctcgtgaggggccagggccaggctctgctttcgtacg
tgccctgggtgtccctctgctcccacccgctcccagccggtactgcagcacaggcacgtggctagaccctaggatg
ggacttcccaaccctgacacgtcggcgggcaggtgggcagggctcgcagctccaccttgtctgcctccac
aggggactccggcagccccttggtctgcaacggctaatccacggaattgcctccttcgtccggggaggctgcgcctcag
ggctctaccccgatgcctttgccccggtggcacagtttgtaaactggatcgaccttatcatccaacgctccgaggacaac 30 ccctgtccccaccccgggacccggacccggcaagcaggacccactgagaagggctgcccgggtcacctcagctgccac acccacactctccagcatctggcacaataaacattctctgttttgtagaatgtgtttgatgctccttggctgtgtgattg tcacttgagctc (SEQ ID NO:12310) gcccttcatggtgtccctgcagctgcgcggaggccacttctgcggcgccaccctgattgcgcccaacttcgtcatgtcgg ccgcgcactgcgtggcgaatgtaaacgtccgcgcgcggtgcgggtggtcctgggagcccataacctctcgcggcgggagccc accoggcaggtgttcgccgtgcagcgcatcttcgaaaacggctacgaccccgtaaacttgctcaacgacatcgtgattct ccagctcaacgggtcggccaccatcaacgccaacgtgcaggtggcccagctgccggctcagggacgccgcctgggcaacg gggtgcagtgcctggccatggggcttctgggcaggaaccgtgggatcgccagcgtcctgcaggagctcaacgtg acggtggtgacgtccctctgccgtcgcagcaacgtctgcactctcgtgaggggccggcaggccggcgtctgtttcgggga ctccggcagcccttggtctgcaacgggctaatccacggaattgcctccttcgtccggggaggctgcgcctcagggctct accccgatgcctttgccccggtggcacagtttgtaaactggatcgactctatcatccaacgctccgaggacaacccctgt cctgggtgaaagtgagttccccgttggaggcaccagacgaggagagatggaaggcctggcccccaagaatgagccctga ggttcaggagcggctggagtgagccgccccagatctccgtccagctgcgggtcccagaggcctgggttacactcggagc tectgggggaggeeettgaegtgeteagtteeeaaacaggaaceetgggaaggaecagagaagtgeetattgegeagtga 50 tatcacagggccctgggtaaactgaggcaggcgacacagctgcatgtggccggtatcacagggccctgggtaaactgagg atcacgoggccctggataaacagaggcaggcgaggccaccccatcaagtccctcaggtctaggtttggccaggtttgga aaaacacagcaacgctcggtaaatctgaatttcgggtaagtatatcctgggcctcatttggaagagacttagattaaaaa aaaaaagtogagaccagccggccaacaagtgaaaccccgtctctactaaaaatacaaaaattagccaggcgcagtgct 55 cacgcctgtgatcccagcactctgggaggtgaggcaggcggatcacccgaggtcagctgttcaagaccagcctggccgag tgggegaaacactgtetetactacaaatacaaaattageegggagtggaggeaggtgeetgtaateteagetatteagg aggctgaggcaggagaatcacttgaacctgggaggcggaggttgccgtgagccgggatcacgccaccgcactccagcctg ggcgatagagcaagactctgtctccaaaaaaataaattaaaataaacccacattgattatctgacatttgaatgcgattgtg catcctgaattttgtctggaggccccacccgagccaatccagcgtcttgtcccccttctcccccttttcatcaacgcctg 60 tgccaggggagaggaagtggagggcgctggccggcggtggggcaatgcaacggcctcccagcacagggctataagaggag tegeetgtgteetgeeggeettgetgetggggggtgagtttttgagteeaaceteeggetgeteectetgteecgggtte araderadeceretradadreseradadradeceredadadeceredadadreseradadreseradadadeceredadadeceretradeceretradeceretradeceretradeceredada 65 cgtgcctcagtttcctcatctgaacaacaggggtgcgaacggcgcccgtggtgtccctgcagtggggaatccaggggaatct cgtgcctcagtttcctcatctgaacaacaggggtgcgaacggccccatcggtggttccctgcagtggggaatccagaggc ccgtggccgggaagggaccggcgagcccacggggccccacgcgtggcccttcatggtgtccctgcagcgggggaatccgtggcacttc tgcggcgccaccctgattgcgccaacttcgtcatgtcggccgcgcactgcgtggcgaatgtgtgagtagccggggagtgt gtccgtccaggctcggagcccgcgtccctcgagcaccttcgccctcaggcccgtcgccggatggggacgacaaggcgcggctg ggageceataacetetegeggegggageceaceeggeaggtgttegeegtgeagegeatettegaaaaeggetaegaeee ggaggtggaggcctgggaggtggaggctgcgacggaggggcgctcgggggcgctcgtggggacctggggtggcatc gtgggctgggtggtcccctctccggcctcggtctgcacctctgtgaaacgggaaaatacccgccatgggccgttgaggg ggccccgatctgctgtcaatcaacaacttactgagattctgtgtgtctctccattcaccagtcctgtggcccagggcag

gggccgcctctgtctttgggaaaaggggcaaaagtccccacctttccacccctgtccgcggcttgcagttctggttattt cctgggcgccggggcccgttggctcaggcctgtcatcccagcactttgggaggctgaggcgggtggatcacgaggtcaggt 10 gtctcgctctgtcgcccaggctggagcgcagtgcacaatctcactgcacctccgcctcccaggttcaagcgattct cctgcctcagcctcccaggtagctgggactacaggcgccgccaccacgcctggctaattttttggtattgttagtagaga tggtcttgaatgcctggcctggcctaagtgatcctcctgcctcgcctcccaaagtgctqggcttacaagcatgagccac cgcgccggctgtagtttttttgttaactgagcacctactgcttcctgcactcaagccacatccagggacaacctccaac actgcccgtgtgacgcgtgacgatctgtcccaccgccacagctcaacgggtcggccaccatcaacgccaacgtgcag gtggcccagctgccagcgtcagggacgccctgggcaacgggtgcagtgctggccttggccatgggctgggcttctgggca gaaccgtgggatcgccagcgtcctgcaggagctcaacgtgacggtgctgacgtccctctgccatggctgcagcaacgtctgca 20 ctctcgtgaggggccggcaggccggcgtctgtttcgtacgtgccctgggtgtccctctgctccccacccgctcccagccc ggtactgcagcaacaggcaccgtggctagaccctaggatgggacttcccaaccctgacacgtcggcgggcaggtgggcag ggcctcgcagtccagcttccccaccttgtctgcctccacagggggactccggcagccccttggtctgcaacgggctaatc 25 cacggaattgcctccttcgtccggggaggctgcgcctcagggctctaccccgatgcctttgccccggtggcacagtttgt aaactggatcgactctatcatccaacgctccgaggacaacccctgtccccacccccgggacccggacccggccagcagga cccactgagaagggetgcccgggtcacctcagctgcccacacccacactctccagcatctggcacaataaacattctctg ttttgtagaatgtgtttgatgctccttggctgtgtgattgggtgttgaaaatggtcagtaggtcgggcgtggtggctcac acctgtaatcccagcactttgggaggttgaggcaggcggatcacttgagctc (SEQ ID NO:12311) 30 ctattgcagtatctttcagcttccagtcttatctgaagaccccggcaccaaagtgaccaggaggcagaagaacttcag aggagtetegtettgggetgeeegtgggtgagtgggagggteegggaetgeagaeeggtggegatggeeaeteteeeage agcagaaacctggatagacgggggtggaggcgtgggtgcagacgccgtgaacctgaccgcctcgctagctgccggggcgg ccacgggggcagttgagactgggtggctgcaactgctggaccaagctggcaacctctcctcctccccttccgcgctggga ctgcctgtggcttcccccgcgccctcccagccctgggccaacctcaccagttcgtgcagccgtcctggcgcatcgc ctttattccaaaaccaaagtcatgccaggccgtactctctgctttgtgcaatggccagaaggtcccaaacaacatttcac ttaccatattategteattataelggtgtaetgttteccattgeteateatgggtattaeataeaecattgttggaatta 45 ccatcatctactgctgtctgaataaaagatttcgagctggcttcaagagagcatttcgctggtgtcctttcatcaaagtt tccagctatgatgagctagagctcaagaccaccaggtttcatccaaaccggcaaagcagtatgtacaccgtgaccagaat ggagtccatgacagtcgtgtttgaccccaacgatgcagacaccaccaggtccagtcggaagaaaagagcaacgccaagag acccaagtttcaatggctgctctcgcaggaattccaaatctgcctccgccacttcaagtttcataagetcaccctatacc totgtggatgaatattettaatteeattteetgaggtaaaagattagtgtgagaceatcatggtgeeagtetaggacee atteteetatttateagteetgteetatataceetetagaaacagaaagcaatttttaggeagetatggteaaattgaga aaggtagtgtataaatgtgacaaagacactaataacatgttagcctccacccaaaataaaatgggctttaaattt (SEQ ID NO:12312) ctgcagaccggtggcgatggccatcctcccagcagcagaaacctggatagacggggtggaggcgtgggtgcagacgccg 55 60 ctagcatttctacttgccttccctcagtgtctttattccaaaaccaaagtcatgccaggccgtactctctgctttgtgca atggccagaaggtcccaaacaacatttcacgtaagttaattctctattatggttttcaattcagttt (SEQ ID NO:12314) catgtgtttttcttattttccatagttaccatattatcgtcattatactggtgtactgtttcccattgctcatcatgggt attacatacaccattgttggaattactctctggggaggagaaatcccaggggagatacctgtgacaagtatcatgagcagct aaaggccaaaagaaaggtactggtccatgttgtttacctag (SEQ ID MO:12315) caaatgactttttctttataggttgtcaaaatgatgattattgttgtcatgacatttgctatctgctgctgccctatca tatttacttcattctcactgcaatctatcaacaactaaatagatggaaatacatccagcaggtctacctggctagctttt ggctggcaatgagctcaaccatgtacaatcccatcatctactgctgtctgaataaaaggtaaaaacaaaactacgaaatg caagttgcttgtcac (SEQ ID NO:12316) 70 aaaataacttttctttctgtggcctgcttttcctcagatttcgagctggcttcaagagagcatttcgctggtgtcctttc atcaaagttttccagctatgatgagctagagctcaagaccaccaggtttcatccaaaccggcaaagcagtatgtacaccgt gaccagaatggagtccatgacagtcgtgtttgaccccaacgatggagacaccaccaggtccagtcggaagaaaagagcaacgacagaatggagtccagtcggaagaaaagagcaacgatggagacaccacttcaagtttcataagctaacgatgcagaatacctatggagaatatcataagctcaccctatacctctgtggatgaatattcttaattccatttcctgaggtaaaagattagtgtgagaccatcatggtgccagtctaggacccattctcctatttatcagtcctgtcctatataccctctaga (SEQ ID NO:12317) ctgcdgaccggtggcgatggccatcctcccagcagcagaaaacctggatagacggggtggaggggtggagtggagcggcgtgaaccgcctcgacaagct tgaacctgaccgcctcgctagctgcggggcyyccacyyygygagacyyygyctycacaaccaacctcaa gcaacctctcctcctccccttccggctgggactgcctgtggttccccagcgcgcatccaagccctgggcaacctaa caaccagttcgtgcagccgtcctggcgtatcgcgctctggtccctggcgtattggtggtggtggtggcagtygcagttttgg gaaatctcatcgtcatctggatcatcctggccacaagcgcatgaggactgtcaccaactacttccttgtgaacctggc ttctccgacgcctccatggccgcttcaacacgttggtcaatttcatctacgcgcttcatagcgagttggtacctttggcgc caactactgccgcttccagaacttctttcctatcacagctgtgttcgccagcatctactccatgacggccattgcggtgg

acaggtgaggagaggacagacagagggaaagagggagaactattgcagtatctttcagcttccagtcttatctgaagac cccggcaccaaagtgaccaggaggcagaaagaacttcagaggagtctcgtcttggctgcccgtgggtgagtggggaggg tccgggactgcagaccggtggcgatggccactctcccagcagcagaaacctggatagacgggggtggaggcgtgggtgca ccaagetggeaaceteteeteeteeteegegetgggaetgeetgtggetteeeegegeeeteeeageeetgggeea gttttgggaaatctcatcgtcatctggatcatcctggcccacaagcgcatgaggactgtcaccaactacttccttgtgaa cctggctttctccgacgcctccatggccgccttcaacacgttggtcaatttcatctacgcgcttcatagcgagtggtact ttggcgccaactactgccgcttccagaacttctttcctatcacagctgtgttcgccagcatctactccatgacggccatt gcggtggacaggtatatggctattattgatcccttgaaacccagactgtctgctacagcaaccaagattgtcattggaag getttggattetageatttetaettgeetteeeteagtgtetttatteeaaaaecaaagteatgeeaggeegtaetetee getttgtgeaatggeeagaaggteeeaaacaaeattteaettaeeatattategteattataetggtgtaetgttteeea ttgctcatcatgggtattacatacaccattgttggaattactctctggggaggagaaatcccaggagatacctgtgacaa gtatcatgagcagctaaaggccaaaaggatgtgtcaaaatgatgattattgttgtcatgacatttgctatctgctggc tgccctatcatatttacttcattctcactgcaatctatcaacaactaaatagatggaaatacatccagcaggtctacctg gctagcttttggctggcaatgagctcaaccatgtacaatcccatcatctactgctgtctgaataaaagatttcgagctgg Cttcaagagagcatttcgctggtgtcctttcatcaaagtttccagctatgatgagctagagctcaagaccaccaggtttc atccaaaccggcaaagcagtatgtacaccgtgaccagaatggagtccatgacagtcgtgtttgaccccaacgatgcagac accaccaggtccagtcggaagaaaagagcaacgccaagagacccaagtttcaatggctgctctcgcaggaattccaaatc 20 tgcctccgccacttcaagtttcataagctcaccctatacctctgtggatgaatattcttaattccatttcctgaggtaaa agattagtgtgagaccatcatggtgccagtctaggaccccattctcctatttatcagtcctgtcctatataccctctaga aacagaaagcaatttttaggcagctätggtcaaattgagaaaggtagtgtataaatgtgacaaagacactaataacatgt tagootocacccaaataaaatgggotttaaatttggtatatggctattattgatoocttgaaacccagactgtotgcta cagcaaccaagattgtcattggaagtatttggattctagcatttctacttgccttccctcagtgtctttattccaaaacc 25 aaagtcatgccaggccgtactctctgctttgtgcaatggccagaaggtcccaaacaatttcacgtaagttaattctct tttcccattgctcatcatgggtattacatacaccattgttggaattactctctggggaggagaaatcccaggagatacct gtgacaagtatcatgagcagctaaaggccaaaggtactggtccatgttgtttacctagcaaatgactttttcttt accatgtacaatcccatcatctactgctgtctgaataaaaggtaaaaacaaaactacgaaatgcaagttgcttgtcacaa aataacttttetttetgtggeetgetttteeteagatttegagetggetteaagagageatttegetggtgteettteat caaagtttccagctatgatgagctagagctcaagaccaccaggtttcatccaaaccggcaaagcagtatgtacaccgtga ccagaatggagtccatgacagtcgtgtttgaccccaacgatgcagacaccaccaggtccagtcggaagaaaagagcaacg 35 ccaagagacccaagtttcaatggctgctctcgcaggaattccaaatctgcctccgccacttcaagtttcataagctcacc ctagtettteageetteaggetgtttttggettgaagetetettggeeteetagtttetaeetaateatgteeetggtgg aggccatcagcctctggaatgaagggtgctggcagcggacaagaaggactggaagggagccctggatgccttcagtgcc gtccaggacccccactcccggatttgcttcaacattggctgcatgtacactatcctgaagaacatgactgaagcagagaa 40 ggcctttaccagaagcattaaccgagacaagcacttggcagtggcttacttccaacgagggatgctctactaccagacag agaaatatgatttggctatcaaagaccttaaagaagccttgattcagcttcgagggaaccagctgatagactataagatc ctggggctccagttcaagctgtttgcctgtgaggtgttatataaacattgctttcatgtatgccaagaaggaggaatggaa aaaagctgaagaacagttagcattggccacgagcatgaagtctgagcccagacattccaaaatcgacaaggcgatggagt gtgtctggaagcagaagctatatgagccagtggtgatccctgtgggcaagctgtttcgaccaaatgagagacaagtggct cagetggccaagaaggattacctaggcaaggcgacggtegtggcatetgtggtggatcaagacagtttetetgggtttge ccctctgcaaccacaggcagctgagctccacccagaccgaaaaccccagagatcttcagggctctggaaggggaggctc accgtgtgctatttgggtttgtgcctgagacaaaagaagactccaggtcatgccagggaacattgtctttgtcttgaag aagggcaatgataactgggccacggtcatgttcaacgggcagaaggggcttgttccctgcaactaccttgaaccagttga gttgcggatccaccctcagcagcagccccaggaggaaagctctccgcagtccgacatcccagctcctcctagttccaaag ccctggaaaaccccagctgtcaccaggccagaaacaaaaagaagagcctaaggaagtgaagctcagtgttcccatgccc tacacactcaaggtgcactacaagtacacggtagtcatgaagactcagcccgggctcccctacagccaggtccgggacat ggtgtctaagaaactggagctccggctggaacacactaagctgagctatcggcctcgggacagcaatgagctggtgccc tttcagaagacagcatgaaggatgcctggggccaggtgaaaaactactgcctgactctgtggtgtgagaacacagtgggt gaccaaggctttccagatgaacccaaggaaagtgaaaagctgatgctaataaccagacaacagaacctcagcttaagaa aggcagccaagtggaggcactcttcagttatgaggctacccaaccagaggacctggagtttcaggaaggggatataatcc tggtgttatcaaaggtgaatgaagaatggctggaaggggagtgcaaaggggaaggtgggcattttccccaaagtttttgtt 60 ggagatggggacaggtgaatggaggagttaggggagaggaaaagtggatggaaggtgtctggaaagggcacgagagagtct gcccaaggagtaagtacaaatattcctgtttctgaaccattactgtaattggctcttaaggcttgaagtaaccttatagg 65 ttactcataaggcatatacaaataaacttgtttgttttcttttttc (SEQ ID NO:12319) ctagtctttcagccttcaggctgtttttggcttgaagctctcttggcctctagtttctacctaatcatgtccctggtgg aggocatcagcetetggaatgaaggggtgetggeageggacaagaaggaetggaagggagecetggatgeetteagtgee gtccaggaccccactcccggatttgcttcaacattggctgcatgtacactatcctgaagaacatgactgaagcagagaa ggcctttaccagaagcattaaccgagacaagcacttggcagtggcttacttccaacgagggatgctctactaccagacag 70 agaaatatgatttggctatcaaagaccttaaagaagccttgattcagcttcgagggaaccagctgatagactataagatc ctggggctccagttcaagctgtttgcctgtgaggtgttatataacattgctttcatgtatgccaagaaggaggaatggaa aaaagctgaagaacagttagcattggccacgagcatgaagtctgagcccagacattccaaaatcgacaaggcgatggagt gtgtctggaagcagaagctatatgagccagtggtgatccctgtgggcaagctgtttcgaccaaatgagagacaagtggct cagctggccaagaaggattacctaggcaaggcgacggtcgtggcatctgtggtggatcaagacagtttctctgggtttgc ccctctgcaaccacaggcagctgagcctccacccagaccgaaaaccccagagatcttcagggctctggaaggggaggctc accgtgtgctatttgggtttgtgcctgagacaaaagaagagctccaggtcatgccagggaacattgtctttgtcttgaag aagggcaatgataactgggccacggtcatgttcaacgggcagaaggggcttgttccctgcaactaccttgaaccagttga gttgeggatecaccetcagcagcagccccaggaggaaagctctccgcagtccgacatcccagctcctcctagttccaaag cccctggaaaaccccagctgtcaccaggccagaaacaaaaagaagagcctaaggaagtgaagctcagtgttcccatgccc tacacactcaaggtgcactacaagtacacggtagtcatgaagactcagcccgggctcccctacagccaggtccgggacat ggtgtctaagaaactggagctccggctggaacacactaagctgagctatcggcctcgggacagcaatgagctggtgcccc tttcagaagacagcatgaaggatgcctggggccaggtgaaaaactactgcctgactctgtggtgtgagaacacagtgggt

gaccaaggetttecagatgaacccaaggaaagtgaaaaagetgatgetaataaccagacaacagaacetcagettaagaa aggcagccaagtggaggcactcttcagttatgaggctacccaaccagaggacctggagtttcaggaaggggatataatcc tggtgttatcaaaggtgaatgaagaatggctggaaggggagtgcaaagggaaggtgggcattttccccaaagtttttgtt gaagactgcgcaactacagatttggaaagcactcggagagaagtctaggatgtttcacaaactacaaagctgaagaaaat gaagccctattacttgtttgtaagatttagcacccttctgctgtatactgtactgagacattacagtttggaagtgttaa ctatttattccctgttaaaatttaacctactagacaatgatgtgagtacccaggatgatttcctggggcacagtgggtga gcccaaggagtaagtacaaatattcctgtttctgaaccattactgtaattggctcttaaggcttgaagtaaccttatagg gcagagetgggcaccacagggagetaggetetgtgageegtggeteateteacaceteeteactgeettgcateatggee ggtcagaaggaactgaaaggcttcttgtcccagtgagatagctggggaaggcagactcacattttatgctgcat ttatttctccatccactagactgctgattttctccctctgtcctggagatatgatttggctatcaaagaccttaaagaag ccttgattcagcttcgagggaaccagctgatagactataagatcctggggctccagttcaagctgtttgcctgtgaggta aggagaacaggggctggctgggcaggaggggatcatggctggatggctgacagtcagatgcacagtgatctgttgt cacctccaggagcttggaaaagccatttctcctctgccttgagactcagattttccttgaagaaaagactgagatggatt 20 atttcaggctcatcaaggca (SEQ ID NO:12322)
ttccctggcaccttgattttggagtagtctcaagttttatgtttgcggtctgtacttttctaggtgttatataacattgct
ttcatgtatgccaagaaggaggaatggaaaaaagctgaagaacagttagcattggccacgagcatgaagtctgagcccag acattccaaaatcgacaaggcgatggagtgtgtctgggtaagcgtattggtgatgcaggtgttgagaggatgtcactgga ttctcatttgtctcagaggacatgccattgagaagccataaaagtggtgcttttactttctgtgagtctgggtaacactg atottagggtatagttocaettaagatettgaatetgtgetgagaagetgaggeetagagtatgggatggeagageetgg catcacaccacccttggagtggggctccttggcaatgcaggagaacaggatattggatgctggagcagtgctgcacagac tctaagcactgagagggcagagtccatgtctgcttgatcaccactgagtcctcacagcctggcacagtgctaggccacat aacagctetcagcaaaaatgttttgttttgtttttgagatggagtetcgctetgttgcccagcetggagtgcagtggtgtg atctcagctcactgcagcctctgcctcctgggttcaagcaattctgctgcctcagccgcccaagtagctgggattacagg tgcatgccaccatgcctggctaatttttgtatttttaatagagacggggttttgccatgt (SEQ ID NO:12323) gaattettgeatetatteaetgagggaggeaggacaageategteaeeeecatttteaeataagggaatgetaegtttte tgtgttacagaagcagaagctatatgagccagtggtgatccctgtgggcaagctgtttcgaccaaatgagagacaagtgg gcaggagaatcacttgaacctggaaggcagaggttgcagtgagctgagtcactccactgcactccagtctgggtaacaga gcgtgctccgtctcaaaaaaaaaaaaaaaaaaaaaaaatttgatgttatacaaattgcacctcaatttaaaaacatttc tttttaaaaagagaagaaagcaagcctgtgttagcaggggtggatgaatgctcgttttcaaaatggctgatgcaattcttc ttttttaagaggagaagcaagcctgtgttagcaggggtggggtgaatgctcgttcttcagttgctgaaatcctaat cagaggctcaggaatctaatccttagttactgtcaacgtctgaaaaccaggctcacgtaagaacaggtctagggcatgag caaagagggagacccagaagaatggaaacagtgctggcagagcctcacaccctctgtccttgattttaggtcgtggcat ctgtggtggatcaagacagtttctctgggtttgcccctctgcaaccacaggtaaggcagtcctgaccttctccatggacc taggtctcgagagctttctgtgaagcattcaattcgagagaactatgtgtgctgagttgcctgattgtaaggccctca agtggccctcagtgcagctgagggattctgccctctctcagtcttggttccatggtggagaaaataaggcagt gtcaggcttcaccccaagtcctctgaagctaactctcctgcttccccacaaatgccggtcttcac (SEQ ID NO:12325) actgaattgctgtgctagtgaaacctgtacctgggagctggtgggaggtgttatttcccagtgtttagtcagggtgactg tgccctcttcctagacagtgttctcatcagtcagaaatgcgttatttgattttctggtctggaagaatgctcaaattacc attagccgtttgttgttgtctctcccctgctttccctcattgccttttccgttttcacttctcctgaatgttcaataggcagc tgagcctccacccagaccgaaaaccccagagatcttcaggtaagttagattcaaatccataaatagaatatcaagcgcca agcctgagctgatggcaagaaagggagggaagaagatgaaggtggggtcagggtctaaatcttgttgaattttctggaat 50 gtcaggcttcttctagaatgtcaggctagaaaggaatgcctagaagaatgtcttctagaatgtcaggctagaaaggaatg atatatggggatgggagtettgactgtggtggggetggeeateagggettggetgeagetaegtggteeattggeeetet gtccacgtgcacagccaccacatgcaggggttgtgctgagggcagtgtgtcctgtggaacatagctacctgggaccagat gctgacctcaggttggagatcggtttcgcactggctgcagtcctctgacggggcaggccagagctctct (SEQ ID NO:12326) 55 gtggagttagagccaggctgagccaagtccctggctccaagttcagtgtatttgcgccatggcatcatgtgaggggatgg gggctggatcttgtgtctatcctctgcagggctctggaaggggaggctcaccgtgtgctatttgggtttgtgcctgagac aaaagaagagctccaggtcatgccagggaacattgtctttgtcttgaagaagggcaatgataactgggccacggtcatgt tcaacgggcaggtatgcagaggatcaggggctggtgcgatgggcatgggatcctggcagcaaatgcagtctctgtggagcagtatctgctgctcttttgcagaccagcaagttcttttgtctgttcgtcatcccttccccaggactctgggctgttct gtggtgtgggtactgatgagcacatctttatttttcctttctgattctgtggtgctgcactgcagaaggggcttgttcc gactgagtttgttcatgtgttcatgaccttcatgcttccccagggcggatttccccacagtttactaaggttaataatt gccccacaaattaaagggtaagaggttggggccctatttgaagaggtttcatctgtgtggcaggggctggccaagga tgttcattcaccatcttcttttgttttactccctactttttccattcaggccagaacaaaaagaagagcctaaggtaac aggaagagccaaaggagggtcgaaccagttgctaccttacagagtccatgagctagggaccttcttaatagcctcctcc actatcatgcacacacttcctactacccaagctagtgggccagatcttactcagtaggaattc (SEQ ID NO:12329) 75 ctctcccctgctgtattgggtaccccctgtgccaaatcacgaaactgcggtgatccaggatgttgagagaaagcctcaga cactcaggagttccctttgtttcctcccactcaggaagtgaagctcagtgttcccatgccctacacactcaaggtgcac tacaagtacacggtagtcatgaagactcagcccgggctcccctacagccaggtccgggacatggtgtctaagaaactgga gcctcgggacagcaatgagctggtgcccctttcagaagacagcatgaaggatgcctggggccaggtgaaaaactactgcc

tgactctgtggtgtgagaacacagtggtgagtgcaatgaggggcatctaaagttacatttccactgagccacttcctcaa

caatttgaaatttatcaagcaccttctgtgtactaggcactatatgtggtgttggggatatggtgtgtaataagtcacag ctctgcctcccttttacctgcatcctcaccccatttgcagcaggagagagtttcccacaagag (SBQ ID NO:12330) ttcataaagagcatataagctctacacaaggcactgatcacaaactttatgagtttatatcccaggttctactttgacat ttcgctgtttcctttagtgatgttcacttggcaggaaattgggaaaattaacaggccctttattatttcaggg tgaccaaggctttccagatgaacccaaggaaagtgaaaaagctgatgctaataaccagacaacagaacctcagcttaaga aaggcagccaagtggaggcactcttcagttatgaggctacccaaccagaggacctggagtttcaggaaggggatataatc ctggtgttatcaaagggtaagtgctactccaagactatagaaacaaatttacatgttagcagaaacaaggtcaagggcag agagaagaaatatcaataatctacaaacaaaactttagccagtgttttca (SEQ ID NO:12331) gtcaattettgaccetettetetatetggtaactttttgaaaaacataatttateetettetteattttgeteattateat 10 gtttaagacagatcaataagatggttaaaccctgtgttcactctcaaaccactttgcaatactgtcttttccctgttgat ttccccaaagtttttgttgaagactgcgcaactacagatttggaaagcactcggagagaagtctaggatgtttcacaaac acagttiggaagigttaactatttattecctgtiaaaatttaacctactagacaatgatgtgagtacccaggatgatttc ctggggcacagtgggtgaggagatggggacaggtgaatggaggagttaggggagaggaaaagtggatggaagtgtctgga aagggcacgagagagtettecaggtactgateetgttettgetetgagtgetagetagecagetgtgtteacactgtaa acattcatcaagetgtacatttggtgcacttttetgtgteataccacaataaaaaaaaacctatcatettacaaaaacaa gacacccaagtecaggcccaaggagtaagtacaaatattcctgtttctgaaccattactgtaattggctcttaaggcttg 20 cggtgttcatgaagctagttcgtaa (SEQ ID NO:12332) 25 aggccatcagcctctggaatgaaggggtgctgcagcggacaagaaggaactggaagggagccctggatgccttcagtgccgtcaggacccccactcccggatttgcttcaacattggctgcatgtacactatcctgaagacactgaagacgaagaa ggcctttaccagaagcattaaccgagacaagcacttggcagtggcttacttccaacgagggatgctctactaccagacag agaaatatgatttggctatcaaagaccttaaagaagccttgattcagcttcgagggaaccagctgatagactataagatc 30 ctggggctccagttcaagctgtttgcctgtgaggtgttatataaacattgctttcatgtatgccaagaaggaggaatggaa aaaagctgaagaacagttagcattggccacgagcatgaagtctgagcccagacattccaaaatcgacaaggcgatggagt gtgtctggaagcagaagctatatgagccagtggtgatccctgtgggcaagctgtttcgaccaaatgagagacaagtggct cagctggccaagaaggattacctaggcaaggcgacggtcgtggcatctgtggtggatcaagacagtttctctgggtttgc cctctgcaaccacaggcagctgagcctccacccagaccgaaaaccccagagatcttcagggctctggaaggggagctc 35 accgtgtgctatttgggtttgtgcctgagacaaaagaagactccaggtcatgccagggaacattgtctttgtcttgaag aagggcaatgataactgggccacggtcatgttcaacgggcagaaggggcttgttccctgcaactaccttgaaccagttga gitgeggatecaccetcageagcacceaggaggaaageteteegcagteegacateccagetectectagttecaaag cccctggaaaaccccagctgtcaccaggccagaaacaaaaagaagacctaaggaagtgaagctcagtgttcccatgccc tacacactcaaggtgcactacaagtacacggtagtcatgaagactcagcccgggctcccctacagccaggtccgggacat ggtgtctaagaaactggagctccggctggaacacactaagctgagctatcggcctcgggacagcaatgagctggtgccc tttcagaagacagcatgaaggatgcctggggccaggtgaaaaactactgcctgactctgtggtgtgagaacacagtgggt gaccaaggetttecagatgaacccaaggaaagtgaaaagctgatgctaataaccagacaacagaacctcagcttaagaa aggcagccaagtggaggcactcttcagttatgaggctacccaaccagaggacctggagtttcaggaaggggatataatcc tggtgttatcaaaggtgaatgaagaatggctggaaggggagtgcaaagggaaggtgggcattttccccaaagtttttgtt gaagactgcgcaactacagatttggaaagcactcggagagaagtctaggatgtttcacaaactacaaagctgaagaaaat gaagccctattacttgtttgtaagatttagcacccttctgctgtatactgtactgagacattacagtttggaagtgttaa 45 ctatttattccctgttaaaatttaacctactagacaatgatgtgagtacccaggatgatttcctggggcacagtgggtga ggagatggggacaggtgaatggaggagttagggggagaggaaaagtggatggatgtctggaaagggcacgagagagtct 50 gcccaaggagtaagtacaaatattcctgtttctgaaccattactgtaattggctcttaaggcttgaagtaaccttatagg aagetetettggeeteetagtttetaeetaateatgteeetggtggaggeeateageetetggaatgaaggggtgetgge ageggacaagaaggactggaagggagccetggatgccttcagtgccgtccaggacccccactcccggatttgcttcaaca 55 tiggetgeatgtaeactateetgaagaacatgaetgaagcagagaaggeetttaecagaagcattaacegagacaagcac agccttgattcagcttcgagggaaccagctgatagactataagatcctggggctccagttcaagctgtttgcctgtgagg tgttatataacattgctttcatgtatgccaagaaggaggaatggaaaaaagctgaagaacagttagcattggccacgagc atgaagtctgagcccagacattccaaaatcgacaaggcgatggagtgtgtctggaagcagaagctatatgagccagtggt gatccctgtgggcaagctgtttcgaccaaatgagagacaagtggctcagctggccaagaaggattacctaggcaaggcga cggtcgtggcatctgtggtggatcaagacagtttctctgggtttgcccctctgcaaccacaggcagctgagcctccaccc 65 acaaaaagaagagctaaggaagtgaagctcagtgttcccatgccctacacactcaaggtgcactacaagtacacggtag tcatgaagactcagcccgggctcccctacagccaggtccgggacatggtgtctaagaaactggaagctccggctggaacac actaagctgagctatcggctctgggacagcaatgagctggtgccctttcagaagacagcatgaaggatgcctggggcca ggtgaaaaactactgcctgactctgtggtgtgagaacacagtgggtgaccaaggctttccagatgaacccaaggaaagtg 70 aaaaagctgatgctaataaccagacaacagaacctcagcttaagaaaggcagccaagtggaggcactcttcagttatgag aggggagtgcaaagggaaggtgggcattttccccaaagtttttgttgaagactgcgcaactacagattttggaaagcactc ggagagaagtetaggatgtttcacaaactacaaagetgaagaaaatgaagecetattaettgtttgtaagatttagcace 75 caatgatgagtacccaggatgatttcctggggcacagtgggtgaggagatggggacaggtgaatggaggagttagggg agaggaaaagtggatggaagtgtctggaaagggcacgagagagtcttccaggtactgatcctgtttcttgctctgagtgc tagctagccagctgtgttcacactgtaaacattcatcaagctgtacatttggtgcacttttctgtgtcataccacaataa aaccattactgtaattggctcttaaggcttgaagtaaccttataggttactcataaggcatatacaaataaacttgtttg ttttctttttcgcagagctgggcaccacagggagctaggctctgtgagccgtggctcatctcacacctcctcactgccttgcatcatggccatgtctggacccttctcctcaggcctttaccagaagcattaaccgagacaagcacttggcagtggc

ctctgtcctggagatatgatttggctatcaaagaccttaaagaagccttgattcagcttcgagggaaccagctgatagac gaggacatgccattgagaagccataaaagtggtgcttttactttctgtgagtctgggtaacactgatcttagggtatagt tccacttaagatettgaatetgtgetgagaagetgaggeetagagtatgggatggeagageetggeateacaceett ggagtggggctccttggcaatgcaggaacaggatattggagagacagtgctggagcagtgctgcacagactctaagcactgagag ggcagagtccatgtctgcttgatcaccactgagtcctcacagcctggcacagtgctaggccacataacagctctcagcaa aaatgttttgttttgtgttttgagatggagtctcgctctgttgcccagcctggagtgcagtggtgtgtgatctcagctcactgc agcetetgeeteetgggtteaageaattetgetgeeteageegeecaagtagetgggattacaggtgeatgecaceatge aagcatcgtcacccccattttcacataagggaatgctacgttttctgtgtttacagaagcagaagctatatgagccagtgg tgatocctgtgggcaagotgtttcgaccaaatgagagacaagtggctcagctggccaagaaggattacctaggcaaggcg 20 aaggcaggagaatcacttgaacctggaaggcagaggttgcagtgagctgagtcactccactgcactccagtctgggtaac ttctttttaagagagaagaagcaagcctgtgttagcaggggtggggtgaatgctcgtttcttcagttgctgaaatcct aatccagaggctcaggaatctaatccttagttactgtccacgtctgaaaccaggctcacgtaagaacaggtctagggcat gagcaaagagggagacccagaagaatggaaacagtgctggcagagcctcacaccctcctgtccttgattttaggtcgtgg 25 catctgtggtggatcaagacagtttctctgggtttgccctctgcaaccacaggtaaggcagtcctgaccttctccatgg acctaggtetegagagetttetgtgaageatteaattegagagaetatgtgtgetgagttgeetgattgtaagggeteet tcaagtggccctcagtgcagctgaggattctgcctgccctctctcagtcctggtttccatggctggtgaggaaataaggc agtgtcaggcttcaccccaagtcctctgaagctaactctcctgcttccccacaaatgccggtcttcacacattcatcaag 30 ctgagttaggttctcatggactacaacactcaattccacagagaattaatagaattacatacctttgtacattctcagag aggaacatgtgttaagaactcaatactgaatatatcaatcgccaacatttaagtgatgaaaagcagcggtgttcatga 35 ggtgaaat (SEQ ID NO:12334) ccagctgatattccagcccacagcaatggagccacatgactcctcccacatggactctgagttccgatacactctcttcc cgattgtttacagcatcatctttgtgctcggggtcattgctaatggctacgtgctgtggggtctttgcccgcctgtaccct tgcaagaaattcaatgagataaagatcttcatggtgaacctcaccatggcggacatgctcttcttgatcaccctgccact 40 tcaacace tactg ctctgtggccttcctgggcgtcatcacttataaccgcttccaggcagtaactcggcccatcaagactgetcaggccaacacccgcaagegtggcatctettgtcettggtcatetgggtggccattgtgggagetgcatcetaett cctcatectggactctaccaacacagtgcccgacagtgctggctaaggcaacgtcactcgctgctttgagcattacgaga agggcagcgtgccagtcctcatcatccaccatcttcatcgtgttcagcttcttcctggtcttcctcatcatcctcttctgc aacctggtcatcatccgtaccttgctcatgcagccggtgcagcagcagcgcaacgctgaagtcaagcgccgggcgctgtg gatggtgtgcacggtcttggcggtgttcatcatctgcttcgtgccccaccacgtggtgcagctgccctggacccttgctg agctgggcttccaggacagcaaattccaccaggccattaatgatgcacatcaggtcaccctctgcctccttagcaccaac tgtgtcttagaccctgttatctactgtttcctcaccaagaagttccgcaagcacctcaccgaaaagttctacagcatgcg 50 tgccactttggattgtctactaccaaaccagggcaactggatactccccaaatttctgtgcaacgtggctgcctttcttcatcaacacctactgctctgtgccttcctgtgccatcagtgccatcacttataaccgcttccaggcagtaactcggcccat 55 caagactgctcaggccaacacccgcaagggtggcatctcttttgtccttggtcatctgggtggccattgtgggagctgcat cctacttcctcatcctggactccaccaacacagtgcccgacagtgctggctcaggcaacgtcactcgctgctttgagcat tacgagaagggcagcgtgccagtcctcatcatccaccatcttcategtgttcagcttcttcctggtcttcctcatcatcct cttctgcaacctggtcatcatccgtaccttgctcatgcagccggtgcagcagcagcgcaacgctgaagtcaagcgccggg 60 cgctgtggatggtgtgcacggtcttggcggtgttcatcatctgcttcgtgcccaccacgtggtgcagctgccctggacc cttgctgagetgggcttccaggacagcaaattccaccaggccattaatgatgcacatcaggtcaccctctgcctccttag caccaactgtgtcttagaccctgttatctactgtttcctcaccagaagttccgcaagcacctcaccgaaaagttctaca gcatgcgcagtagccggaaatgctccccgggccaccacggatacggtcactgaagtggttgtgccattcaaccagatccct ggcaatteeeteaaaaattagteeetgetteeaggeetgaagtetteteeteeatgaaacateatgaetgagetggggga agaagggatatctactgtgggtctgggcaccacctctgtggcactggtgggccattagatttggaggctacctcacctgg gcagggatgatgcagagccaggctgttggaaaatccagaactcaaatgagccccttcatccgcctgtgggcgcatactac tgggggaagactttaaaccacctagttctcccactggggcatcggtctaaagctttgggggagtggcccagtggctcac acctgtaatcccagcactttgggaggccgaggtgggcagatcatgggtcaagagatcgagacatcctggccaacattgta aaaccccatctctactaaaacattacaaaaattagccgggcatggtgcacacgcctgtagtcccagctactcaggaggctg
aggcaggagaatcgcttgaacctgggaggcagaggttgcagtgaacctagattgcaccattgcactctagcctggcaaca
gaggcagattccctcctgcc (SEQ ID NO:12336) 70 gaggaggcggaggttgaggttgagatcacgccactgcactccagcctgggcagcaagagtgaaactccatctgaaa aaaaaaaaagattcaacatgaacttctgaggggacgacatcatcattctaaccatggcaaggagtcttggaactgatgaaat ggaacagtcccttcttgtgtcctttattaaccagaatttttgtgtggtcttccaggcaccaccaggaccagctgatcattc cagcccacagcaatgagagcacacacagaatgtttacag 75 catcatctttgtgctcggggtcattgctaatggctacgtgctgtgggtctttgcccgcctgtacccttgcaagaaattca atgagataaagatcttcatggtgaacctcaccatggcggacatgctcttcttgatcaccctgccactttggattgtctac ctctgtggccttcctgggcgtcatcacttataaccgcttccaggcagtaactcggcccatcaagactgctcaggccaaca cccgcaagcgtggcatctctttgtccttggtcatctgggtggccattgtgggagctgcatcctacttcctcatcctggac tccaccaacacagtgcccgacagtgctggctcaggcaacgtcactcgctgctttgagcattacgagaagggcagcgtgcc

agtCctcatcatccacatcttcatcgtgttcagcttcttcctggtcttcctcatcatcctcttctgcaacctggtcatca tccgtaccttgctcatgcagccggtgcagcagcagcgctaagctcacaggccgggcgctgtggatggtgtgcacg gtcttggcggtgttcatcatctgcttcgtgcccaccacgtggtgcagctgccctggacccttgctgagctgggcttcca ggacagcaaattccaccaggccattaatgatgcacatcaggtcaccctctgcctccttagcaccaactgtgtcttagacc ctgttatctactgtttcctcaccaagaagttccgcaagcacctcaccgaaaagttctacagcatgcgcagtagccggaaa tgctcccgggccaccacggatacggtcactgaagtggttgtgccattcaaccagatccctggcaattccctcaaaaatta gtccctgcttccaggcctgaagtcttctcctccatgaacatcatggactgagctgggggaagaagggatatctactgtgg tctgggcaccacctctgtgggcactggtgggccattagatttggaggctacctcacctgggcagggatgatggcagacga ggctgttggaaaatccagaactcaaat (SEQ ID NO:12337) ccagctgatattccagcccacagcaatggagccacatgactcctccacatggactctgagttccgatacactctcttcc cgattgtttacagcatcatctttgtgctcggggtcattgctaatggctacgtgctgtgggtctttgcccgcctgtaccct tgCaagaaattcaatgagataaagatcttcatggtgaacctcaccatggcggacatgctcttcttgatcaccctgccact tcaacacctactgctctgtggccttcctgggcgtcatcacttataaccgcttccaggcagtaactcggcccatcaagact gctcaggccaacacccgcaagcgtggcatctctttgtccttggtcatctgggtggccattgtgggagctgcatcctactt cctcatectggactctaccaacagtgcccgacagtgctggctcaggcaacgtcactcgctgctttgagcattacgaga agggcagcgtgccagtcctcatcatccacctcttcatcgtgttcagcttcttcctggtcttcctcatcatcctcttctgc aacctggtcatcatccgtaccttgctcatgcagccggtgcagcagcagcgaacgctgaagtcaagcgccgggcgctgtg gatggtgtgcacggtcttggcggtgttcatcatctgcttcgtgccccaccacgtggtgcagctgccctggacccttgctg 20 agctgggcttccaggacagcaaattccaccaggccattaatgatgcacatcaggtcaccctctgcctccttagcaccaac tgtgtcttagaccctgttatctactgtttcctcaccaagaagttccgcaagcacctcaccgaaaagttctacagcatgcg 25 ctgtgcaacgtggctggcttttcttcatcaacacctactgctctgtggccttcctgggcgtcatcacttataaccg cttccaggcagtaactcggcccatcaagactgctcaggccaacacccgcaagcgtggcatctctttgtccttggtcatctgggcggccattgtgggagctgcatcctacttcctcatcctggactccaccaacaagtgccgacagtgctggctcaggc 30 aacgtcactcgctgctttgagcattacgagaagggcagcgtgccagtcctcatcatccacatcttcatcgtgttcagctt cttcctggtcttcctcatcatcctcttctgcaacctggtcatcatccgtaccttgctcatgcagccggtgcagcagcagc gcaacgctgaagtcaagcgccgggcgctgtgggatggtgtgcacggtcttggcggtgttcatcatctgcttcgtgccccac cacgtggtgcagctgccctggacccttgctgagctgggcttccaggacagcaaattccaccaggccattaatgatgcaca tcaggtcaccctctgcctccttagcaccaactgtgtcttagaccctgttatctactgtttcctcaccaagaaqttccqca agcacctcaccgaaaagttctacagcatgcgcagtagccggaaatgctcccgggccaccacggatacggtcactgaagtg gttgtgccattcaaccagatccctggcaattccctcaaaaattagtccctgcttccaggcctgaagtcttctcctccatg aaacatcatgactgagctgggggaagaagggatatctactgtgggtctgggcaccacctctgtggcactggtgggccatt agatttggaggctacctcacctgggcagggatgatgcagagccaggctgttggaaaatccagaactcaaatgagcccctt catccgcctgtgggcgcatactacagtaactgtgactgatgactttatcctgagtcccttaatcttatggggccggaagg aatgtcagggccaggtgcagaccttgggggaagactttaaaccacctagttctcccactggggcatcggtctaaagcttt gggggagtggccccagtggctcacacctgtaatcccagcactttgggaggccgaggtgggcagatcatgggtcaagagat cgagacatcctggccaacattgtaaaaccccatctctactaaaacatacaaaaattagccgggcatggtgcacacgcctg tagtcccagctactcaggaggctgaggcaggagaatcgcttgaacctgggaggcagaggttgcagtgaacctagattgca 45 ccattgcactctagcctggcaacagaggcagattccctcctgcccgggaggcggaggttgcggtgagctgagatcacgcc atcatcattctaaccatggcaaggagtcttggaactgatgaaatggaacagtcccttcttgtccctttattaaccagaat 50 cggacatgctcttcttgatcaccctgccactttggattgtctactacaaaaccagggcaactggatactccccaaattc
ctgtgcaacgtggctgcctttttttcttcatcaacacctactgctctgtggccttcctgggcgtcatcacttataaccg cttccaggcagtaactcggcccatcaagactgctcaggccaacacccgcaagcgtggcatctctttgtccttggtcatct gggtggccattgtgggagctgcatcctacttcctcatcctggactccaccaacacagtgcccgacagtgctggctcaggc 55 aacgtcactcgctgctttgagcattacgagaagggcagcgtgccagtcctcatcatccaccatcttcatcgtgttcagctt cttcctggtcttcctcatcatcctcttctgcaacctggtcatcatccgtaccttgctcatgcagccggtgcagcagcagc gcaacgctgaagtcacaggccgggcgctgtggatggtgtgcacggtcttggcggtgttcatcatctgcttcgtgccccac cacgtggtgcagctgccctggacccttgctgagctgggcttccaggacagcaaattccaccaggccattaatgatgcaca tcaggtcaccctctgcctccttagcaccaactgtgtcttagaccctgttatctactgtttcctcaccaagaagttccgca agcacctcaccgaaaagttctacagcatgcgcagtagccggaaatgctcccgggccaccacggatacggtcactgaagtg gttgtgccattcaaccagatccctggcaattccctcaaaaattagtccctgcttccaggcctgaagtcttctcctccatg aacatcatggactgagctgggggaagaagggatatctactgtggtctgggcaccacctctgtgggcactggtgggccatt agatttggaggctacctcacctgggcagggatgatggcagacgaggctgttggaaaatccagaactcaaat (SEQ ID No:12338) ctcctcctgcacaccttccgcacacctccctcgctctcccacaccactggcaccaggccccgcacacctgctcggctgca ggagaatggctactcatcacacgctgtggatgggactggtcctgctggggctgctggggcggcctacaggcagcacccgag tgacctccaccttcctcaggaaaaaccagtgtgagacccgaaccatgctgctgcagcccggggactccctcggctcctacagctaccggagtcccactggggcagcacctactctgtgtcagtgtggagaactagactacgaccactagccgtgt cagccagggcagcaagggccccggcgaggacttccgcatggccaccctctacagccgaacccagacccccagggctgagt 70 ggagcaagaggtggttggggggggaccatggctgacgttttcccggggcaacgactccacggcgtctcaggacgtggccaa ccgcttcgcccgcaaaggggcgctgaggcagaagaacgtgcacgaggtgaaggaccacaaattcatcgcgcgcttcttca agcagcccaccttctgcagccactgcaccgacttcatctgggggtttgggaaacaaggcttccagtgccaagtttgctgt tttgtggtccacaagaggtgccatgaatttgttactttttcttgtccgggtgcggataagggacccgacactgatgacccaggagacccgacactgatgaccccaggagacccaagttcaaaatccacacttacggaagccccaccttctgcggtcactgtgggtcactgctctatggac ttatccatcaagggatgaaatgtgacacctgcgatatgaacgttcacaagcaatgcgtcatcaatgtccccagcctctgc ggaatggatcacactgagaagaggggggggatttacctaaaggctgaggttgctgatgaaaagctccatgtcacagtacq

agatgcaaaaaatctaatccctatggatccaaacgggctttcagatccttatgtgaagctgaaacttattcctgatccca

agaatqaaaqcaaqcaaaaaccaaaaccatccgctccacactaaatccgcagtggaatgagtcctttacattcaaattg aaaccttcagacaaagaccgacgactgtctgtagaaatctgggactgggatcgaacaacaaggaatgacttcatgggatc cctttcctttggagtttcggagctgatgaagatgccggccagtggatggtacaagttgcttaaccaagaagaaggtgagt cttcaatttcctcatggtgttgggaaaggggagttttggaaaggtgatgcttgccgacaggaagggcacagaagaactgt atgcaatcaaaatcctgaagaaggatgtggtgattcaggatgatgacgtggagtgcaccatggtagaaaagcgagtcttg gccctgcttgacaaacccccgttcttgacgcagctgcactcctgcttccagacagtggatcggctgtacttcgtcatgga atatgicaacggtggggaccicatgtaccacaitcagcaagtaggaaaatitaaggaaccacaagcagtattctatgcgg cagagatttccatcggattgttctttcttcataaaagaggaatcatttatagggatctgaagttagataacgtcatgttg ctgtgggactccagattatatcgccccagagataatcgcttatcagccgtatggaaaatctgtggactggtgggcctatg gegteetgttgtatgaaatgettgeegggeageeteeatttgatggtgaagatgaagacgagetattteagtetateatg gagcacaacgtttcctatccaaaatccttgtccaaggaggctgtttctatctgcaaaggactgatgaccaaacaccagc 15 caageggetgggetgtgggectgagggggagagggacgtgagagagcatgcettetteeggaggategactgggaaaaaac tggagaacagggagatccagccaccattcaagcccaaagtgtgtggcaaaggagcagagaactttgacaagttcttcaca cgaggacagcccgtcttaacaccacctgatcagctggttattgctaacatagaccagtctgattttgaagggttctcgta ccagccctccccgcagtggaagtgaatccttaaccctaaaattttaaggccacggcttgtgtctgattccatatggaggc ggaag (SEQ ID NO:12340) cttatcacagttcaagtgatttccagaagttccagggcttctgagagaccatcaagggaactttaacaacttgacaaatg tccttgaagtaagatgcctcatctttagggaaaaatggggtttggatttctgcttaggcaaagtctcctgcagttcatcc ttctctgtcctcttcttgcttcaggcttggggaccgtcctgctgtccccactgtggtggcaatcaggacctaaggtgaa ccgccqagcgagggcgaggaggagcaccgtgcgcttcgcccgcaaaggcgccttccggcagaagaacgtgcatgaggtcaa gaaccacaaattcaccgcccgcttcttcaagcagcccaccttctgcagccactgcaccgacttcatctggggcttcggga agcagggattccagtgccaagtttgctgctttgtggtgcacaagcggtgccatgaatttgtcacattctcctgccctggc 35 gctgacaagggtccagcctccgatgacccccgcagcaaacacaagtttaagatccacacgtactccagccccacgttttg tgaccactgtgggtcactgctgtatggactcatccaccaggggatgaaatgtgacacctgcatgatgatgtgcacaagc gctgcgtgatgaatgttcccagcctgtgtggcacggaccacacggagcgccgcggcgcatctacatccaggcccacatc gacagggacgteeteattgteetegtaagagatgetaaaaacettgtaeetatggaceecaatggeetgteagateecta cgtaaaactgaaactgattcccgatcccaaaagtgagagcaaacagaagaccaaaaaccatcaaatgctccctcaaccctg agtggaatgagacatttagatttcagctgaaagaatcggacaaagacagaagactgtcagtagagatttgggattgggat ttgaccagcaggaatgacttcatgggatctttgtcctttgggatttctgaacttcagaaggccagtgttgatggctggtt ggcagaaatttgagagggccaagatcagtcagggaaccaaggtcccggaagaaaaggcagccaacactgtctccaaattt gacaacaatggcaacagagaccggatgaaactgaccgattttaacttcctaatggtgctggggaaaggcagctttggcaa cggccggttcaaggagccccatgctgtattttacgctgcagaaattgccatcggtctgttcttcttacagagtaagggca tcatttaccgtgacctaaaacttgacaacgtgatgctcgattctgagggacacatcaagattgccgattttggcatgtgt 50 aaggaaaacatctgggatggggtgacaaccaagacattctgtggcactccagactacatcgcccccgagataattgctta aaggggaggatgaagatgaactcttccaatccatcatggaacacaacgtagcctatcccaagtctatgtccaaggaagct gtggccatctgcaaagggctgatgaccaaacacccaggcaaacgtctgggttgtggacctgaaggcgaacgtgatatcaa agagcatgcattttttccggtatattgattgggagaaacttgaacgcaaaggatccagccccttataagccaaaagcta gagacaagagagacacctccaacttcgacaaagagttcaccagacagcctgtggaactgacccccactgataaactcttc atcatgaacttggaccaaaatgaatttgctggcttctcttatactaacccagagtttgtcattaatgtgtaggtgaatgc ttgaaaatgtttagtttagaataagcgcattatccaattatagaggtacaatttttccaaacttccagaaactcatcaaat gaacagacaatgtcaaaactactgtgtctgataccaaaatgcttcagtatttgtaatttttcaagtcagaagctgatgtt cctggtaaaagtttttacagttattctataatatcttctttgaatgctaagcatgagcgatatttttaaaaattgtgagt aagcttcggaattc (SEQ ID NO:12342) cagagccggcgcagggaagggaacggcacctctcgggtgcagcagcagccgccgcactcccgggctcccggcgcacc ccgccgagcgaggagagagcaccgtgcgcttcgcccgcaaaggcgccctccggcagaagaacgtgcatgaggtcaa gaaccacaaattcaccgcccgcttcttcaagcagcccaccttctgcagccactgcaccgacttcatctggggcttcggga agcagggattccagtgccaagtttgctgcttgtggtgcacaagcggtgccatgaatttgtcacattctcctgccctggc gctgacaagggtccagcctccgatgacccccgcagcaaacacaagtttaagatccacacgtactccagccccacgttttg tgaccactgtgggtcactgctgtatggactcatccaccaggggatgaaatgtgacactgcatgatgaatgtgaatgtgaatgtgcacaagg gctgcgtgatgaatgttcccagcctgtgtggcacggaccacacggagcgccgcagcacctcacatccaggcccacatc gacagggacgtcctcattgtcctcgtaagagatgctaaaaaccttgtacctatggaccccaatggcctgtcagatcccta cgtaaaactgaaactgattcccgatcccaaaagtgagagcaaacagaagaccaaaaccatcaaatgctccctcaaccctg agtggaatgagacatttagatttcagctgaaagaatcggacaaagacagaagactgtcagtagagatttgggattgggat ttgaccagcaggaatgacttcatgggatctttgtcctttgggatttctgaacttcagaaggccagtgttgatggctggtt ggcagaaatttgagagggccaagatcagtcagggaaccaaggtcccggaagaaaaagacgaccaacactgtctccaaattt gacaacaatggcaacagagaccggatgaaactgaccgattttaacttcctaatggtgctggggaaaggcagctttggcaa ggtcatgctttcagaacgaaaaggcacagatgagctctatgctgtgaagatcctgaagaaggacgttgtgatccaagatg tgcttccagaccatggaccgcctgtactttgtgatggagtacgtgaatgggggggacctcatgtatcacatccagcaagt cggccggttcaaggagccccatgctgtattttacgctgcagaaattgccatcggtctgttcttcttacagagtaagggca

tcatttaccgtgacctaaaacttgacaacgtgatgctcgattctgagggacacatcaagattgccgattttggcatgtgt

aaggggaggatgaagatgaactcttccaatccatcatggaacacaacgtagcctatcccaagtctatgtccaaggaagct gtggccatctgcaaagggctgatgaccaaacacccaggcaaacgtctgggttgtggacctgaaggcgaacgtgatatcaa agagcatgcatttttccggtatattgattgggagaaacttgaacgcaaagagatccagccccttataagccaaaagctt gtgggcgaaatgctgaaaacttcgaccgatttttcacccgccatccaccagtcctaacacctcccgaccaggaagtcatc aggaatattgaccaatcagaattcgaaggattttcctttgttaactctgaatttttaaaacccgaagtcaagagctaagt agatgtgtagateteegteetteatttetgteatteageteaaeggetattgtggtgaeatttttatgttttteattge caagttgcatccatgtttgattttctgatgagactagagtgacagtgtttcagaacccaaatgtcctcaggtagttttga 10 gcatetetatgagatgggattatgeagatggeetatggaaaatgeagetgeataattaacacattateaaagteetetta actgccatattcacccccaaccatccaatctgtggataattggatgttagcggtactctttccacttccggtcctggagct tggcttgtatccaagtgtatggttgctttgcttagaggaatccctctatttcacctgttctggaggcaccagaccttga aaagaacatgctcaaaataaaatgttatctgttatttttgtaaactcaaagttaagatgatcaaagttctaaaattccaa 15 gaatgtgctlttagacggtctcaatctaaaagcacttcaaggggtcaaagggcaaccagcttggtgctacctcagtgttg tagtitotgatacittaigtottitgotoacootcatococaaactaotigaaaagggcattitggcaccactotoigaaac aaCacagtcactctagcaaggcccccaaagggccctggttttacattacatttcaaactttalitgctttggggttttgt tatgtgttcaaatgttattaaccacaatgacgacctgttttgatttaaccaagaagacggctgcggagcctagcagactc aggcctgtgggaatgggatttgttacaaatctaggtttgttactggcttcagaaagctaattaagtgctctgaaaaagac accgtttcttgaaacaaagatggttgtattcctcactttgatgttgttttgcaagatgtttgtggaaatgttcatttgta tctggatctctgttatgtgccatttttcttctagcatcgag (SEQ ID NO:12343) gtccttcattccttccacaactatttatccagcaccgtttctgggcacagggctccagcgatggtcccaacaggtacaat gacctctggggaccaagttcagttcttggtgagttctccagtgcctctcgatgtaggatgaaccgttggcatgctccact tetetetetggggeatetgetggggeagaageaatgggaagggetgettetecaettggtttggggtecaggtetgeatae tetetetetgggggeatetgetggaggaggagaaggggetgetteteeaettggttttggggtecaggtetgeataa attececeetgteetegttggggetggtgtaceagttatetgttgetgeataatgateeteeeeeeaaacaetgtga etgaagacaataaacatttttttageteatgaetetgeaaggeagteetttgaatetgggetggeeteagetgatgteae 30 gcatgttcataaagcatgaactcatggttcatggtggattagcagatggaggtgggctggg (SEQ ID NO:12344) acatcaaggagacgagtcctggttggatagtaatgtctttaacacccctctagcatttattaatttcctctctaacaaa taaaagatgcccttcagtcagatgcttaggacagatgacgcacctagagatattttaataatgtagatactctttgctgtt casactcagaccaaaatgacgataggctttttttggcccccagagggtgcacaaatacgaccagaatttgtgaagacgagt gtgtgtgtaagtgtgtgcggccacaagcotttccgaatgagtgacagcgggagcccatccctccaggagacgcgtgcaga atgaccaatgggatggatggggtggatgggtaccagtctccgcagaggccgggggtgggaattcgctgcgccccacccct tecaccegeteccettegeccegtaggtetttecactetegetecteccetgggcacatetectgaacgcagecegggg 40 gccgaggacgggtggggtggggggggggggtgcgacgaccagggctgcggtccggctgcggtcccggcgctgcagagctgcggc tgtgcacgcttagccgcgaggcccgcggtagcccgggcgccgatatgtaaagcagctggcagcgctgggcgcggggcctggg gagagcaccgttgcgcttcgcccgcaaaggcgccctcaggcagaagaactgcatgaggtcaagaaccacaaattcaccgc ccgcttcttcaagcagcccaccttctgcagccactgcaccgacttcatgtgatgacccccaggcactccggccccaggc cacgoogogccaggaccccctctccgcgccctctgcgccctccgcaccctggaccccggaccccggactccccgctccg gaccctgctgcccgggactcccggatggacagtcctagccgttgccctgtcccaccctggtcccagacgggccgccgcg ggcgcctcctgccctctcctgctctcaggcgcctctaga (SEQ ID NO:12345) gtcgactgcaggtcaacggacacatcaaggagagagtcctggttggatagtaatgtctttaacacccctctagcatttat taatttcctctcttaacaaataaaagatgacttcagttgaagatccttaggacagatgacggcacctggagatattttaa taatgtagataccetettgetgtteaaaeteagaeeaaaagagatggettttttteeeeeagagggtgeaeaaataegae 55 agccctatgttacagttggggaaacggagtcgttttgcagaggggatggacagaaggtagggagttctcttccaacgtgc aggaggcaagcaaagccaagcatcttctctgtggtggagttagagacatataaaataagatcgctcctcccctacctctg cagaacgtgtgtgtgtatgtgtgtgtaacgtgtgtgcgccacaagcctttccgaatgagtgacagcgggagcccatccc tccaggagacgcgtgcagaatgaccaatgggatggatgggtggatgggtaccgtctccgcgaggccggggtggaattc getgegeccacceettecaccegeteccettegeccegtaggtetttecactetegetecteccetgggcacatetect getgeagagetgeggetgtgeacgettageegegaggeeegeggtageeegggegeegatatgtaaageagetggeageg 70 gecetgggtgteettetetatetetgegggeatgggaeateetteteaeteetetgtgeeteggeagegeetgtgtta tctcccattgccctccccgagggcctggttcccctttccactcctcggtcacatcactgcgggcccctttcttccccagt ccttccagtagtggggcatcctttcctccttcccagtcccctcccagaggacaccaccgccgcggggtcactctcgccc gccctaccccgacggaaacgctcccactatcccgccactggtggtcgcagctcctctcttctgcaggagtgaaggc agatcggggttacagccgagctcccacctacccccacaaaggcggaagactcttgggcacccgcctgtggctgggagttt gcacctggggtacagaggcagggaggaaggcgggtgactctgtgggtaactagctggaggctgggcccccgggctgcctg acatacacctccttctgcttttgcaggggcttcgggaagcagggattccagtgccaaggtaggctctggggctttgggga tgctatttgtgggaagagagggtgaaaaatactttatagaagaagttactgagttaggcagagagtgaaagaatcacgtt ggtcggagtgacctcccaggctaggaattc (SEQ ID NO:12346)

aaagcgaccatgtatcctgagtggaagtcgacgttcgatgcccacatctatgaggggcgcgtcatccagattgtgctaat gcgggcagcagaggagccagtgtctgaggtgaccgtgggtgtgtcggtgctggccgagcgctgcaagaagaacaatggca aggctgagttctggctggacctgcagcctcaggccaaggtgttgatgtctgttcagtatttcctggaggacgtggattgc aaacagtctatgcgcagtgaggacgaggccaagttcccaacgatgaaccgccgcggagccatcaaacaggccaaaaatcca ctacatcaagaaccatgagtttatcgccaccttctttgggcaacccaccttctgttctgttgtgcaaagactttgtctggg gcctcaacaagcaaggctacaaatgcaggcaatgtaacgctgccatccacaagaaatgcatcgacaagatcatcggcaga ggttcacaactacatgagccccaccttctgtgaccactgcggcagcctgctctggggactggtgaagcagggattaaagt gtgaagactgcggcatgaatgtgcaccataaatgccgggagaaggtggccaacctctgcggcatcaaccagaagcttttg 10 gctgaggccttgaaccaagtcacccagagagcctcccggagatcagactcagcctcctcagagcctgttgggatatatca gggtttcgagaagaagaccggagttgctgggggggacatgcaagacaacagtgggacctacggcaagatctgggagggca gcagcaagtgcaacatcaacaacttcatcttccacaaggtcctgggcaaaggcagcttcgggaaggtgcttggagag ctgaagggcagaggagagtactttgccatcaaggccctcaagaaggatgtggtcctgatcgacgacgacgtggagtgcac 15 accacctgttctttgtgatggagttcctcaacggggggacctgatgtaccacatccaggacaaaggccgctttgaactc taccgtgccacgttttatgccgctgagataatgtgtggactgcagtttctacacagcaagggcatcatttacagggacct caaactggacaatgtgctgttggaccgggatggccacatcaagattgccgactttgggatgtgcaaagagaacatattcg gggagagecgggccagcaccttctgcggcacccctgactatatcgcccctgagatcctacagggcctgaagtacacattc tetgtggaetggtggtettteggggteettetgtaegagatgeteattggeeagteeeeetteeatggtgatgatgagga tgaactcttegagtecateegtgtggacaegecacattateeeegetggateaeeaaggagtecaaggaeateetggaga agetetttgaaagggaaccaaccaagaggetgggagtgacgggaaacatcaaaatccacccttettcaagaccataaactggactetgctgggaaaagcgggaggttggagccaccettcaggcccaaagtgaagtcacccagagactacagtaacttgaccaggagttcctgaacgagaagacgccctctcctacagcgacaagaacctcatcgactccatggaccagtctgcattcg ctggcttctcctttgtgaaccccaaattcgagcacctcctggaagattgaggttcctggacagatcaggctagccctgc ctccacccacacctgccgctcccacgataagcaccagtgggactgtggtgacttctgctgctgcccctgcccccccacacctggctgccgtctggccgggctctcatggtacttcctctgtgaactgtgtgaatctgcttttcctct 25 gccttcggagggaaattgtaaatcctgtgtttcattacttgaatgtagttatctattgaaaatatactttagagcacaat gga (SEQ ID NO:12347) tgccgccgcgacccttggcgcctgcccctgcaacgggagccccactgcaggccccaccatggcgccgttcctgcgcatcg 30 ccttcaactcctatgagctgggctccctgcaggccgaggacgaggcgaaccagcccttctgtgccgtgaagatgaaggag gcgctcagcacagagcgtgggaaaacactggtgcagaagaagccgaccatgtatcctgagtggaagtcgacgttcgatgc ccacatetatgagggggggggtcatecagattgtgetaatgggggagcagagaggaggagcagtgtctgaggtgaccgtgggtg ttgatgtctgttcagtatttcctggaggacgtggattgcaaacatctatgcgcagtgaggacgaggccaagttcccaac 35 gatgaaccgccgcggagccatcaaacaggccaaaatccactacatcaagaaccatgagtttatcgccaccttctttgggc gccatccacaagaaatgcatcgacaagatcatcggcagatgcactggcaccgcggccaacagccgggacactatattcca gaaagaacgettcaacategacatgcegeacegetteaaggtteacaaetacatgageeecaeettetgtgaecaetgeg gcagcctgctctggggactggtgaagcagggattaaagtgtgaagactgcggcatgaatgtgcaccataaatgccgggag aaggtggccaacctctgcggcatcaaccagaagcttttggctgaggccttgaaccaagtcacccagagagcctcccggag ctgagcaaaggcagcttcgggaaggtgctgcttggagagctgaagggaggagtactctgccatcaaggcctcaa gaaggatgtggtcctgatcgacgacgtggagtgcaccatggttgagaagggggtgctgacacttgccgcagagaatc cctttctcacccacctcatctgcaccttccagaccaaggaccacctgttctttgtgatggagttcctcaacgggggggac ctgatgtaccacatccaggacaaaggccgctttgaactctaccgtgccacgtttttatgccgctgagataatgtgtggact 45 gcagtttctacaccagcaagggcatcatttacaggacctcaaactggacaatgtgctgttggaccgggatggccacatca gcagtttctacacagcaagggcatcatttacagggacctcaaactggacaatgtgctgttggaccgggatggccacatca agattgccgactttgggatgtgcaaagagaacatattcggggagagccgggccagcaccttctgcggcacccctgactat atcgcccctgagatcctacagggcctgaagtacacattctctgtgggactggtcttttcgggggtccttctgtacgagat 50 geteattggecagtececettecatggtgatgatgaggatgaactettegagtecateegtgtggacaegecacattate ggaaacatcaaaatccaccccttcttcaagaccataaactggactctgctggaaaagcggaggttggagccacccttcag gcccaaagtgaagtcacccagagactacagtaactttgaccaggagttcctgaacgagaaggcgcgcctctccctacagcg acaagaacctcategactecatggaccagtetgeattegetggetteteetttgtgaaccccaaattegageaceteetg 55 gaagattgaggttcctggacagat (SEQ ID NO:12348) cccaagatggaagggagcggcggcgcgtccgcctcaaggcgcattacgggggggacatcttcatcaccagcgtggacgc ggagagegtactgeggtcagtgcagegagaggatatggggcctegegaggcaaggetacaggtgcatcaactgcaaactg ctggtccataagcgctgccacggcctcgtcccgctgacctgcaggaagcatatggattctgtcatgccttcccaagagcc 65 agaagcacgtgtttgagcaggcatccagcaaccccttcctggtcggattacactcctgcttccagacgacaagtcggttg ttcctggtcattgagtacgtcaacggcggggacctgatgttccacatgcagaggcagaggaagctccctgaggagcacgc 70 caggttctacgcggccgagatctgcatcgcctcaacttcctgcacgagagggggatcatctacagggacctgaagctgg acaacgagcactttctgcggaaccccgaattacatcgccccgaaatcctgcggggagaggagtacgggttcagcgtgga ctggtgggcgctgggagtcctcatgtttgagatgatggccgggcgctccccgttcgacatcatcaccgacaacccggaca tgaacacagaggactaccttttccaagtgatcctggagaagcccatccggatcccccggttcctgtccgtcaaagcctcc 75 catgttttaaaaggatttttaaataaggaccccaaagaggctcggctgccggccacagactggattttctgacatcaa cagacgactacggtctggacaactttgacacacagttcaccagcgagcccgtgcagctgaccccagacgatgaggatgcc ataaagaggategaecagteagagttegaaggetttgagtatateaaeceattattgetgtecaeegaggagteggtgtg tgggcacggctccgagggcggccagggacagacgcttgcgccgagaccgcagagggaagcgtcagcgggcgctgctggga gcagaacagtccctcacacctggcccggcaggcttcgtgctggaggaacttgctgctgtgcctgcgtcgcggcggat ccgcggggaccctgccgagggggctgtcatgcggtttccaaggtgcacattttccacggaaacagaactcgatgcactga

ccagcccttctgtgccgtgaagatgaaggaggcgctcagcacagagcgtgggaaaacactggtgcagaagaagccgacca tgtatcctgagtggaagtcgacgttcgatgcccacatctatgaggggcgcgtcatccagattgtgctaatgcgggcagca gaggagccagtgtctgaggtgaccgtgggtgtgtcggtgctggccgagcgctgcaagaagaacaatggcaaggctgagtt ctggctggacctgcagcctcaggccaaggtgttgatgtctgttcagtatttcctggaggacgtggattgcaaacagtcta tgcgcagtgaggacgaggccaagttcccaacgatgaaccgccgcgggagccatcaaacaggccaaaaatccactacatcaag aaccatgagtttatcgccaccttctttgggcaacccaccttctgttctgttgtgcaaagactttgtctggggcctcaacaa gcaaggctacaaatgcaggcaatgtaacgctgccatccacaagaaatgcatcgacaagatcatcggcagatgcactggca ccgcggccaacagccgggacactatattccagaaagaacgcttcaacatcgacatgccgcaccgcttcaaggttcacaac tacatgagccccaccttctgtgaccactgcggcagcctgctctggggactggtgaagcagggattaaagtgtgaagactg cggcatgaatgtgcaccataaatgccgggagaaggtggccaacctctgcggcatcaaccagaagcttttggctgaggcct tgaaccaagtcacccagagagcctcccggagatcagactcagcctctcagagcctgttgggatatatcagggtttcgag aagaagaccggagttgctggggaggacatgcaagacaacagtgggacctacggcaagatctgggagggcagcagcagcagtg caacatcaacaacttcatcttccacaaggtcctgggcaaaggcagcttcgggaaggtgctgct (SEQ ID NO:12350) ctccccgccccgaccatggtagtgttcaatggccttcttaagatcaaaatctgcgaggccgtgagcttgaagcccacagc ctggtcgctgcgccatgcggtgggaccccggccgcagactttccttctcgacccctacattgccctcaatgtggacgact cgcgcatcggccaaacggccaccaagcagaagaccaacagcccggcctggcacgacgagttcgtcaccgatgtgtgcaac ggacgcaagatcgagctggctgtctttcacgatgcccccataggctacgacgtcgtcgtggccaactgcaccatccagtt tcgatctctcagggtcgtcgggtgaagcccctaaagacaatgaagagcgtgtgttcagggaacgcatgcggccgaggaag cggcagggggccgtcaggcgcagggtccatcaggtcaacggccacaagttcatggccacctatcttcggcagcccaccta ctgctcccattgcagagacttcatctggggtgtcataggaaagcagggataccagtgtcaagtctgcacctgcgtggtcc acaagoggtgccacgagctcataatcacaaagtgtgctgggttaaagaagcaggagacccccgaccaggtgggctcccag cggttcagcgtcaacatgccccacaagttcggtatccacaactacaaggtccctaccttctgcgatcactgtgggtccctgctggggactcttgcggcagggtttgcagtgtaaagtctgcaaaatgttcaccgtcgatgtgagaccaacgtgg 30 ctoccaactgtggagtggatgccagaggaatcgccaaagtactggccgacctgggcgttaccccagacaaaaatcaccaac ageggecagagaaggaaaaagctcattgctggtgecgagtccccgcagcctgcttctggaagctcaccatctgaggaaga tcgatccaagtcagcacccacctccccttgtgaccaggaaataaaagaacttgagaacaacattcggaaagccttgtcat ttgacaaccgaggaggaggagcaccgggcagcatcgtctcctgatggccagctgatgagccccggtgagaatggcgaagtc cggcaaggccaggccaaggcctgggcctggatgagttcaacttcatcaaggtgttgggcaaaggcagctttggcaaggt catgttggcagaactcaagggcaaagatgaagtatatgctgtgaaggtcttaaagaaggacgtcatccttcaggatgatg acgtggactgcacaatgacagagaagaggattttggctctggcacggaaacacccgtaccttacccaactctactgctgc ttccagaccaaggaccgcctcttttcgtcatggaatatgtaaatggtggagacctcatgtttcagattcagcgctcccg aaaattogacgagcctcgttcacggttctatgctgcagaggtcacatcggccctcatgttcctccatcagcatggagtca gaagggattetgaatggtgtgacgaccaccacgttetgtgggactectgactacatagetectgagatectgcaggagtt ggagtatggcccctccgtggactggtgggccctgggggtgctgatgtacgagatgatggctggacagcctccctttgagg ccgacaatgaggacgacctatttgagtccatcctccatgacgacgtgctgtacccagtctggctcagcaaggaggctgtc agcatcttgaaagctttcatgacgaagaatccccacaagcgcctgggctgtgtggcatcgcagaatggcgaggacgccat caagcagcacccattcttcaaagagattgactgggtgctcctggagcagaagaagatcaagccacccttcaaaccacgca ttaaaaccaaaagagacgtcaataattttgaccaagactttacccgggaagaccggtactcacccttgtggacgaagca attgtaaagcagatcaaccaggaggaattcaaaggtttctcctactttggtgaagacctgatgccctgagagcccactgc agtt (SEQ ID NO:12351) agocggottotggaaactccctgtgtgagtgtgagtgagtgatgagtatgaacaaggcacattatgtottacttattgtatta
gtttcctgttgctgctgtagcaagttaccaccaatttatggcttaaagcaattcaaatttttctctttgaattcttaaga tcagaagttctaaatgagtctaatggggctaaaatcaaggtgttaggcaaaggcagct (SEQ ID NO:12352) tgcaqctggagatccggggtcccacagcagatgagatccacgtaactgttggcgaggcccgtaacctaattcctatggac cccaatggtctctctgatccctatgtgaaactgaagctcatcccagaccctcggaacctgacgaaacagaagacccgaac 55 gcgtggaggtgtgggactgggaccggacctcccgcaacgacttcatgggggccatgtcctttggcgtctcggagctgctc aaggcgcccgtggatggctggtacaagttactgaaccaggaggaggaggagtattacaatgtgccggtggccgatgctga caactgcagcctcctccagaagtttgaggcttgtaactacccctggaattgtatgagcgggtgcggatgggccctctt cctctcccatcccctccccttcccctagtcccaccgaccccaagcgctgcttcttcggggggagtccaaggacgcctgcac atctccgacttcagcttcctcatggttctaggaaaaggcagttttgggaaggtgatgctggccgagcgcaggggctctga tgagctctacgccatcaagatcttgaaaaaggacgtgatcgtccaggacgatgtggactgcacgctggtggagaaac głgłgcłggcgctggggggccggggtcctggcggcccgacttcctcaccagctccactccaccttccagacccg gaccgcctgtatttcgtgatggagtacgtcaccgggggagacttgatgtaccacattcaacagctgggcaagtttaagga cccgggacgacaacccgcaccttctgcgggaccccggactacatagccccggagatcattgcctaccagccctatgggaagactcgattggtggtcctttggagttctgctgtatgagatgttggcaggacagcctcccttcgatggggaggacgagg gccgtcatgtaatctcaccgccgccactaggtgtccccaacgtcccctccgccgtgcggcggcagcccacttcacccccgcggttctagacgcccacttcacc ctcccaagcgttcctggccttctgaactccatacagcctctacagccgtcccgcgttcaagacttgagcg (SEQ ID NO:12353) gcggcggagtcccccacggcgcccgaagcgcccccccgcacccccggcctccagcgttgaggcgggggagtgaggagatg ccgacccagagggacagcagcaccatgtcccacacggtcgcaggcggcagcagcgggaccattcccaccaggtccgggt gaaagcctactaccgcggggatatcatgataacacattttgaaccttccatctcctttgagggcctttgcaatgaggttc teteagttggagttagaagaageetttagaetttatgagetaaacaaggattetgaactettgatteatgtgtteeettg tgtaccagaacgtcctgggatgccttgtccaggagaagataaatccatctaccgtagaggtgcacgccgctggagaaagc

 $\verb|tttattgtgccaatggccacactttccaagccaagcgtttcaacaggcgttgctcactgtgccatctgcacagaccgaata| \\$ tggggacttggacqccaaggatataagtgcatcaactgcaaactcttggttcataagaagtgccataaactcgtcacaat tgaatgtgggcggcattctttgccacaggaaccagtgatgcccatggatcagtcatccatgcattctgaccatgcacaga cagtaattccatataatccttcaagtcatgagagtttggatcaagttggtgaagaaaaagaggcaatgaacaccagggaa agtggcaaagcttcatccagtctaggtcttcaggattttgatttgctccgggtaataggaagaggaagttatgccaaagt actgttggttcgattaaaaaaaacagatcgtatttatgcaatgaaagttgtgaaaaaaagagcttgttaatgatgatgagg atattgattgggtacagacagagaagcatgtgtttgagcaggcatccaatcatcctttccttgttgggctgcattcttgc tttcagacagaaagcagattgttctttgttatagagtatgtaaatggaggagacctaatgtttcatatgcagcgacaaag aaaacttcctgaagaacatgccagattttactctgcagaaatcagtctagcattaaattatcttcatgagcgagggataa 10 tttatagagatttgaaactggacaatgtattactggactctgaaggccacattaaactcactgactacggcatgtgtaag gaaggattacggccaggagatacaaccagcactttctgtggtactcctaattacattgctcctgaaattttaagaggaga agattatggtttcagtgttgactggtgggctcttggagtgctcatgtttgagatgatgatgcaggaaggtctccatttgata ttgttgggagctccgataaccctqaccagaacacagaggattatctcttccaagttattttggaaaaacacaaattcgcata ccacgttctctgtctgtaaaagctgcaagtgttctgaagagttttcttaataaggaccctaaggaacgattgggttgtca 15 tecteaaacaggatttgetgatattcagggacaccegttettcegaaatgttgattgggatatgatggagcaaaaacagg tggtacctccctttaaaccaaatattctggggaatttggtttggacaactttgattctcagtttactaatgaacctgtc cagctcactccagatgacgatgacattgtgaggaagattgatcagtctgaatttgaaggttttgagtatatcaatcctct tttgatgtctgcagaagaatgtgtctgatcctcatttttcaaccatgtattctactcatgttgccatttaatgcatggat aaacttgctgcaagcctggatacaattaaccattttatatttgccacctacaaaaaaacacccaatatcttctcttgtagactatatgaatcaattattacatctcgacccggaat (SEQ ID NO:12354) 25 ggcggccacctcgagttggccgtcttccacgagacccccctgggctacgacttcgtggccaactgcaccctgcagttcca ggagetegteggeacgaceggegeeteggacacettegagggttgggtggatetegagcagaggggaaagtatttgtgg agggctatgcgaaggcgagtccaccagatcaatggacacaagttcatggccacgtatctgaggcagcccacctactgctc 30 tcactgcaggagtttatctggggagtgtttgggaaacagggttatcagtgccaagtgtgcacctgtgtcgtccataaac gctgccatcatctaattgttacagcctgtacttgccaaaacaatattaacaaagtggattcaaagattgcagaacagagg ttegggateaacateccacacaagtteagcatecacaactacaaagtgecaacattetgegateactgeggeteactget ctaactgtggggtaaatgcggtggaacttgccaagaccttggcagggatgggtctccaacccggaaatatttctccaacc tcgaaactcgtttccagatcgaccctaagacgacagggaaaggagagcagcaaagaaggaaatggggttggggttaattc ttccaaccgacttggtatcgacactttgagttcatccgagtgttggggaagggagttttgggaaggtgatgcttgcaa gagtaaaagaaacaggagacctctatgctgtgaaggtgctgaagaaggacgtgattctgctgctggatgatgatgtggaatgc cgatcgtctgttttttgtgatggagtttgtgaatgggggtgacttgatgttccacattcagaagtctcgtcgttttgatg aagcacgagctcgcttctatgctgcagaaatcatttcggctctcatgttcctccatgataaaggaatcatctatagagat aagcacgagctcgctccatgctgcagaaatcatttcggctctcatgttcccctgataaaggaatcatctatagagat
ctgaaactggacaatgtcctgttggaccacggaggtcactgtaaactgcagacttcggaatgtgcaaggaggggttt
caatggtgtcaccacggccacattctgtggcacgccagactatatcggtccaggagatcctcaggaatgctgtacgggc
ctgcagtagactggtgggcaatgggcgtttgctctatgagatgctctgtggtcacgcgccttttgaggcagagaatgaa
gatgacctctttgaggccatactgaatgatgaggtggtctaccctacctggctccatgaagatgccacagggatcctaaa
atcttcatgaccaagaaccccaccatgcgcttgggcagcctgactcagggaggcgagcacgccatcttgagacatcctt
ttttaaggaaatcgactgggccagctgaaccatcgccaaatagaaccgcctttcagacccagaatcaaatcccgagaa gatgtcagtaattttgaccctgacttcataaaggaagaccagttttaactccaattgatgagggacatcttccaatgat acgagaacccaaaggaatagagattctccaggaatttcctctatcggaccttcccagcatcagccttagaacaagaacct taccttcaaggagcaagtgaagaactctgtcgaaggatggaactttcagatatcaactatttagagtcc (SEQ ID NO:12355) egcccctceggtcctgcgcccagtccgctgctgccgtgggggggagctgccgcagcggcagccgcactggtcc 55 cagggteegggeeegggeegttettggeteetgtegeggeeegggeatetegtteeatetgeagate ggcctgagccgtgagccggtgctgctgctgctgcaggactcgtccggggactacagcctggcgcacgtccgcgagatggcttg ctccattgtcgaccagaagttccctgaatgtggtttctacggaatgtatgataagatcctgctttttcgccatgacccta cctctgaaaaaatccttcagctggtgaaagcggccagtgatatccagggaaggcgatcttattgaagtggtcttgtcacgt tocgecacetttgaagaetttcagattcgtccccacgetctctttgttcattcatacagagetccagetttctgtgatca ctgtggagaaatgctgtgggggctggtacgtcaaggtcttaaatgtgaagggtgtggtctgaattaccataagagatgtg catttaaaatacccaacaattgcagcggtgtgaggcggagaaggctctcaaacgtttccctcactggggtcagcaccatccgcacatcatctgctgaactctctacaagtgcccctgatgagccccttctgcaaaaatcaccatcagaggtcgtttattgg togagagaagaggtcaaattctcaatcatacattggacgaccaattcaccttgacaagattttgatgtctaaagttaaag tgccgcacacatttgtcatccactcctacacccggcccacagtgtgccagtactgcaagaagcttctgaaggggcttttc aggcagggcttgcagtgcaaagattgcagattcaactgccataaacgttgtgcaccgaaagtaccaaaccaactgccttgg cgaagtgaccattaatggagatttgcttagccctggggcagagtctgatgtggtcatggaagaaggagtgatgacaatg atagtgaaaggaacagtgggctcatggatgatatggaagaagcaatggtccaagatgcagagatggcaatggcagagtgc cagaacgacagtggggagatgcaagatccagacccagacacgaggacgccaacagagacatggccatcatcaataagaca caatatcccactcatgagggtagtgcagtctgtcaaacacacgaggacgccaacagacacagtccatcaatgaagaagaaca tqqtccactacaccaqcaaggacacqctgcggaaacggcactattggagattggatagcaaatgtattaccctctttcag aatgacacaggaagcaggtactacaaggaaattcctttatctgaaattttgtctctggaaccagtaaaaacttcagcttt aattectaatggggccaatecteattgtttcgaaatcactacggcaaatgtagtgtattatgtgggagaaaatgtggtca atccttccageccatcaccaaataacagtgttetcaccagtggegttggtgcagatgtgggcaggatgtgggagatagcc atccagcatgcccttatgcccgtcattcccaagggctcctccgtgggtacaggaaccaacttgcacagagatatctctgt gagtatttcagtatcaaattgccagattcaagaaaatgtggacatcagcacagtatatcagatttttcctgatgaagtac tgggttctggacagtttggaattgtttatggaggaaaacatcgtaaaacaggaagagatgtagctattaaaatcattgac aaattacgatttccaacaaaacaagaaagccagcttcgtaatgaggttgcaattctacagaaccttcatcaccctggtgt tgatcttgtcaagtgaaaagggcaggttgccagagcacataacgaagtttttaattactcagatactcgtggctttgcgg caccttcattttaaaaatatcgttcactgtgacctcaaaccagaaaatgtgttgctagcctcagctgatccttttcctca ggtgaaactttgtgatttttggttttgcccggatcattggagagaagtctttccggaggtcagtggtgggtacccccgctt acctggctcctgaggtcctaaggaacaagggctacaatcgctctctagacatgtggtctgttggggtcatcatctatgta

agcctaaqcqqcacattcccatttaatgaagatqaaqacatacacgaccaaattcagaatgcagctttcatgtatccacc aaatccctggaaggaaatatctcatgaagccattgatcttatcaacaatttgctgcaagtaaaaatgagaaagcgctaca gtgtggataagaccttgagccacccttggctacaggactatcagacctggttagatttgcgagagctggaatgcaaaatc ggggagegetacatcacccatgaaagtgatgacctgaggtgggagaagtatgcaggcgagcagcggctgcagtaccccac acacctgatcaatccaagtgctagccacagtgacactcctgagactgaagaaacagaaatgaaagccctcggtgagcgtg ttgccttgcagaactgccattattttctgtcagatgagaacaaagctgttaaactgttagcactgttgatgtatctgagt acttgttattgtgaatgattcatgttatatttaatgcattaaacctgtctccactgtgcctttgcaaatcagtgtttttc ttactggagcttcattttggtaagagacagaatgtatctgtgaagtagttctgtttggtgtgtcccattggtgttgtcat gtgtgcctcagtatatttaaactcaagacaatgcacctagctgtgcaagacctagtgctcttaagcctaaatgccttaga aatgtaaactgccatatataacagatacatttecetettettataataetetgttgtactatggaaaatcagetgetea 15 tgctcgctccagggcgcaaccatgtcgccatttcttcggattggcttgtccaactttgactgcgggtcctgccagtcttg tcagggcgaggctgttaacccttactgtgctgtgctcgtcaaagagtatgtcgaatcagagaacgggcagatgtatatcc agaaaaagcctaccatgtacccaccctgggacagcacttttgatgcccatatcaacaagggaagagtcatgcagatcatt ctggggcctgaacaaacagggctaccagtgccgacaatgcaatgcagcaattcacaagaagtgtattgataaagttatagcaaagtgcacaggatcaacatgctatcacatggccacaggagagattcaaaattgacatgccacaga caaagtgcacaggatcagctatcaatagccgagaaaccatgttccacaaggagagatttaaattgacatgcacaaga tttaaagtctacaattacaagagccgaccttctgtggaacactgtgggacctgctgtggggactggcacggcaaggact caagtgtgatgcatgtggcatgaatgtgcatcatagatgccagacaaaggtggccaacctttgtggcataaaccagaagc taatggctgaagcgctggccatgattgagagcactcaacaggctcgctgcttaagagatactgaacagatcttcagagaa ggtccggttgaaattggtctcccatgctccatcaaaaatgaagcaaggccgccatgtttaccgacaccgggaaaaagga gcctcagggcatttcctgggagtctccgttggatgaggtggataaaatgtgccatcttccagaacctgaactgaacaaag aaagaccatctctgcagattaaactaaaaattgaggattttatcttgcacaaaatgttggggaaaggaagttttggcaag tgatgttgagtgcacgatggtagagagagagttctttccttggcctgggagcatccgtttctgacgcacatgttttgta cattccagaccaaggaaaacctcttttttgtgatggagtacctcaacggaggggacttaatgtaccacatccaaagctgc cacaagttcgacctttccagagcgacgttttatgctgcaaatcattcttggtctgcagttccttcattccaaaggaat agtetacagggacetgaagetagataacateetgttagacaaagatggacatateaagategeggatttttggaatgtgca aggagaacatgttaggagatgccaagacgaataccttctgtgggacacctgactacatcgcccagagatcttgctgggt cagaaatacaaccactctgtggactggtggtccttcggggttctcctttatgaaatgctgattggtcagtcgcctttcca aggaccttctggtgaagctcttcgtgcgagaacctgagaagaggctgggcgtgaggggagacatccgccagcaccctttgtttcgggagatcaactgggaggaacttgaacggaaggagattgacccaccgttccggccgaaagtgaaatcaccatttga ctgcagcaatttcgacaaagaattcttaaacgagaagccccggctgtcatttgccgacagagcactgatcaacagcatgg accagaatatgttcaggaacttttccttcatgaaccccgggatggagcggctgatatcctgaatcttgcccctccagaga aaacactcaacaataaagactgagacccgttcgcccccatgtgactttatctgtagcagaaaccaagtctacttcactaa tgctgggggccagccctggataggtttttatgggaattctttacaataaacatagcttgtacttg (SEQ ID NO:12357) 50 atgcccagcaggaccgaccccaagatggaagggagcggccgcgtccgcctcaaggcgcattacgggggggacatett catcaccagcgtggacgccgccacgaccttcgaggagctctgtgaggaagtgagagacatgtgtcgtctgcaccagcagc accegeteacceteaagtgggtggacagcgaaggtgaccettgcacggtgtceteccagatggagetggaagaggettte tccgggagaagacaaatctatctaccgccggggagccagaagatggaggaagctgtaccgtgccaacggccacctcttcc 55 aagccaagcgetttaacaggagagcgtactgeggtcagtgcagcgagaggatatggggcctcgcgaggcaaggctacagg tgcatcaactgcaaactgctggtccataagcgctgccacggcctcgtcccgctgacctgcaggaagcatatggattctgt ttgactgggtacagacagaagaagaagtgtttgagcaggaatccagcacccctcctggtcggattacactcctgtttc
cagacgacaagtcggttgttcctggtcattgagtacgtcaacggcgggacctgatgttccacatgcagaggcagaggaa
gctcctgaggacacgccaggttctacgcggccgagatctgcatcgccctcaacttcctgcacgagagggggatcatct
acagggacctgaagctggacaacgtcctcctggatgcggacgcacatcaagctcacagactacggcatgtgcaagga
ggcctgggccctggtgacacacacgagcactttctgcggaaccccgaattacatcgcccccgaaatcctgcggggagagga
gtacgggttcagcgtggactggtgggcgctgggagtcctcatgtttgagatgacgggcccatccggttcgacatca
tcaccgacaacccggacatgaacacagaggactaccttttccaagtgatcctggagaagcccatccggatccccggttc ctqtccqtcaaagcctcccatqttttaaaaqqatttttaaataaqqaccccaaagagagctcggctqccqqccacagac ccagacgatgaggatgccataaagaggatcgaccagtcagagttcgaaggctttgagtatatcaacccattattgctgtccaccgaggagtcggtgtga (SEQ ID NO:12358) tqtcatgccttcccaagagcctccaggatggctgtcctccgacctcctccacctccaggctctagatggcaaagcccact tcttgctcctctgcaatgactgtgccttcacctgggggttccccagagactagtgagagtcatcgggcgtggaagctat (SEQ ID NO:12359) ggagcaagaggtggttggggggggaccatggctgacgttttcccgggcaacgactccacggcgtctcaggacgtggccaa ccgcttcgcccgcaaaggggcgctgaggcagaagaacgtgcacgaggtgaaggaccacaaattcatcgcgcgcttcttca agcagccaaccttctgcagccactgcaccgacttcatctgggggtttggggaaacaaggcttccagtgccaagtttgctgt ttgtggtccacaagaggtgccatgaatttgttactttttcttgtccgggtgcggataagggacccgacactgatgaccc caggagcaagcacaagttcaaaatccacacttacggaagccccaccttctgcgatcactgtgggtcactgctctatggac ttatccatcaagggatgaaatgtgacacctgcgatatgaacgttcacaagcaatgcgtcatcaatgtccccagddtctgc ggaatggatcacactgagaagagggggggttttacctaaaggctgaggttgctgatgaaaagctccatgtcacagtacg

agatgcaaaaaatctaatccctatggatccaaacgggctttcagatccttatgtgaagctgaaacttattcctgatccca agaatgaaagcaaaccaaaaccatccgctccacactaaatccgcagtggaatgagtcctttacattcaaattg aaaccttcagacaaagaccgacgactgtctgtagaaatctgggactgggatcgaaacaacaaggaatgacttcatgggatc cctgctggcaacaaagtcatcagtccctctgaagacaggaaaccattccaacaaccttgaccgagtgaaactcacgga cttcaatttcctcatggtgttgggaaaggggagttttggaaaggtgatgcttgccgacaggaagggcacagaagaactgt atgcaatcaaaatcctgaagaaggatgtggtgattcaggatgatgacgtggagtgcaccatggtagaaaagcgagtcttg gcgtcctgttgtatgaaatgcttgccgggcagcctccatttgatggtgaagatgaagacgagctatttcagtctatcatg gagcacaacgtttcctatccaaaatccttgtccaaggaggctgtttctatctgcaaaggactgatgaccaaacacccagc 15 caagcggctgggctgtgggcctgaggggagagggagggacgtgagagagcatgccttcttccggaggatcgactgggaaaaac tggagaacagggagatccagccaccattcaagcccaaagtgtgtggcaaaggagcagagaactttgacaagttcttcaca cgaggacagcccgtcttaacaccacctgatcagctggttattgctaacatagaccagtctgattttgaaagggttctcgta ccagccctccccgcagtggaagtgaatccttaaccctaaaattttaaggccacggcttgtgtctgattccatatggaggc ggaagcttatcacagttcaagtgatttccagaagttccagggcttctgagagaccatcaagggaacttttaacaacttgac aaatgtccttgaagtaagatgcctcatctttagggaaaaatggggtttggatttctgcttaggcaaagtctcctgcagtt catccttctctgtcctcttcttgcttcaggcttggggaccgtccctgctgttccccactgtggtggcaatcaggacctaag 25 gtgaagcaaacttgaagttctatctgacaagtttaggcagtaagagaaggagggaaatcggagcaaagctccctcacttt tecagaaagtgcagggtgcttLctgctctgtagcaaggcagcagacatctctgagccaggcccaccaacaggcccttatc tggtggttggatcatgatcccattttgcttggacatgctctcaggaagataaaaaccatggagaaacactaggccattga 30 gcagagccggcgcaggggaagcgcccgggggccccgggtgcagcgccgccgccgcctcccggggcctcccggggcccgcagc ccggggtcccgggcccggggccggcacctctcgggctccggctcccgcgcaagatggctgacccggctgcggggcc gccgccgagcgagggcgaggagagcaccgtgcgcttcgcccgcaaaggcgccttcggcagaagaacgtgcatgaggtca agaaccacaaattcaccgcccgcttcttcaagcagcccaccttctgcagccactgcaccgacttcatctggggcttcggg aagcagggattccagtgccaagtttgctgctttgtggtgcacaagcggtgccatgaatttgtcacattctcctgccctgg 35 cgctgacaagggtccagcctccgatgacccccgcagcaaacacaagtttaagatccacacgtactccagccccacgtttt gtgaccactgtgggtcactgctgtatggactcatccaccaggggatgaaatgtgacacctgcatgatgaatgtgcacaag cgctgcgtgatgaatgttcccagcctgtgtggcacggaccacacacggagcgccgcggaccgcatctacatccaggcccacatcgacaggacgtcctcattgtcctcgtaagatgctaaaaaccttgtacctatggaccccaatggcctgtcagatccct acgtaaaactgaaactgattcccgatcccaaaagtgagagcaaacagaagaccaaaaccatcaaatgctccctcaaccct gagtggaatgagacatttagatttcagctgaaagaatcggacaaagacagaagactgtcagtagagatttggga tttgaccagcaggaatgacttcatgggatctttgtcctttgggatttctgaacttcagaaggccagtgttgatggctggt cggcagaaatttgagagggccaagatcagtcagggaaccaaggtcccggaagaaaagacgaccaacactgtctccaaatt tgacaacaatggcaacagagaccggatgaaactgaccgattttaacttcctaatggtgctggggaaaggcagctttggca aggtcatgctttcagaacgaaaaggcacagatgagctctatgctgtgaagatcctgaagaaggacgttgtgatccaagat ctgcttccagaccatggaccgcctgtactttgtgatggagtacgtgaatgggggcgacctcatgtatcacatccagcaag tcggccggttcaaggagccccatgctgtattttacgctgcagaaattgccatcggtctgttcttcttacagagtaagggc atcatttaccgtgacctaaaacttgacaacgtgatgctcgattctgagggacacatcaagattgccgatttttggcatgtg 50 taaggaaaacatetgggatggggtgacaaccaagacattetgtggcactecagactacategececegagataattget gaaggggaggatgaagatgaactcttccaatccatcatggaacacaacgtagcctatcccaagtctatgtccaaggaagc tgtggccatctgcaaagggctgatgaccaaacacccaggcaaacgtctgggttgtggacctgaaggcgaacgtgatatca aagagcatgcatttttccggtatattgattgggagaaacttgaacgcaaagagatccagccccttataagccaaaagct 55 catcatgaacttggaccaaaatgaatttgctggcttctcttatactaacccagagtttgtcattaatgtgtaaggtgaatg 60 tgaacagacaatgtcaaaactactgtgtctgataccaaaatgcttcagtatttgtaatttttcaagtcagaagctgatgt tcctggtaaaagtttttacagttattctataatatcttctttgaatgctaagcatgagcgatatttttaaaaattgtgag 65 cgtgcatgaggtcaagaaccacaaattcaccgcccgcttcttcaagcagcccaccttctgcagccactgcaccgacttca tctggggcttcgggaagcagggattccagtgccaagtttgctgctttgtggtgcacaagcggtgccatgaatttgtcaca ttctcctgccctggcgctgacaagggtccagcctccgatgacccccgcagcaaacacaagtttaagatccacacgtactc caqcccacqttttgtgaccactgtgggtcactgctgtatggactcatccaccaggggatgaaatgtgacacctgcatga tgaatgtgcacaagcgctgcgtgatgaatgttcccagcctgtgtggcacggaccacacggagcgccgcgcgcatctac 70 atccaggeccacategacagggacgtcctcattgtcctcgtaagagatgctaaaaaccttgtacctatggaccccaatgg cctgtcagatccctacgtaaaactgaaactgattcccgatcccaaaagtgagagcaaacagaagaccaaaaccatcaaat gctccctcaaccctgagtggaatgagacatttagatttcagctgaaagaatcggacaaagacagaagactgtcagtagag atttgggattgggatttgaccagcaggaatgacttcatgggatctttgtcctttgggatttctgaacttcagaaggccag 75 actgtctccaaatttgacaacaatggcaacagagaccggatgaaactgaccgattttaacttcctaatggtgctggggaa aggcagctttggcaaggtcatgctttCagaacgaaaggcacagatgagctctatgctgtgaagatcctgaagaaggacg accoagetecaetectgettecagaccatggaccgetgtaetttgtgatggagtaegtgaatgggggegaceteatgta 80 tcacatccagcaagtcggccggttcaaggagccccatgctgtattttacgctgcagaaattgccatcggtctgttcttcttacagagtaagggcatcatttaccgtgacctaaaacttgacaacgtgatgctcgattctgagggacacatcaagattgcc gattttggcatgtgtaaggaaacatctgggatggggtgacaaccaagacattctgtggcactccagactacatcgcccc

cgagataattgcttatcagccctatgggaagtccgtggattggtgggcatttggagtcctgctgtatgaaatgttggctg ggcaggcaccctttgaaggggaggatgaagatgaactcttccaatccatggaacacaaacgtagcctatcccaagtct atgtccaaggaagctgtggccatctgcaaagggctgatgaccaaacacccaggcaaacgtctgggttgtggacctgaagg ataagccaaaagcttgtgggcgaaatgctgaaaacttcgaccgatttttcacccgccatccaccagtcctaacacctccc gaccaggaagtcatcaggaatattgaccaatcagaattcgaaggattttcctttgttaactctgaatttttaaaacccga agtcaagagctaagtagatgtgtagatctccgtccttcatttctgtcattcaagctcaacggctattgtggtgacatttt tatgtttttcattgccaagttgcatccatgtttgattttctgatgagactagagtgacagtgtttcagaacccaaatgtc $\verb|ctcaggtagtttggagcatctctatggagatgggattatgcagatggcctatggaaaatgcagctgcataattaacacatt|\\$ atcaaagtcctcttacaatttattttccgcagcatgtcagctaagtagacccaatggggagagaaaatgcctgctttctt tecetetttttetgeaetgeeatatteaececeaaceatecaatetgtggataattggatgttageggtaetetteeaet tccggtcctggagcttggcttgtatccaagtgtatggttgctttgcctaagaggaatccctctatttcacctgttctgga ggcaccagaccttgaaaagaacatgctcaaaataaaatgttatctgttattttgtaaactcaaagttaagatgatcaaa gttctaaaattccaagaatgtgcttttagacggtctcaatctaaaagcacttcaaggggtcaaagggcaaccagcttggtgctacctcagtgttgtagtttctgatactttatgtctttgctcaccctcatccccaaactacttgaaaaagggcatttggc gagcctagcagactcaggcctgtgggaatgggatttgttacaaatctaggtttgttactggcttcagaaagctaattaag 20 tgctctgaaaaagacaccgtttcttgaaacaaagatggttgtattcctcactttgatgttgttttgcaagatgtttgtgg ttatccagcaccgtttctgggcacagggctccagcgatggtcccaacaggtacaatgacctctggggaccaagttcagtt cttggtgagttctccagtgcctctcgatgtaggatgaaccgttggcatgctccactgacgctggctccttctgttgtttc tettggetceaggaccccgcagcaacacaagtttaagatccacacgtactccagccccacgttttgtgaccactgtgg 25 gcagaagcaatgggaagggctgcttccacttggtttggggtccaggtctgccatacattcccccctgtcctcgttggggc tggtgtaccagttatctgttgctgcataatgatcctcccaccccaaaacactgtgactgaagacaataaacattttttta geteatgaetetgeaaggeagteetttgaatetgggetggeeteagetgatgteaegeatgtteataaageatgaaetea tggttcatggtggattagcagatggaggtgggctgggacatcaaggagacgagtcctggttggatagtaatgtctttaac 30 ctagagatattttaataatgtagatactcttgctgttcaaactcagaccaaaatgacgataggctttttttggcccccaga cttcctcccacactattagccctatgttacagttggggaaacggagtcgttttgcagaggggatggacagaaggtaggg agttctcttccaaacgtgcaggaggcaagcaagactcttctctgtggtgagttagagacatataaaataaagat cagaggccggggtgggaattcgctgcgcccaccccttccacccgctcccttcgccccgtaggtctttccactctcgct 40 tatgtaaagcagctggcagcgctgggcctgggcgcgactgcaaatgaggagggcgcggggctggcccgggggctcc ggctccgcgcgccggccgccagagccggcgcaggggaagcgcccgcggccccggggtgcagcagcggccgcctcccgc gcctccccggcccgcagcccgcggtcccgcgccccggggccggcacctctcgggctcccggctccccgcgcgcaagatggc tgacccggctgcgggggccgccgcgaggagggggaggagagcaccgtgcgcttcgcccgcaaaggcgccctcaggcaga 45 tteatetggtgaececcaggeaeteeggeecaggeeaegeegegeeaggaececeteteegegeectetgegeeetee gcaccctggaccccgcgtccccggactccccgctccggaccctgctgcccgggactcccggatggacagtcctagccgtt gccctgtcccaccctggtcccagacgggcgccgcgggggcctcctgccctctcctgctctcaggcgcctctagagtcg actgcaggtcaacggacacatcaaggagagagtcctggttggatagtaatgtctttaacacccctctagcatttattaat 50 ttcctctcttaacaaataaaagatgacttcagttgaagatccttaggacagatgacggcacctggagatattttaataat gtagataccetettgctgttcaaactcagaccaaaagagatggctttttttccccagagggtgcacaaatacgacagaa ctatgttacagttggggaaacggagtcgttttgcagaggggatggacagaaggtagggagttctcttccaacgtgcagga ggcaagcaaagccaagcatcttctctgiggtggagttagagacatataaaataagatcgctcctcccctacctctgcaga acgtgtgtgtgtatgtgtgtgtaacgtgtgtgcggccacaagcctttccgaatgagtgacagcgggagcccatccctcca gcagccccgggggccgaggacggggtggggtggggggagactcgggtccgaccccgggctgcggtcccggcgctg cagagetgeggetgtgeaegettageegggaggeeegeggtageeegggegetatgtaaageagetggeagegetgg aaattcaccgccgcttcttcaagcaqcccaccttctgcagccactgcaccgacttcatctgqtqqaqcqcqcqcqcaag qcaccttcccgggcccccgaggcagcgcgcgccaagggaccccctttccgccctctgcgccctccgcaccctggacccc gcqtccccggactccccgctccggaccctgctgccgggactcccggatggacagtcctgccqttqccctgtccccaccct ggtcccaggacggggggcgctcctgcctctcctgctctcaggcgcctctagagcgcccaggggcagcgtcgcgggcgc 70 tgggtgtccttctctatctctgcgggcatgggacatcctttctcactcctctgtgcctcggcagcgccctgtgttatctc ccattgccctccccgagggcctggttcccctttccactcctcggtcacatcactgcgggcccctttcttccccagtccct ccagtagtggggcatcctttcctccttcccagtcccctcccagaggacaccccgccgcggggtcactctcgccctccc tergaatgegtetttatetettetettteegagggtgeteggggcatetatgggtaeatetgtegeetgeetteageee 75 ctaccccgacggaaacgctccccactatcccgccacctggtggtcgcagcctcctctcttctgcaggagtgaaggcagat cggggttacagccgagctcccacctacccccacaaaggcggaagactcttgggcacccgcctgtggctgggagtttgcac ctggggtacagaggcagggaggaaggcgggtgactctgtgggtaactagctggaggctgggcccccggggctgcctgacat acacctccttctgcttttgcaggggcttcgggaagcagggattccagtgccaaggtaggctctggggctttggggatgct atttgtgggaagagagggtgaaaaatactttatagaagaagttactgagttaggcagagagtgaaagaatcacgttggtc ggagtgacctcccaggctaggaattcaaagcgaccatgtatcctgagtggaagtcgacgttcgatgcccacatctatgag

agtatttcctggaggacgtggattgcaaacagtctatgcgcagtgaggacgaggccaagttcccaacgatgaaccgccgc ggagccatcaaacaggccaaaatccactacatcaagaaccatgagtttatcgccaccttctttgggcaacccaccttctg aacatcqacatgccgcaccgcttcaaggttcacaactacatgagccccaccttctgtgaccactgcggcagcctgctctg qqqactqqtqaaqcaqqqattaaaqtqtqaaqactqcqqcatqaatqtqcaccataaatqccqqqaqaaqqtqqccaacc tctgcggcatcaaccagaagcttttggctgaggccttgaaccaagtcacccagagagcctcccggagatcagactcagcc tcctcagagcctgttgggatatatcagggtttcgagaagaagaccggagttgctggggaggacatgcaagacaacagtgg gacctacggcaagatctgggagggcagcagcagcagcagcagcagcagcatcaacacttcatcttccacaaggtcctgggcaaaggca gcttcgggaaggtgctgcttggagagctgaagggcagaggagagtactttgccatcaaggccctcaagaaggatgtggt ctgatcgacgacgacgtggagtgcaccatggttgagaagcgggtgctgacacttgccgcagagaatccctttctcaccca cctcatctqcaccttccagaccaaggaccacctgttctttgtgatggagttcctcaacgggggggacctgatgtaccaca tccaggacaaaggccgctttgaactctaccgtgccacgttttatgccgctgagataatgtgtggactgcagtttctacac agcaagggcatcatttacagggacctcaaactggacaatgtgctgttggaccgggatggccacatcaagattgccgactt tgggatgtgcaaagagaacatattcggggagagccgggccagcaccttctgcggcacccctgactatatcgcccctgaga tcctacagggcctgaagtacacattctctgtggactggtggtctttcggggtccttctgtacgagatgctcattggccag tcccccttccatggtgatgatgatgatgaactcttcgagtccatccgtgtggacacgccacattatccccgctggatcac tccacccttcttcaagaccataaactggactctgctggaaaagcggaggttggagccacccttcaggcccaaagtgaag 20 tcacccagagactacagtaactttgaccaggagttcctgaacgagaaggcgcctctcctacagcgacaagaacctcatcgactccatggaccagtctgcattcgctggcttctcctttgtgaaccccaaattcgagcacctcctggaagattgaggtt cctggacagatcaggctagccctgccctccacccacacctgcccgctccccacgataagcaccagtgggactgtggtgac ttctgctgctggccccgcccctgccccagagcgtccttggctgccgtctggccgggctctcatggtacttcctctgtga actgtgtgtgaatctgcttttcctctgccttcggagggaaattgtaaatcctgtgtttcattacttgaatgtagttatct 25 attgaaaatatactttagagcacaatggatgccgccgcgacccttggcgcctgcccctgcaacgggagccccactgcagg ccccaccatggcgccgttcctgcgcatcgccttcaactcctatgagctgggctccctgcaggccgaggacgaggcgaacc agcccttctgtgccgtgaagatgaaggaggcgctcagcacagagcgtgggaaaacactggtgcagaagaagccgaccatg tatcctgagtggaagtcgacgttcgatgcccacatctatgaggggcgcgtcatccagattgtgctaatgcgggcagcaga ccatgagtttatcgccaccttctttgggcaacccaccttctgttctgtgtgcaaagactttgtctggggcctcaacaagc aaqqctacaaatqcaqqcaatqtaacqctqccatccacaagaaatqcatcgacaagatcatcggcagatqcactggcacc gcggccaacagccgggacactatattccagaaagaacgcttcaacatcgacatgccgcaccgcttcaaggttcacaacta catqaqccccaccttctqtqaccactqcgqcaqcctqctctggggactgqtgaagcagggattaaaqtqtqaagactqcq gcatgaatgtgcaccataaatgccgggagaaggtggccaacctctgcggcatcaaccagaagcttttggctgaggccttg aaccaagtcacccagagagcctcccggagatcagactcagcctcctcagagcctgttgggatatatcagggtttcgagaa gaagaccggagttgctggggaggacatgcaagacaacagtgggacctacggcaagatctgggaggagcagcagcaagtgca acatcaacaacttcatcttccacaaggtcctgggcaaaggcagcttcgggaaggtgctgcttggaagagctgaagggcaga 40 ggagagtactctgccatcaaggccctcaagaaggatgtggtcctgatcgacgacgacgtggagtgcaccatggttgagaa gcgggtgctgacacttgccgcagagaatecctttctcacccacctcatctgcaccttccagaccaaggaccacctgttct ttgtgatggagttcctcaacgggggggacctgatgtaccacatccaggacaaaggccgctttgaactctaccgtgccacg ttttatgccgctgagataatgtgtggactgcagtttctacacagcaagggcatcatttacagggacctcaaactggacaa tgtgctgttggaccgggatggccacatcaagattgccgactttgggatgtgcaaagagaacatattcggggagagccggg ccagcaccttctgcggcacccctgactatatcgcccctgagatcctacagggcctgaagtacacattctctgtggactgg
tggtctttcggggtccttctgtacgagatgctcattggccagtcccccttccatggtgatgatgaggatgaactcttcga cggccttcggggtcctctgtacgagatgtcattggcagtcccccttccatggtgatgatgatgagatgaactcttcga gtcatccgtgtggacacgccacattatcccgctggatcaccaaggagtcctatggagagatcctttgata gggaaccaaccaagaggctgggaatgacgggaaacatcaaaatcaaccccttcttcaagaccataaactggactctgctg gaaaagcggaggttggagccacccttcaggcccaaagtgaagtcaccaagagactacagtaactttgaccaggagttcct gaacgagaaggcgcctctcctacaagcgacaagaacctcatcgactccatggaccagtctgcattcgctggcttctcct ttgtgaaccccaaattcgagcacctctggaagattgaggttcctggacagatcccaagatggaagggagcggcgc gtccgcctcaaggcgcattacgggggggacatcttcatcaccagcgtggacgccgccacgaaccttcgaagagcctctgga aqaqqatatggggcctcgcgaggcaaggctacaggtgcatcaactgcaaactgctggtccataagcgctgccacggcctc gtcccgctgacctgcaggaagcatatggattctgtcatgccttcccaagagcctccagtagacgacaagaacgaggacgc cgaccttccttccgaggagacagatggaattgcttacatttcctcatcccggaagcatgacagcattaaagacgactcgg 60 aggacettaagecagttategatgggatggatggaateaaaateteteaggggettgggetgeaggaetttgacetaate agagtcatcgggcgcgggagctacgccaaggttctcctggtgcggttgaagaagaatgaccaaatttacgccatgaaagt ggggacctgatgttccacatgcagaggcagaggaagctccctgaggagcacgccaggttctacgcggccgagatctgcatcgcctcaacttcctgcacgagaggggatcatctacagggacctgaagctggacaacgtcctcctggatgcggacgggc 65 acatcaagctcacagactacggcatgtgcaaggaaggcctgggccctggtgacacaacgagcactttctgcggaaccccg aattacatcgccccgaaatcctgcggggagaggagtacgggttcagcgtggactggtgggctgggagtcctcatgtttgaggatgatggccgggcgttcccgttcgacatcatcaccgacaacccggacatgaacacagaggactaccttttccaag tgatectggagaageceatecggatececeggttectgtecgtcaaagecteceatgttttaaaaggatttttaaataag gaceceaaagaggageteggetgeeggeacagaetggattttetgacateaagteceaegegttettecgcageataga ctgggacttgctggagaagaagcaggcgctccctccattccagccacagatcacagactacggtctggacaactttg acacacagttcaccagccagccagtcaccccagagagagtcggtgtgaggccagggtgcgtctctgtcagtctaggccagtgggcacgggtgcgtctaacctttattgctgtccaccgaggagtcggtgtgaggccgcggtgcgtctctgtcgtcgacacggtgattgcagtggtatgaccattaattctgtatccttaaccaccgcataatgcatggcagggtcggggcacggctccgagggcacggg agcqtcctqagqaataaaatgttccgatqaaaaaaaaaqggccggcggcggcgactctggacgcgagccgggcct tecegtggategeceeagetgeggegggegtegeggeeeeegggtggeaetteegtgtgeegggegeeggageeeg acccttggcgcctgccctgcaacgggagcccactgcaggccccaccatggcgccgttcctgcgcatcgccttcaactc

ctatqaqctqqqctccctqcaqqccqagqacgaggcgaaccagccttctqtqccgtgaagatgaaggaggcgctcagca cagagcgtgggaaaacactggtgcagaagaagccgaccatgtatcctgagtggaagtcgacgttcgatgcccacatctat gaggggcqcgtcatccagattgtgctaatgcgggcagcagaggagccagtgtctgaggtgaccgtgggtgtgtcggtgtct cgcggagccatcaaacaggccaaaatccactacatcaagaaccatgagtttatcgccaccttctttgggcaacccacctt ttcaacatcgacatgccgcaccgcttcaaggttcacaactacatgagcccaccttctgtgaccactgcggcagcctgct 10 ctggggactggtgaagcagggattaaagtgtgaagactgcggcatgaatgtgcaccataaatgccgggagaaagttggcca acctctgcggcatcaaccagaagcttttggctgaggccttgaaccaagtcacccagagagcctcccggagatcagactca gcctcctcagagcctgttgggatatatcagggtttcgagaagaagacggagttgctggggaggacatgcaagacaaga tgggacctacggcaagatctgggagggcagcagcaagtgcaacatcaacacttcatcttccacaaggtcctgggcaaag gcagcttogggaaggtgctgctccccogccccgaccatggtagtgttcaatggccttcttaagatcaaaatctgcgagg 15 ccgtgagettgaageccacagectggtcgctgcgccatgcggtgggaccccggccgcagactttccttctcgacccctac attgcctcaatgtggacgactcgcgcatcggccaaacggccaccaagcagaagaccaacagcccggcctggcacgacga tggccaactgcaccatccagtttgaggagctgctgcagaacgggagccgccacttcgaggactggattgatctggagcca gaaggaagagtgtatgtgatcatcgatctctcagggtcgtcgtcgggtgaagcccctaaagacaatgaagagcgtgtgttcag 20 ggaacgcatgcggccgaggaagcggcagggggccgtcaggcggcagggtccatcaggtcaacggccacaagttcatggcca cctatcttcggcagcccacctactgctcccattgcagagacttcatctggggtgtcataggaaagcagggataccagtgt caagtctgcacctgcgtggtccacaagcggtgccacqagctcataatcacaaagtgtgctgggttaaagaagcaggagaccccgaccaggtgggctcccagcggttcagcgtcaacatgccccacaagttcggtatccacaactacaaggtccctacct 25 taccccagacaaaatcaccaacagcggccagagaaaggaaaaagctcattgctggtgccgagtccccgcagcctgcttctg aacattcggaaagccttgtcatttgacaaccgaggagaggagcaccgggcagcatcgtctcctgatggccagctgatgagcccgggtgagaatggcgaagtccggcaaggccaggccaggcctgggcctggatgagttcaacttcatcaaggtgttgg gcaaaggcagctttggcaaggtcatgttggcagaactcaagggcaaagatgaagttatatgctgtgaaggtcttaaagaag gacgtcatccttcaggatgatgacgtggactgcacaatgacagagaagaggattttggctctggcacggaaacacccgta 30 ccttacccaactctactgctgcttccagaccaaggaccgcctctttttcgtcatggaatatgtaaatggtggagacctca tgtttcagattcagcgctcccgaaaattcgacgagcctcgttcacggttctatgctgcagagggtcacatcggccctcatg ttcctccatcagcatggagtcatctacagggatttgaaactggacaacatccttctggatgcagaaggtcactgcaagct 35 ggctgacttcgggatgtgcaaggaagggattctgaatggtgtgacgaccaccacgttctgtgggactcctgactacatag ctcctgagatcctgcaggagttggagtatggccctccgtggactggtgggccctgggggtgctgatgtacgagatgatg gctggacagcctccctttgaggccgacaatgaggacgacctatttgagtccatcctccatgacgacgtgctgtacccagt ctggctcagcaaggaggctgtcagcatcttgaaagctttcatgacgaagaatccccacaagcgcctgggctgtgtggcat cgcagaatggcgaggacgccatcaagcagcacccattcttcaaagagattgactgggtgctcctggagcagaagaagatc aagccacccttcaaaccacgcattaaaaccaaaagagacgtcaataattttgaccaagactttacccgggaagagccggt actcacccttgtggacgaagcaattgtaaagcagatcaaccaggaggaattcaaaggtttctcctactttggtgaagacc tgatgccctgagagcccactgcagttagccggcttctggaaactccctgtgtgagtgtgagggaatgagtatgaacaagg cacattatgtcttacttattgtattagtttcctgttgctgctgtagcaagttaccaccaatttatggcttaaagcaattc aaattttttctctttgaattcttaagatcagaagttctaaatgagtctaatggggctaaaatcaaggtgttaggcaaaggc agcttgcagctggagatccggggctcccacagcagatgagatccacgtaactgttggcgaggcccgtaacctaattcctatggaccccaatggtctctctgatccctatgtgaaactgaagctcatcccagaccctcggaacctgacgaaacagaagaccc gaacggtgaaagccacgctaaaccctgtgtggaatgagacctttgtgttcaacctgaagccaggggatgtggagcgccgg ctcaggcgtggaggtgtgggactgggacctcccgcaacgacttcatgggggccatgtctttggcgtctcggagct gctcaaggcgccgtggatggctggtacaagttactgaaccaggaggcgagtattacaatgtgccggtggccgatg ctgacaactgcagcctcctccagaagtttgaggcttgtaactacccctggaattgtatgagcgggtgcggatgcggaccc 50 tettectetecatecetteceetteceetagteceacegaceceaagegetgettetteggggegagtecaggacgeet gcacatctccgacttcagcttcctcatggttctaggaaaaggcagttttgggaaggtgatgctggccgagcgcaggggct ctgatgagetetaegecateaagatettgaaaaaggaegtgategtecaggaegaegaegaegaetgeaegetggtggag 55 cccggaccgcctgtatttcgtgatggagtacgtcaccgggggagacttgatgtaccacattcaacagctgggcaagttta gacctgaagctggacaatgtgatgctggatgctgagggacacatcaagatcactgactttggcatgtgtaaggagaacgt cttccccgggacgacacccgcaccttctgcgggaccccggactacatagccccggagateattgcctaccagccctatg ggaagtetgtegattggtggteetttggagttetgetgtatgagatgttggeaggacageeteeettegatgggaaggae 60 gaggaggagctgtttcaggccatcatggaacaactgtcacctaccccaagtcgctttcccgggaagccgtggccatctg caaggggtttcctgaccaagcacccagggaagcgcctgggctcagggcctgatggggaacctaccatccgtgcacatggct ggcgagaactttgacaagttcttcacgcgggcggcgccagcgctgacccctccagaccgcctagtcctggccagcatcga ccaggccgatttccagggcttcacctacgtgaaccccgacttcgtgcacccggatgcccgcagcccaccagcccagtgc ctgtgcccgtcatgtaatctcacccgccgccactaggtgtccccaacgtcccctccgccgtgccggcagccccactt caccccaacttcaccaccccctgtcccattctagatcctgcaccccagcattccagctctgcccccgcgggttctagac geceteccaagegtteetggeettetgaactecatacageetetacageegteegggtteaagacttgageggggt 70 tgtgttcttttgacaacgaacagctcttcaccatgaaatggatagatgagaagaagaaccgtgtacagtatcatctcag ttgggttagaagaagacctttagactttatgactaaacaaggattctgaactcttgattcatgtgttcccttgtgtaca 75 cttqqacqccaaggatataaqtqcatcaactqcaaactcttqqttcataaqaaqtqccataaactcqtcacaattqaatq ttccatataatccttcaagtcatgagagtttggatcaagttggtgaagaaaaagaggcaatgaacaccagggaaagtggc aaagcttcatccagtctaggtcttcaggattttgatttgctccgggtaataggaagaggaagttatgccaaagtactgtt ggttcgattaaaaaaaacagatcgtatttatgcaatgaaagttgtgaaaaaaagagcttgttaatgatgatgaggatattg attgggtacagacagagaagcatgtgtttgagcaggcatccaatcatcctttccttgttgggctgcattcttgctttcag

acagaaagcagattgttctttgttatagagtatgtaaatggaggagacctaatgtttcatatgcagcgacaaagaaaact tcctgaagaacatgccagattttactctgcagaaatcagtctagcattaaattatcttcatgagcgagggataatttata ttacggccaggagatacaaccagcactttctgtggtactcctaattacattgctcctgaaattttaagaggagaagatta tggtttcagtgttgactggtgggctcttggagtgctcatgtttgagatgatggcaggaaggtctccatttgatattgttg ggagctccgataaccctgaccagaacacagaggattatctcttccaagttattttggaaaaacaaattcgcataccacgt tctctgtctgtaaaagctgcaagtgttctgaagagttttcttaataaggaccctaaggaacgattgggttgtcatcctca aacaggatttgctgatattcagggacacccgttcttccgaaatgttgattgggatatgatggagcaaaaacaggtggtac gtctgcagaagaatgtgtctgatcctcatttttcaaccatgtattctactcatgttgccatttaatgcatggataaactt gctgcaagcctggatacaattaaccattttatatttgccacctacaaaaaaacacccaatatcttctcttgtagactata acccctatctgacggtgagcgtggaccaggtgcgcgtgggccagaccagcaccaagcagaagaccaacaaaccacgtac aacgaggagttttgcgctaacgtcaccgacggcggccacctcgagttggccgtcttccacgagacccccttgggctacgacttcgtggccaactgcaccctcgagactcggcccacctcgggctccggcacctcggagaccccctggagactcgggctggcacgacctcggagaccccctggagagaccccctggggttgggcaacctcggagagacccc atctcgagccagaggggaaagtatttgtggtaataacccttaccgggagtttcactgaagctactctccagagagccgg 20 atcttcaaacattttaccaggaagcgccaaagggctatgcgaaggcgagtccaccagatcaatggacacaagttcatggc cacqtatctqaqqcaqccacctactgctctcactgcagggagtttatctggggagtgtttgggaaacagggttatcagt gccaagtgtgcacctgtgtcgtccataaacgctgccatcatctaattgttacagcctgtacttgccaaaacaatattaac aaagtqqattcaaaqattqcaqaacagaggttcgggatcaacatcccacacaagttcagcatccacaactacaaagtgcc tgcatattcgatqtcaagcgaacgtggccctaactgtggggtaaatgcggtggaacttgccaagaccctggcagggatg ggtctccaacccggaaatatttctccaacctcgaaactcgtttccagatcgaccctaagacgacagggaaaggagagagcag caaagaaggaaatgggattggggttaattetteeaacegaettggtategaeaeetttgagteateegagtgttgggga aggggagttttgggaaggtgatgcttgcaagagtaaaagaaacaggagacctctatgctgtgaaggtgctgaagaaggac 30 gtgattctgctggatgatgatgtggaatgcaccatgaccgagaaaaaggatcctgtctctggcccgcaatcaccccttcct cactcagttgttctgctgctttcagacccccgatcgtctgtttttttgtgatggagtttgtgaatgggggtgacttgatgt tccacattcagaagtctcgtcgttttgatgaagcacgagctcgcttctatgctgcagaaatcatttcggctctcatgttc ctccatgataaaggaatcatctatagagatctgaaactggacaatgtcctgttggaccacgagggtcactgtaaactggc agacttcggaatgtgcaaggagggatttgcaatggtgtcaccacggccacattctgtggcacgaccagactatatcgctccagagatcctccaggaaatgctgtacgggcctgcagtagactggtgggcaatgggcgtgttgctctatgagatgctctgt getcaatgaagatgccacagggatcctaaaatcttettgaggccataactgattgtgtgtctaccatagtgcgcttttgggcagccttactag getcaatgaagatgccacagggatcctaaaatctttcatgaccaagaaccccaccatgagtggtcttaccctagatgtctaccctacctg gaggcgagcacgccatcttgagacatccttttttaaggaaatcgactgggcccagctgaaccatcgccaaatagaaccg cctttcagacccagaatcaaatcccgagaagatgtcagtaattttgaccctgacttcataaaggaagaccagttttaac tccaattgatgagggacatcttccaatgattaaccaggatgagtttagaaacttttcctatgtgtctccagaattgcaac catagccttatggggagtgagagagagggcacgagaacccaaaggaatagagattctccaggaatttcctctatcggacc ttcccaqcatcagccttagaacaagaaccttaccttcaaggagcaagtgaagaactctgtcgaaggatggaactttcaga ctcccgatcctcatccccttgccctcccccagcccagggacttttccggaaagtttttattttccgtctgggctctcgga gaaagaageteetggeteageggetgeaaaaettteetgetgeegegeegeeageeeeegeettegetgeeeggeett cgccccgccgagcgatgagcgcccctccggtcctgcggccgcccagtccgctgctgcccgtggcggcggcagctgccgca ctcgttccatctgcagatcggcctgagccgtgagccggtgctgctgctgcaggactcgtccggggactacagcctggcgc acgtccgcgagatggcttgctccattgtcgaccagaagttccctgaatgtgcttctacggaatgtatgataagatcctg ctttttcgccatgaccctacctctgaaaacatccttcagctggtgaaagcggccagtgatatccaggaaggcgatcttat tgaagtggtettgteacgtteegeeacetttgaagaettteagattegteeceacgetetetttgtteatteatacagag ctccagctttctgtgatcactgtggagaaatgctgtgggggctggtacgtcaaggtcttaaatgtgaagggtgtggtctg aattaccataagagatgtgcatttaaaatacccaacaattgcagcggtgtgaggcggagaaggctctcaaacgtttccctcactggggtcagcaccatccgcacatcatctgctgaactctctacaagtgcccctgatgagccccttctgcaaaaatcac catcagagtcgtttattggtcgagagaagaggtcaaattctcaatcatacattggacgaccaattcaccttgacaaqatt 55 ttgatgtctaaagttaaagtgccgcacacatttgtcatccactcctacacccggcccacagtgtgccagtactgcaagaa gcttctgaaggggcttttcaggcagggcttgcagtgcaaagattgcagattcaactgccataaacgttgtgcaccgaaag taccaaacaactgccttggcgaagtgaccattaatggagatttgcttagccctggggcagagtctgatgtggtcatggaa gaagggagtgatgacaatgatagtgaaaggaacagtgggctcatggatgatatggaagaagcaatggtccaagatgcaga gtcatgaaagaaggatggatggtccactacaccagcaaggacacgctgcggaaacggcactattggagattggatagcaa atqtattaccctctttcaqaatqacacaggaaqcaggtactacaaggaaattcctttatctgaaattttgtctctggaac cagtaaaaacttcagctttaattcctaatggggccaatcctcattgtttcgaaatcactacggcaaatgtagtgtattat qtgggagaaaatgtggtcaatccttccagcccatcaccaaataacagtgttctcaccagtggcgttggtgcagatgtggc caggatgtggggagatagccatccagcatgcccttatgcccgtcattcccaagggctcctccgtgggtacaggaaccaact tgcacagagatatctctgtgagtatttcagtatcaaattgccagattcaagaaaatgtggacatcagcacagtatatcag attittcctgatgaagtactgggttctggacagtttggaattgtttatggaggaaaacatcgtaaaacaggaagaggtgt agctattaaaatcattgacaaattacgatttccaacaaaacaagaaagccagcttcgtaatgaggttgcaattctacaga 70 catggagacatgctggaaatgatcttgtcaagtgaaaagggcaggttgccagagcacataacgaagtttttaattactca gatactcgtggctttgcggcaccttcattttaaaaatatcgttcactgtgacctcaaaccagaaaatgtgttgctagcct cagctgatecttttcctcaggtgaaactttgtgatttttggtttttgcccggatcattggagagaagtctttccggaggtca gtggtgggtacccccgcttacctggctcctgaggtcctaaggaacaagggctacaatcgctctctagacatgtggtctgt 75 tggggtcatcatctatgtaagcctaagcggcacattcccatttaatgaagatgaagacatacacgaccaaattcagaatg cagctttcatgtatccaccaaatccctggaaggaaatatctcatgaagccattgatcttatcaacaatttgctgcaagta aaaatgagaaagcgctacagtgtggataagaccttgagccacccttggctacaggactatcagacctggttagatttgcg atacggtcaggtttaacatttgccttgcagaactgccattattttctgtcagatgagaacaaagctgttaaactgttagc actgttgatgtatctgagttgccaagacaaatcaacagaagcatttgtattttgtgtgaccaactgtgttgtattaacaa

aagttccctgaaacacgaaacttgttattgtgaatgattcatgttatatttaatgcattaaacctgtctccactgtgcct ttgcaaatcagtgtttttcttactggagcttcattttggtaagagacagaatgtatctgtgaagtagttctgtttggtgt gtcccattggtgttgtcattgtaaacaaactcttgaagagtcgattatttccagtgttctatgaacaactccaaaaccca tgtgggaaaaaatgaatgaggagggtagggaataaaatcctaagacacaaatgcatgaacaagttttaatgtatagttt tgaatccttttgcctgctgctggtgtcctcagtaattttaactcaagacaatgcacctagctgtgcaagacctagtgctct ctaatggctgaagcgctggccatgattgagagcactcaacaggctcgcttaagagatactgaacagatcttcagaga 20 aggtccggttgaaattggtctcccatgctccatcaaaaatgaagcaaggccgccatgtttaccgacaccgggaaaaaagag agcetcagggcatttcctgggagtetccgttggatgaggtggataaaatgtgccatcttccagaacctgaactgaacaaa gaaagaccatctctgcagattaaactaaaaattgaggattttatcttgcacaaaatgttggggaaaggaagttttggcaa atgatgttgagtgcacgatggtagagaagagagttctttccttggcctgggagcatccgtttctgacgcacatgttttgt 25 acattccagaccaaggaaaacctcttttttgtgatggagtacctcaacggaggggacttaatgtaccacatccaaagctg ccacaagttcgacctttccagagcgacgttttatgctgctgaaatcattcttggtctgcagttccttcattccaaaggaa tagtctacagggacctgaagctagataacatcctgttagacaaagatggacatatcaagatcgcggatttttggaatgtgc aaggagaacatgttaggagatgccaagacgaataccttctgtgggacacctgactacatcgccccagagatcttgctggg tcagaaatacaaccactctgtggactggtcgtccttcggggttctccctttatgaaatgctgattggtcagtcgcctttcc 30 aaggaccttctggtgaagctcttcgtgcgagaacctgagaaggctgggcgtgaggggagacatccgccagcacccttt gtttcgggagatcaactgggaggaacttgaacggaaggagttgacccaccgttccggccgaaagtgaaatcaccatttg actgcagcaatttcgacaaagaattcttaaacgagaagccccggctgtcatttgccgacagagcactgatcaacagcatg gaccagaatatgttcaggaacttttccttcatgaaccccgggatggagcggctgatatcctgaatcttgcccctccagag aactgctgatcaacgaaatgcttgttgaatcaggggcaaacggaqtacagacgtctcaagactgaaacggcccattgcc tggtctagtagcggatctcactcagccgcagacaagtaatcactaacccgttttattctatcctatctgtggatgtataa atgctgggggccagccctggataggtttttatgggaattctttacaataaacatagcttgtacttgatgcccagcaggac cgaccccaagatggaagggagcggcggcgcgctcaaggcgcattacggggggacatcttcatcaccagcgtgg acgccgccacgaccttcgaggagctctgtgaggaagtgagagacatgtgtcgtctgcaccagcagcacccgctcaccctc aaqtqqqtqqacaqcqaaqqtqacccttgcacqqtgtcctcccaqatgqaqctggaaqaqqctttccgcctggcccgtca gtgcagggatgaaggcctcatcattcatgttttcccgagcacccctgagcagcctggcctgccatgtccgggagaagaca aatctatctaccgccggggagccagaagatggaggaagctgtaccgtgccaacggccacctcttccaagccaagcgcttt aacaggagagcgtactgcggtcagtgcagcgagaggatatggggcctcgcgaggcaaggctacaggtgcatcaactgcaa actgctggtccataagcgctgccacggcctcgtcccgctgacctgcaggaagcatatggattctgtcatgccttcccaag agcetccagtagacgacaagaacgaggacgccgacettccttccgaggagacagatggaattgcttacatttcctcatcc 50 ggggcttggggctgcaggactttgacctaatcagagtcatcgggcgcgggacgtacgccaaggttctcctggtgcggttga acagagaagcacgtgtttgagcaggcatccagcaaccccttcctggtcggattacactcctgcttccagacgacaagtcg 55 atcacagacgactacggtctggacaactttgacacacagttcaccagcgagcccgtgcagctgaccccagacgatgagga tqccataaagaggatcgaccagtcagagttcgaaggctttgagtatatcaacccattattgctgtccaccgaggagtcgg tgtgatgtcatgcettcccaagagcctccaggatggctgtcctccgacctcctccacctccaggctctagatggcaaagc caqcetettgetcetetgeaatgactgtgeetteacetgggggtteececagagactagtgagagteategggegtggaag ctat (SEQ ID NO:12360) qccacttcttctgggcccacgaggcagctgtcccatgctctgctgagcacggtggtgccatgcctctgcaactcctcctg ttgctgatcctactgggccctggcaacagcttgcagctgtgggacacctgggcagatgaagccgagaaagccttgggtcc cctgcttgcccgggaccggagacaggccaccgaatatgagtacctagattatgatttcctgccagaaacggagcctccag aaatgctgaggaacagcactgacaccactcctctgactgggcctggaacccctgagtctaccactgtggagcctgctgca aggcgttctactggcctggatgcaggaggggcagtcacagagctgaccacggagctggccaacatggggaacctgtccac ggattcagcagctatggagatacagaccactcaaccagcagcacggaggcacagaccactccactggcagccacagagg cacagacaactcgactgacggccacggaggcacagaccactccactggcagccacagaggcacagaccactccaccagca gccacggaagcacagaccactcaaccacagagcctggaggcacagaccactgcaccagcagccatggaggcacagaccactgcaccagcagcactggaggcacagaccactcaaccagcagcatggagg 75 cacagaccactgcaccagaagccacggaggcacagaccactcaacccacagccacggaggcacagaccactccactggca gccatggaggccctgtccacagaacccagtgccacagaggccctgtccatggaacctactaccaaaagaggtctgttcat catctcatccctgttgcctgatgggggtgaggggccctctgccacagccaatgggggcctgtccaaggccaagagcccgg

gcctgacgccagagcccagggaggaccgtgagggggatgacctcaccctgcacagcttcctcccttagctcactctgcca tctgttttggcaagaccccacctccacgggctctcctgggccacccctgagtgcccagaccccaatccacagctctgggc ttoctoggagaccoctggggatggggatcttcagggaaggaactctggccacccaaacaggacaagagcagcctggggcc aagcagacgggcaagtggagccacctctttcctcctccgcggatgaagcccagccacatttcagccgaggtccaaggca ggaggccatttacttgagacagattetetetetttteetgteeecatettetetgggteeetetaacateteecatgge tctccccgcttctcctggtcactggagtctcctccccatgtacccaagg (SEQ ID NO:12361) ccaccaatettgggcaagaagegagaccatteteettttetetggteaeteetgteetteagggggeteeetetggeee aagottotaottggttotoagtgttttoacagttatgggaacccaagaacagtgtcagacctaggaggtgccccactacc 10 cacattetegetteeteetteeacacacageeattgggggttgeteggateegggaetgeegcagggggtgeeacageag tgcctggcagcgtgggctgggaccttgtcactaaagcagagaagccacttcttctgggcccacgaggcagctgtcccatg 15 gccatgcctctgcaactcctgttgctgatcctactgggccctggcaacagcttgcagctgtgggacacctgggcaga 20 tgaagccgagaaagccttgggtcccctgcttgcccgggaccggagacaggccaccgaatatgagtacctagattatgatt tcctgccagaaacggagcctccagaaatgctgaggaacagcactgacaccactcctctgactggcctggaacccctgag tctaccactgtggagcctgctgcaaggcgttctactggcctggatgcaggaggggagtcacagagctgaccacggagct ggccaacatggggaacctgtccacggattcagcagctatggagatacagaccactcaaccagcagcaccaggaggcacaga 25 gaggcacagaccactccactggcagccacagaggcacagaccactccaccagcagccacggaagcacagaccactcaacc cacaggectggaggeacagaecaetgeaecageageeatggaggeacagaecaetgeaecageageeatggaageaeaga ccactccaccagcagccatggaggcacagaccactcaaaccacagccatggaggcacagaccactgcaccagaagccacg gaggcacagaccactcaacccacagccacggaggcacagaccactccactggcagccatggaggccctgtccacagaacc cagtgccacagaggccctgtccatggaacctactaccaaaagaggtctgttcatacccttttctgtgtcctctgttactc 30 acaagggcattcccatggcagccagcaatttgtccgtcaactacccagtgggggccccagaccacatctctgtgaagcag tgcctgctggccatcctaatcttggcgctggtggccactatcttcttcgtgtgcactgtggtgctggcggtccgcctctc ccgcaagggccacatgtaccccgtgcgtaattactcccccaccgagatggtctgcatctcatccctgttgcctgatggg gtgaggggccctctgccacagccaatgggggcctgtccaaggccaagagcccgggcctgacgccagagcccagggaggac egtgaggggatgaeeteaeeetgeaeagetteeteeettageteaetetgeeatetgttttggeaagaeeeeaeeteea 35 cgggctctcctgggccacccctgagtgcccagaccccaatccacagetctgggcttcctcggagacccctggggatgggg 40 ggtcaccaaacaggaagtggacattctaagggaggagtactgaagagtgacggacttctgaggctgtttcctgctgctcctctgacttggggcagcttgggtcttcttggggacctctctggggaaaacccagggtgaggttcagcctgtgagggctggga tgggtttcgtgggcccaaagggcagacctttctttgggactgtgtggaccaaggagcttccatctagtgacaagtgaccc ccagctategcctcttgccttcccctgtggccactttccagggtggactctgtcttgttcactgcagtatcccaactgca ggtccagtgcaggcaataaatatgtgatggacaaaacgatagcggaatccttcaaggtttcaaggctgtctccttcaggc 45 agcetteceggaattetecateceteagtgeaggatggggetggteeteagetgtetgeeeteageeeetggeeeecea ggaagcctctttcatgggctgttaggttgacttcagttttgcctcttggacaacagggggtcttgtacatccttgggtga $\verb|ccaggaaaagttcaggctatgggggccaaaagggaggcttccccttccccaccagtgaccactttattccacttcctcc| \\$ attacccagitttggccacagagittggtccccccaaacctcggaccaatatccctctaaacatcaatctatcctcct gttaaagaaaaaaaatgggactgggagcagtggctcatgcctgtaatcccagcactttgggaggccgaggcaggtac atcacctgaggtcaggagttcaagactagcctggccaacatagtgaaaccctgtctctactaaaaatacaaagattagtc aggtgtgggtggcacatgcctgtagtcccagctactggggaggctgaggcaggagaattgcttgaacccgggaagcggagg 55 tagaagaagttaaaagggccctcctggatggcttattcatgttgatgagtaataataataactgctactggctgaggatc 60 ttotecateccaggcatgtcagggatgcctaagtccccagtccctgctccagaccagacatcttccagctgtggcagtag agggtggtggtctagggtgcttgctaagcccaagggtgaaactgtcttgacatccctccgcccattgtctcctcctaggt gccatgcctctgcaactcctcctgttgctgatcctactgggccctggcaacagcttgcagctgtgggacacctgggcaga tgaagccgagaaagccttgggtcccctgcttgcccgggaccggagacaggccaccgaatatgagtacctagattatgatt tectgecagaaaeggageetecagaaatgetgaggaaeageaetgaeaecaeteetetgaetgggeetggaaeeeetgag 65 tctaccactgtggagcctgctgcaaggcgttctactggcctggatgcaggaggggcagtcacagaagctgaccacggagct ggccaacatggggaacetgtccacggattcagcagctatggagatacagaccactcaaccagcagcaccggaggcacaga ccactcaaccagtgcccacggaggcacagaccactccactggcagccacagaggcacagacaactcgactgacggccacg gaggcacagaccactccactggcagccacagaggcacagaccactccaccagcagccacggaagcacagaccactcaacc cacaggcctggaggcacagaccactgcaccagcagccatggaggcacagaccactgcaccagcagccatggaagcacaga $\verb|ccactccaccagcagccatggaggcacagaccactcaaaccacagccatggaggcacagaccactgcaccagaagccacg| \\$ gaggcacagaccactcaacccacagccacggaggcacagaccactccactggcagccatggaggccctgtccacagaacc cagtgccacagaggccctgtccatggaacctactaccaaaagaggtctgttcatacccttttctgtgtcctctgttactc acaagggcattcccatggcagccagcaatttgtccgtcaactacccagtgggggccccagaccacatctctgtgaagcag tgcctgctggccatcctaatcttggcgctggtggccactatcttcttcgtgtgcactgtggtgctggcggtccgcctctc

ggtcaccaaacaggaagtggacattctaagggaggagtactgaagagtgacggacttctgaggctgtttcctgctgctcc tctgacttggggcagcttgggtcttcttgggcacctctctgggaaaacccagggtgaggttcagcctgtgagggctggga tgggtttcgtgggcccaaagggcagacctttctttgggactgtggaccaaggagcttccatctagtgacaagtgaccc ccagetategeetettgeetteeeetgtggeeaettteeagggtggaetetgtettgtteaetgeagtateeaactgea ggtccagtgcaggcaataaatatgtgatggacaaaacgatagcggaatccttcaaggtttcaaggctgtctccttcaggc agectteceggaattetecateceteagtgeaggatggggetggteeteagetgtetgeeeteageeeetggeeeeca ggaagcctctttcatgggctgttaggttgacttcagttttgcctcttggacaacagggggtcttgtacatccttgggtga ccaggaaaagttcaggctatgggggggccaaagggagggctgcccttccccaccagtgaccactttattccacttcctcc attacccagttttggcccacagagtttggtccccccaaacctcggaccaatatccctctaaacatcaatctatcctcct gttaaagaaaaaaaaaatgggactgggagcagtggctcatgcctgtaatcccagcactttgggaggccgaggcaggtac atcacctgaggtcaggagttcaagactagcctggccaacatagtgaaaccctgtctctactaaaaatacaaagattagtc aggtgtggtggcacatgcctgtagtcccagctactggggaggctgaggcaggagaattgcttgaacccgggaagcggagg aagattcaatgacccttgttaaagcatggtaaggaagactttgttcaaggggagtgggactctctcaatcactgcaggga 15 ctgcagctatgggattttgcagtgggggcattttgggctcaactatgagtacagcaggggcaagtgggagctgatagccag ttgctgatcctactgggccctggcaacagcttgcagctgtgggacacctgggcagatgaagccgagaaagccttgggtcc cctgcttgcccgggaccggagacaggccaccgaatatgagtacctagattatgatttcctgccagaaacggagcctccag aaatgctgaggaacagcactgacaccactcctctgactgggcctggaacccctgagtctaccactgtggagcctgctgca aggcgttctactggcctggatgcaggaggggcagtcacagagctgaccacggagctggccaacatggggaacctgtcacggattcagcagctatggagatacagaccactcaaccagcagccacggaggcacagaccactccactggcagccacagag 25 gccacggaagcacagaccactcaacccacaggcctggaggcacagaccactgcaccagcagccatggaggcacagaccac tgcaccagcagccatggaagcaccagaccactccaccagcagccatggaggcacagaccactcaaaccaccagccatggagg cacagaccactgcaccagaagccacggaggcacagaccactcaacccacagccacggaggcacagaccactccactggca 30 gccatggaggcctgtccacagaacccagtgccacagaggcctgtccatggaacctactaccaaaagaggtctgttcat ccccagaccacatctctgtgaagcagtgcctgctggccatcctaatcttggcgctggtggccactatcttcttcgtgtgc actgtggtgctggcggtccgcctctcccgcaagggccacatgtaccccgtgcgtaattactcccccaccgagatggtctg catctcatccctgttgcctgatggggtgaggggcctctgccacagccaatgggggcctgtccaaggccaagagcccgg geetgacgccagagcccagggaggaccgtgaggggatgacctcaccctgcacagcttcctcccttagctcactctgcca tctgttttggcaagaccccacctccacgggctctcctgggccacccctgagtgcccagaccccaatccacagctctgggc aagcagacgggcaagtggagccacctctttcctcctccgcggatgaagcccagccacatttcagccgaggtccaaggca ggaggccatttacttgagacagattotototottttcctgtccccatcttctctgggtccctctaacatctcccatggc teteccegetteteetggteactggagteteeteeccatgtaccaaggccaccaatcttgggcaagaagaagcatteteettttteteetggteactgtaccataggggteteeteeteggtecattgggcaagaagaagcagteteeteettttteteetggteactaccaagaagaagctgteeactggggcaagaagaagtatteacattggtteteagtttttacaagttatgggaaccaaaaccgaagagagteeccactaccaccatgtetttatcaatgttgtcaccaagagetgteacaaagcggaggtgecccactaccaccatgtetttatcaatgttgtcaccaaagctgtcacaaacaatggggtgtggggtgtcaccacatggccttgcctaagtaaccacattctcgcttectcctctccacacacacagc 40 45 ccaggcccttcttgagctgcagcacctggggagggcaaactgaggctcctccgactcaagactaaagtcttcctggagtc tgtggccttattctgtgactcttctgaatccttagaagaagttaaagggccctcctggatggctttattcatgttgatga 50 gtaataataataatactgctactggctgaggatcttctccatcccaggcatgtcagggatgcctaagtccccagtccctgct gacatccctccgcccattgtctcctcctaggtgccatgcctctgcaactcctcctgttgctgatcctactgggccctggc aacagettgcagetgtgggacaeetgggcagatgaagccgagaaageettggggtcccctgcttgcccgggaccggagaca ggccaccgaatatgagtacctagattatgatttcctgccagaaacggagcctccagaaatgctgaggaacagcactgaca 55 ccactoototgactgggootggaaccootgagtotaccactgtggagootgotgoaaggogttotactggootggatgoa ggaggggcagtcacagagctgaccacggagctggccaacatggggaacctgtccacggattcagcagctatggagataca gaccactcaaccagcagccacggaggcacagaccactcaaccagtgcccacggaggcacagaccactccactggcagcca cagaggcacagacaactcgactgacggccacggaggcacagaccactccactggcagccacagaggcacagaccactcca ccagcagccacggaagcacagaccactcaacccacaggcctggaggcacagaccactgcaccagccatggaggcaca ggtctgcatctcatccctgttgcctgatgggggtgaggggcctctgccacagccaatgggggcctgtccaaggccaaggccagg gcccgggcctgacgccagagcccagggaggaccgtgagggggatgacctctaccctgccacagccaatggttccacgccaatg ctgccatctgttttggcaagaccccacctccacgggctctcctgggccacccctgagtgcccagaccccaatccacagct ctqqqcttcctcqqagacccctggggatggggatcttcagggaaggaactctggccacccaaacaggacaagagcagcct qqqqccaaqcaqacgqqcaaqtqqaqccacctctttcctcctccqcqqatqaaqcccaqccacatttcaqccqaqqtcc aaggcaggaggccatttacttgagacagattctctctctttttcctgtccccatcttctctgggtccctctaacatctcc catggctctccccgcttctcctggtcactggagtctcctccccatgtacccaaggaagatggagctcccccatcccacac gcactgcactgccattgtcttttggttgccatggtcaccaaacaggaagtggacattctaagggaggagtactgaagagt gacggacttctgaggctgtttcctgctgctcctctgacttggggcagcttgggtcttcttgggcacctctctgggaaaac ccaaggagcttccatctagtgacaagtgacccccagctatcgcctcttgccttcccctgtggccactttccagggtggac ccttcaaggtttcaaggctgtctccttcaggcagccttcccggaattctccatccctcagtgcaggatggggctggtcc tcagctgtctgccctcagcccctggcccccaggaagcctctttcatgggctgttaggttgacttcagttttgcctcttg Cccaccagtgaccactttattccacttcctccattacccagttttggcccacagagtttggtcccccccaaacctcggac

ccctgtctctactaaaaatacaaagattagtcaggtgtggtggcacatgcctgtagtcccagctactggggaggctgagg ggggagtgggactctctcaatcactgcagggactgcagctatgggattttgcagtggggcatttggctcaactatgag tacagcaggggcaagtgggactgatagccagggaacagggttggatatotgcagctgaaaattaccaagaggaaacat caggggaaggggaattctggctaaactgactgctggggatgggttctcggtcattttctacactgacctaacaggattca gagggtggtctagggtgcttgctaagcccaagggtgaaactgtcttgacatccctccgcccattgtctcctagg tgccatgcctctgcaactcctcctgttgctgatcctactgggccctggcaacagcttgcagctgtgggacacctgggcag atgaagccgagaaaggctttgggtcccctggttgccgggaccaggagacaggcactgagagacctgggaacactgggag atgaccacagaaacggagcctccagaaatgctgaggaacagcactgacaccaccaatatagagtcctagatatagat ttcctgccagaaacggagcctccagaaatgctgaggaacagcactgacaccactctcttgactgggagcactgaacacctga gtctaccactgtggagcctgctgcaaggcgttctactggcctggatgcaggagggcagtcacagagctgaccacggagc tggccaacatggggaacctgtccacggattcagcagctatggagatacagaccactcaaccagcagccacggaggcacag accactcaaccagtgcccaccggaggcacagaccactccactggcagccacagaggcacagacaactcgactgacggcacagagcacactccactgcactgcaccactccactgcagcacagaccactccactgcagcacagaccactccactcacagaggcacagaccactccactcacagcagccaccagaagccactccac 20 ccacaggcctggaggcacagaccactgcaccagcagccatggaggcacagaccactgcaccagcagccatggaagcacag accactccaccagcagccatggaggcacagaccactcaaaccacagccatggaggcacagaccactgcaccagaagccac ggaggcacagaccactcaacccacagccacggaggcacagaccactccactggcagccatggaggccctgtccacagaac ccagtgccacagaggccctgtccatggaacctactaccaaaagaggtctgttcatacccttttctgtgtcctctgttact cacaagggcattcccatggcagccagcaatttgtccgtcaactacccagtgggggccccagaccacatctctgtgaagca 25 gtgcctgctggccatcctatcttggcgctggtggccactatcttcttcgtgtgcactgtggtgctggcggtccgcctct cccgcaagggccacatgtaccccgtgcgtaattactcccccaccgagatggtctgcatctcatccctgttgcctgatggg ggtgaggggccttotgccacagccaatgggggcctgtccaaggccaagagcccgggcctgacgccagagcccagggagga ccgtgagggggatgacctcaccctgcacagcttcctcccttagctcactctgccatctgttttggcaagacccacctcc acgggetetectgggeeacccctgagtgeecagaccccaatccacagetetgggettecteggagacccctggggatggg 30 gatetteagggaaggaactetggccaccaaacaggacaagacagcetggggccaagcagacgggcaagtggagccacc tctttcctcctccgcggatgaagcccagccacatttcagccgaggtccaaggcaggaggccatttacttgagacagatt ctctcctttttcctgtcccccatcttctctgggtccctctaacatctcccatggctctccccgcttctcctggtcactgg agtctcctccccatgtacccaaggaagatggagctcccccatcccacacgcactgcactgccattgtctttttggttgcca cagcetteceggaattetecateceteagtgeaggatggggetggtecteagetgtetgeeteageceteggecece aggaageetetteatgggetgttaggttgactteagttttgeetettggacaacagggggtettgtacatecttgggt 40 accaggaaaagttcaggctatggggggccaaagggagggctgccccttccccaccagtgaccactttattccacttcctc cattacccagitttggcccacagagittggtccccccaaacctcggaccaatatcctctaaacatcaatctatcctcc tgttaaagaaaaaaaaaatgggactgggagcagtggctcatgcctgtaatcccagcactttgggaggccgaggcaggta catcacctgaggtcaggagttcaagactagcctggccaacatagtgaaaccctgtctctactaaaaatacaaagattagt caggtgtggtggcacatgcctgtagtcccagctactggggaggctgaggcaggagaattgcttgaacccgggaagcggag aaagattcaatgaccettgttaaagcatggtaaggaagactttgttcaagggggggtgggactctctcaatcactgcaggg actgcagctatgggattttgcagtgggggcatttggggtcaactatgagtacagcaggggcaagtgggagctgatagcca gggaacagggttggatatctgcagctggaaaattaccaagaggaaacatcaggggaaggggaattctggctaaactgact 50 ggtacctgaccagctccttaagtactaaactgatacctgccatctacctcctggtgtttgtagttggtgtcccggccaat gctgtgaccctgtggatgcttttcttcaggaccagatccatctgtaccactgtattctacaccaacctggccattgcaga ttttettttttgtgttacattgccctttaagatagcttatcatctcaatgggaacaactgggtatttggagaggtcctgtgccgggccaccacagtcatcttctatggcaacatgtactgctccattctgctccttgcctgcatcagcatcaaccgctac 60 ctggccatcgtccatcctttcacctaccggggcctgcccaagcacctatgccttggtaacatgtggactggtgtggcgc aacagttttcttatatatgctgccatttttcatactgaagcaggaatattatcttgttcagccagacatcaccacctgcc atgatgttcacaacacttgcgagtcctcatctcccttccaactctattacttcatctccttggcattctttggattctta 65 attccatttgtgcttatcatctactgctatgcagccatcatccggacacttaatgcatacgatcatagatggttgtggta tgttaaggegagteteeteateettgtgatttttaeeatttgetttgeteeaageaatattattettattatteaceatg ctaactactactacaacaacactgatggcttatattttatatatctcatagctttgtgcctgggtagtcttaatagttgc ttagatccattcctttattttctcatgtcaaaaaccagaaatcactccactgcttaccttacaaaatagtgaaatgatct tagagaacaaggacagccatcacagagaacgtctgttttcaagaacaacataagcatagtgcaaggagctccatttccga 70 actttatcacccagactggcgtgcagtggcactatcttggctcattgcaacctctgcctcccaggtcagcctcccaagta gctgggattacaccaccatgcccagctactaaaaatacttgtatttttagtagagacggggtttcaccatgttgaccagg ctggtcttgaactcctgacctcaagtgatcttccggcctcagcctcccaaagtgctggattacaggcgtgagccactgag ccagccagcattagtaatttttaaaaacactttatcagtattttaaaaatgttaatgcaggagaaaagatatcacaactc tatggaaaatgacatttccatttgccttattgctacttcaagctctttaaatcaccatcttccctatttc (SEQ ID NO:12366)

ctgcgtggccggcgccttggcccttggactctgcatggctgcttggctcatggcggccgccctggcactgcccctgacact accctgcacacgctggcggccagcggccggcgctacggccacgcgctgaggctgaccgcagtggtgctggcctccgccgt ggccttcttcgtgcccagcaacctgctgctgctgctgcattactcggacccgagccccagcgcctggggcaacctctatg gtgcctacgtgcccagcctggcgctgagcaccctcaacagctgcgtggatcccttcatctactactacgtgtcggccgag ttcagggacaaggtgcgggcagggctcttccaacggtcgcgggggacaccgtggcctccaaggcctctgcggaagggg cagccggggcatgggcacccactcctctttgctccagtgacacaaagtggggaaggctgtactgggtcgaacagggtccc ttcccccacttcacgtccttcctgggacctcagaatgtgaccttatttggaaatagggttgttacaactgtcactagcag 10 angagactgaggca (SEQ ID NO:12367) cgcacccgggcccgcaggccagaatcaaaagcaacaaatgccaccttagatccccggtcatttcttctcaggaaccccaa tgataaatatgaaccattttgggaggatgaggagaaaaatgaaagtgggttaactgaatacagattagtctccatcaata 15 aaagcagtcctcttcaaaaacaacttcctgcattcatctcagaagatgcctccggatatttgaccagctcctggctgaca ctctttgtcccatctgtgtacaccggagtgtttgtagtcagcctcccactaaacatcatggccatcgttgtgttcatcct gaaaatgaaggtcaacggcggcggtggtgtacatgctgcacctggccacggcagatgtgctgtttgtcgtcccctgtcaacatgaaggtcaagctattacttttccggcagtgattggcagtttgggtctgaattgtcgatcgcactgcacctggccatgttcggcagtattacattttacggcagtattggcagtttgggtctgaattgtcggcttcggctgtggtgtatcccatgca 20 gtccctctcctggcgtactctgggaagggcttccttcacttgtctggccatctgggctttggccatcgcaggggtagtgc ctctcgtcctcaaggagcaaaccatccaggtgcccgggctcaacatcactacctgtcatgatgtgctcaatgaaaccctg ctcgaaggctactatgcctactacttctcagccttctctgctgtcttctttttttgtgccgctgatcatttccacggtctg ttatgtgtctatcattcgatgtcttagctcttccgcagttgccaaccgcagcaagaagtcccgggctttgttcctgtcag 25 ctgctgttttctgcatcttcatcatttgcttcggacccacaaacgtcctcctgattgcgcattactcattcctttctcac acttccaccacagaggctgcctactttgcctacctcctctgtgtctgtgtcagcagcataagctcgtgcatcgaccccct gttataacagcagtgggcagttgatggcaagtaaaatggatacctgctctagtaacctgaataacagcatatacaaaaag ctgttaacttaggaaaagggactgctgggaggttaaaaagaaaagtttataaaagtgaataacctgaggattctattagt 30 ccccacccaaactttattgattcacctcctaaaacaacagatgtacgacttgcatacctgctttttatgggagctgtcaa gcatgtatttttgtcaattaccagaaagataacaggacgagatgacggtgttattccaagggaatattgccaatgctaca cacatatattatttgcagtgcagtatagaataggcactttaaaacactctttccccgcaccccagcaattatgaaaataa tctctgattccctgatttaatatgcaaagtctaggttggtagagtttagccctgaacatttcatggtgttcatcaacagt gagagactccatagtttgggcttgtaccacttttgcaaataagtgtattttgaaattgtttgacggcaaggtttaagtta 35 ttaagaggtaagacttagtactatctgtgcgtagaagttctagtgtttcaattttaaacatatccaagtttgaattcct aaaatttatggaaacagatgaaaagcctctgttttgattatgggtagtattttttaattttaaacatatgtacacataagcc aaaactgagcataagtcctctagtgaatgtaggctggctttcagagtaggctattcctgagagctgcatgtgtccgccc cgatggaggactccaggcagacacatgccagggccatgtcagacacagattggccagaaaccttcctgctgagcctc acagcagtgagactggggccactacatttgctccatcctcctgggattggctgtgaactgatcatgtttatgagaaactg gcaaagcagaatgtgatatcctaggaggtaatgaccatgaaagacttctctacccatcttaaaaacaacgaaagaaggca tggacttctggatgcccatccactgggtgtaaacacatctagtagttgttctgaaatgtcagttctgatatggaagcacc cattatqcqctqtqqccactccaataggtgctgagtgtacagagtggaataagacagagacctgccctcaagagcaaagt tttgggttactatttcttgtggttataacttaatgaaaacaatgcagtacaggacatatattttttaaaataagtctgat cagtctgcttagaaataacagaagaaaatagaattgacattgaaatctaggaaaattattctataatttccatttactta aatgtttatttaaaagagcaggcaggcgcggtggctcacgcctgtaatcccagcactttgggaggctgaggcgggtggatcacgaggtcaggagatcgagaccatcctggctaacacggtgaaacccgtctctactaacaaaatgcaaaaaaattagccg 50 ggcgtggtggcaggcacctgtagtcccagctactcgggaggctgaggcaggagactggcgtgaacccaggaggcggacct tgtagtgagccgagatcgcgccactgtgctccagcctgggcaacagagcaagactccatctc (SEQ ID NO:12368) 55 ccaaccttacccattaagacctttcgtggagctcccccaaattcttttgaagagttccccttttctgccttggaaggctg gacaggagccacgattactgtaaaaattaagtgccctgaagaaagtgcttcacatctccatgtgaaaaatgctaccatgg ggtacctgaccagctccttaagtactaaactgatacctgccatctacctcctggtgtttgtagttggtgtcccggccaat gctgtgaccctgtggatgcttttcttcaggaccagatccatctgtaccactgtattctacaccaacctggccattgcaga ttttcttttttgtgttacattgccctttaagatagcttatcatctcaatgggaacaactgggtatttggagaggtcctgt gccgggccaccacagtcatcttctatggcaacatgtactgctccattctgctccttgcctgcatcagcatcaaccgctac ctggccatcgtccatcctttcacctaccggggcctgcccaagcacatctatgccttggtaacatgtggactggtgtgggc aacagttttcttatatatgctgccatttttcatactgaagcaggaatattatcttgttcagccagacatcaccacctgcc atgatgttcacaacacttgcgagtcctcatctcccttccaactctattacttcatctccttggcattctttggattctta attocatttgtgcttatcatotactgctatgcagccatcatccggacacttaatgcatacgatcatagatggttgtggta tgttaaggcgagtctcctcatccttgtgatttttaccatttgctttgctccaagcaatattattcttattattcaccatg ctaactactactacaacaacaacagatggcttatattttatatatctcatagctttgtgcctgggtagtcttaatagttgc ttagatccattcctttattttctcatgtcaaaaaccagaaatcactccactgcttaccttacaaaatagtgaaatgatct tagagaacaaggacagccatcacagagaacgtctgttttcaagaacaacataagcatagtgcaaggagctccatttccga 70 actttatcacccagactggcgtgcagtggcactatettggctcattgcaacctctgcctcccaggtcagcctcccaagta gctgggattacaccaccatgcccagctactaaaaatacttgtatttttagtagagacggggtttcaccatgttgaccagg ctggtcttgaactcctgacctcaagtgatcttccggcctcagcctccaaagtgctggattacaggcgtgagccactgag ccagccagcattagtaatttttaaaaacactttatcagtattttaaaaatgttaatgcaggagaaaagatatcacaactc
tatggaaaatgacatttccatttgccttattgctacttcaagctctttaaatcaccatcttccctatttccatgtgggg 75 ctatgggctggtcctggtggtggggctgccagcaatggctgccggctgtgggggtgctggccacgcaggacactcggctgccccgcggatcgctaccaccatgctgctgatgatgacctccgcgactgctgctgccccggggatcgcctacacac ctgcgtggccagcgcttcggggaggccgcctgccgcctggccacggccgcactctatggtcacatgtatggctc

ggcgcctggccttggactctgcatggctgcttggctcatggcgccgccctggcactgccctgacactgcagcggcag acctteeggetggegegeteegategegtgetetgeeatgaegegetgeeeetggaegeaeaggeeteecaetggeaace ggcettcaectgcctggcgctgttgggctgtttectgcccctgctggccatgctgctgtgctacggggccaccctgcaca cgctggcggccagcggccggcgctacggccacgcgctgaggctgaccgcagtggtgctggcctccgccgtggccttcttc gtgcccagcaacctgctgctgctgctgcattactcggacccgagccccagcgcctggggcaacctctatggtgcctacgt gcccagcctggcgctgagcaccctcaacagctgcgtggatcccttcatctactactacgtgtcggccgagttcagggaca aggtgcgggcagggctcttccaacggtcgccgggggacaccgtggcctccaaggcctctgcggaagggggcagccgggg atgggcacccactcctctttgctccagtgacacaaagtggggaaggctgtactgggtcgaacagggtcccttcccccact ${\tt tcacgtccttcctgggacctcagaatgtgaccttatttggaaatagggttgttacaactgtcactagcagaggtcacttt}$ ggagaagggtgggccttacatccagtgtgggtggtgtcctcataagataaggagaggccaggcctggtggctcacgcctg taatcccagcactttaagaggccaaggcggatggatcacttgagcccaggagttcaacaccagcctgagcaacatggtaa ccaatgataaatatgaaccattttgggaggatgaggagaaaaatgaaagtgggttaactgaatacagattagtctccaatc
aataaaagcagtcctcttcaaaaacaacttcctgcattcatctcagaagatgcctccggatatttgaccagctcctggct
gacactctttgtcccatctgtgtacaccggagtgtttgtagtcagcctcccactaaacatcatggccatcgttgtgttca tectgaaaatgaaggtcaagaagccggcggtggtgtacatgctgcacctggccacggcagatgtgctgtttgtgtctgtg ctcccctttaagatcagctattacttttccggcagtgattggcagtttgggtctgaattgtcgctgtactgcagcatttactgtaccatgcagcatttactgtaccatgcagcatttactgtaccatgcagcatttactgtaccatgcagcatttactgtaccatgcagcatttactgtaccatgcagcatttactgtaccatgcagcatttactgtaccatgacagtcataagcattgaccggtttctggctgtggtgtatccca 20 gtgcctctcgtcctcaaggagcaaaccatccaggtgcccgggctcaacatcactacctgtcatgatgtgctcaatgaaac cctgctcgaaggctactatgcctactacttctcagccttctctgctgtcttctttttttgtgccgctgatcatttccacgg tctgttatgtgtctatcattcgatgtcttagctcttccgcagttgccaaccgcagcaagaagtcccgggctttgttcctg 25 tcagctgctgttttctgcatcttcatcatttgcttcggacccacaaacgtcctcctgattgcgcattactcattcctttc tcacacttccaccacagaggctgcctactttgcctactcctctgtgtctgtgtcagcagcataagctcgtgcatcgacc agcagttataacagcagtgggcagttgatggcaagtaaaatggatacctgctctagtaacctgaataacagcatatacaa aaagctgttaacttaggaaaagggactgctgggaggttaaaaagaaaagtttataaaagtgaataacctgaggattctat tagtccccacccaaactttattgattcacctcctaaaacaacagatgtacgacttgcataactgcttttatgggagctg tcaagcatgtatttttgtcaattaccagaaagataacaggacgagatgacggtgttattccaagggaatatttgccaatgc tacagtaataaatgaatgtcacttotggatatagctaggtgacatatacatacttacatgtgtgtatatgtagatgtatg cacacacatatattatttgcagtgcagtatagaataggcactttaaaacactctttccccgcaccccagcaattatgaaa ataatetetgatteeetgatttaatatgeaaagtetaggttggtagagtttageeetgaacattteatggtgtteateaa cagtgagagactccatagtttgggcttgtaccacttttgcaaataagtgtattttgaaattgtttgacggcaaggtttaa actggcaaagcagaatgtgatatcctaggaggtaatgaccatgaaagacttctctacccatcttaaaaacaacgaaagaa ggcatggacttctggatgcccatccactgggtgtaaacacatctagtagttgttctgaaatgtcagttctgatatggaag cacccattatgcgctgtgggccactccaataggtgctgagtgtacagagtggaataagacagagacctgccctcaagagca aacatttgggttactatttcttgtggttalaacttaatgaaacaatgcagtacaggacatatatttttaaaataagtc atgtcagtctgcttagaaataacagaagaaaatagaattgacattgaaatctaggaaaattattctataaatttccattta cttaagacttaatgagactttaaaagcattttttaacctcctaagtatcaagtatagaaaatcttcatggaattcacaaa 50 ggcaaatgtttatttaaaagagcaggccaggcgcggtggctcacgcctgtaatcccagcactttgggaggctgaggcggg tggatcacgaggtcaggagatcgagaccatcctggctaacacggtgaaacccgtctctactaaaaatgcaaaaaaatta gccgggcgtggtggcaggcacctgtagtcccagctactcgggaggctgaggcaggagactggcgtgaacccaggaggcgg accttgtagtgagccgagatcgcgccactgtgctccagcctgggcaacagagcaagactccatctc (SEQ ID NO:12369) cagogoacgocgogoatcoggocogggttctgacctgcagococogtctccttggcattoctgggccccagtcactcctc tecetgeeceettgetggggcagggacggegtgttgtebgtggtgctgeegtttgbggtbtggcgctcebebtte ccttttctccttgttttccgtttctcttgccgtctgtggttcagattcacaaactgcaggactgggcagggagcagacag tgagcaaacgccagcagggctgctgtgaatttgtgtgtaaggattgagggacagttgcttttcagcatgggcccaggaatgc caaggagacatctatgcacgaccttgggaaatgagttgatgtctccggtaaaacaccggagactaattcctgccctgccc aattttgcagggagcatggctgtgaggatggggtgaactcacgcacagccaaggactccaaaatcacaacagcattactg gagetteecteeegtgtgtteteegteeetgeeecageaagacaacttagateteeaggagaactgeeateeagetttgg tgcaatggctgagtgcacaagtgagttgttgccctgggtttctttaatctattcagctagaactttgaaggacaatttct tgcattaataaaggttaagccctgaggggtccctgataacaacctggagaccaggattttatggctcccctcactgatgg 70 acaaggaggtctgtgccaaagaagaatccaataagcacatattgagcacttgctgtatatgcagtattgagcactgtagg caagacccaagaaagagaaggagccatctccatcttgaaggaactcaaagactcaagtgggaacgactgggcactgccac caccagaaagctgttcgacgagacggtcgagcagggtgctgtgggtgatatggacagcagaagggggagaccaaggttcc agctcaaccaataactattgcacaaccacctgtccctgcctcagttcccttttatgtaacatgaagtcgttgtgagggtt aaaggcagtaacaggtataaagtacttagaaaagcaaaagggtgctacgtacatgtgaggcatcattacgcagacgtaact gggatatgtttactataaggaaaagacactgaggtetagaaatagctccgtggagcagaatcagtattgggagccggtgg cggtgtgaagcaccagtgtctggcacacagtaggtgctcattggctcccttccacctgtcattcccaccaccaccctgaggcc ccaaccgccacacacacaggagcatttggagagaaggccatgtcttcaaagtctgatttgtgatgaggcagaggaagata acctggagaggctagaaccaagaagggctagaacctggagggctagaacctagagaagctaaaacctgagctagaagct

ggaggactagaacctggagggctggaatctgaagggctagaacctggagggctggaatctggaggctagaacctggagg gctagaacctggagggctagaacctagaagggctagaacctggagggctggaatctggagagctagaacctggagggcta gaacctggagggctagaacctagaagggctagaacctggagggctagaacctggcaggttagaacctagaagggctagaa cctggagagccagaacctggagggctagaacctggaagggctagaacctgtagagctagaacatggagagctagaacccg gcaggctagaacctggcaagctagaacctggagggaatgaacctggagggctagaacctggagaatgagaaaaatttaca ctgtgttttgtcacacagggcagtcattcagcaccagagcacgtgatggtctgagactctctttaggagcagagctctgc gcaatggccatgtggggatccacacctggtctgaggggcaactgagtctgcgggagaagagggccctatgcatggtgta gatgccctgataaagaacatctgtcctgtgaaagactcaatgagctgttatgttgtaaacaggaagcatttcacatccaa tcccagcactttggagccgagcgggtggattgtgtgtgaggtcaggagttcgagaccaacctggccaacatggcaaaaacctc 15 20 ctgaactgaccgttgtctgatctccacctcccaactgaattaggggagctgggcttctggaaacccaggtgccgggtgtt 25 ggagtgatgtgaaacttgaagggcggtcagagcaagggtcgggaatggaaggcccttgggaaaaaaaggccctttcaacta ggggcacagaggaggccctgggctgagaacttgacagcaccttgtaattggtaagccaagcccgaagggactggaaatac tragatgtgtrtgtrtcccttattaggtrraagtrcctraagarcetgtrtccatcacagtgrtrcagtrcagarcect 30 teccetttaacagttecagcetttaacagttecagtetaaacaeatgacettteteetetaaatcageeeeeatetetg tcaggtttaccetetaaactcetetggaatccagtetetcagtetecateateceaggtegaagetaatgggetaactgg tccttgcttccactctacccccactgcagtcctgacttcctgagcagcagccagggcctaatcgatattcacaccaagcg ccaacctgactgagatatcctcctgcaccatcatcctccaccctgttttagttctgctcaccctcagtgttctcatcaat 35 aatccactcccctcacaggcgcgtttgggaccccatgttctatgctctacaggaccttttgcttgatttttcactgtac ttaggtcagtttgcagttattaagtgactgagcaatgtctggcttctccagtagactgtcagctcctagccattgtatac ctagcaccgctgtgtgggagcacgtgacaaacgtccagtgagtcagggactcagcagtctccatttctccgccctgctggagaatgcgtgtatttggcaatccccagccctgtgccatctaaccatcttttcttctctgttcagcccaggtgtggcctc ccctggaaagctcaactctcatgccccggacaacagttgaaggaaccatggtgatgttaagcccaaagacaaaacctctcaggtgtgccaagtccctgttggaatcttgggagcagagggaatgttctgtggtctagaggaagaggggctcagggaggaga agggcacattcctggttgttatatgtttctatctatcccagatgaacttggaagtgaagggaagagagttaaacattaaa gtaaatacccagtggatcagacagcaatgtgccagattgccttggaaacaaaatatctccaacacatggctgacatttgg tgggagatcagaacaccctaaagagagaatttaaggggaggggggaggacctgagccagagtagaagcagaggatagg gagatetgttettggggaeageatttgeaagaaaeaaggetgaggggteeaeteeaaeeteteeaeeetgetgeaggtge tgcctatgatgaagatgagcagatggccatctcagctggggccacagtgcactggacctatagtttccaattccgcactc agcaggcatetttetgatgatecgatggetteteagagecagggatgggecaggatecateceettggetaetgtettge tgagaaatttataagaagcatctggtgctatactttggtctctagtgagttagctcatgaaagatgatagactctccaag ccaggggtatgcaggaaatgggttttctgtagctacagaaatggggttgagggttggaccaagggactacccaggggaag tcttaccttcagaggactctggaaaggaggctgcaagttttcatgggtcaagaattcagagcccagtagagacagcttat ctctgttccaagatgtctggggccttggttggaagattcaaaggctaggaaaccaggagccaccaaaagcgtaactgggg ccagaggatccactttcaaggtggcaagttggttccccccatgtggctgcttgagtatcctcacatggcggctcacatcc ttccaagtaagcaatgcaaaaggccaagaaagatgctgcaaagatgttatgacctagcctcagaaatcacacccatccc 55 tgccaccattagtaagaagtccagcccacgtccaggagaagaggaagcagattcctccttttgaaatgaagaatatcaag taattoggggggcatatgaaagccaccacaccacagggatetttttagagcatacttcttataccatcactgtagttc cttaagactcaggggcaaagcctcacttocttagcacccagtgaagaccacgcttactccctcactcaacctcttgctac ttcccacctctcctgtccaccttgtccactttccagaacataccaacagcttctccagttctgtcctctgctcag gtcacctccaaccccttacccaccagcccctctccaagtctgtgtcccacaacccccctgctcccagggcaccctc caccctctgggccacagttgtcaggagtcaggcaggggcaggggtggtgtcttctttgtgttcttgcactcagggc aqagctcagcacagagcagacgctcaaaaaacatttaaaggatagaagcattgatttgtgggtcccccagtctggctcca qqatqccagccagctgctcctagaaqcaaacggacttttcctgggaaatcccagaggtgatgatcagtaatctctcccgt gactogtagttcagctcttcctccatgagcctgactatcagtggaccttccagaaagagccccttttccttctctcaccc 65 acagcacagggcactgggaaaatgcccaatgagtcctgcctctgggttgtgcttttggacttttcagtgtgtetcgcatcc actettcaacttgaatgttgcaacagccatgaaaaaagaaatgcaaagcgattcaggatgagagcaataccctactccaa agaaggcaacatagaagctcagagagatcaagcaatttgcccaagaccacacagctaggagtggaactcatggctgtcca tgcctaagaatgaaagaggagccagtgggttaaagatgaggtcaccaacaacggtggtgttggagtttaccactgataat 70 aagggtgcaaaatgtaaattactaatgtttattgagcctagtgcagtgcgtggggcatttttgcacattgtctctgatccc tatgacaaccctgagaggtagtggttttaactgccatgttacaggtgaggtcattgtgggttcaaggacgttaagtaactt ccccagcgtgacacggcttataagtaaggcagccaggatgtgaacccagtaggactatctggctgcaaagtccccacccc cctcgccatctgtatcctccaatcacttcagtgctttgctgcatagaaggtaacggaaatcacgatgccacagactgtcc aggaagacagaaactaggcagatgggctggccatggtctccaagccagactggaatctccaggtctggaatgatatcatt 75 tttctcttttaataaattaactcaccaccacacgctttgagaggctcaaagttgaccaactcccttgggagggccccg gttgataaggaaggaacgtgaatcctcccatcacggaagcttcaaggaggtcaagggtccaacacttgagattgttagtg ctgttggtggatactggccaaggaaatatcccagtggagcctcgagatgaagaacatgaggcccccgtttagaaccaagg gaggggtaacagcctctttccactttcttccagcgccgacatgctcaatgtcaccttgcaagggcccactcttaacggga

ctacctggggaacctggccgcagcagacctgatcctggcctgcgggctgcccttctgggccatcaccatctccaacaact togactggctctttggggagacgctctgccgcgtggtgaatgccattatctccatgaacctgtacagcagcatctgtttc ctgatgctggtgagcatcgaccgctacctggccctggtgaaaaccatgtccatgggccggatgcgcgtgcgctgggctgggc cgtgggcaagcgcttccgaaagaagtcttgggaggtgtaccagggagtgtgccagaaagggggctgcaggtcagaaccca ttcagatggagaactccatgggcacactgcggaactccatctccgtggaacgccagattcacaaactgcaggactgggc gggagcagacagtgagcaaacgccagcagggctgctgtgaatttgtgtaaggattgagggacagttgcttttcagcatgg gcccaggaatgccaaggagacatctatgcacgaccttgggaaatgagttgatgtctccggtaaaacaccggagactaatt cctgccctgcccaattttgcagggagcatggctgtgaggatggggtgaactcacgcacagccaaggactccaaaatcaca agaggagtgactgagcttccctcccgtgtgttctccgtccctgccccagcaagacaacttagatctccaggagaaactgcc atccagctttggtgcaatggctgagtgcacaagtgagttgttgccctgggtttctttaatctattcagctagaactttga aggacaatttettgeattaataaaggttaageeetgaggggteeetgataacaacetggagaceaggattttatggetee cctcactgatggacaaggaggtctgtgccaaagaagaatccaataagcacatattgagcacttgctgtatatgcagtatt 20 gagcactgtaggcaagagggaagaaggaggagcatctccatcttgaaggaactcaaagactcaagtgggaacgact gggcactgccaccaccagaaagctgttcgatgagacggtcgagcagggtgctgtggggtgatatggacagcagaaggggga gccaggtfccagctcaccaatactattgcacaccacctgtcctgcctcgccttcaaagatgagctgttcccgccgccac tccagetetggettetgggetecgaggaggggtggggacggtggtgacggtggggacatcaggetgccccgcagtaccag 25 gttgagctcttcaatattttagtgaaagctatagatgaggctccataggggataaagcacagacacaccttttcagaggg agttcacagccaagccaggctagcgccaggccacccataaactgatctgagactctgtttccctgtctccatgatgatg ggatcaggcttgattgctggtttgttaggcttgttatgaatcaagtcacagggaaggagggacggatggtgggggacgtcctctgtcctctgtctcttccccagatccactgggcccactcttatctgttctcttctgaaggattttaaggct tcaaaaaaaatgttttgaaagtccctgcctttccagctcctaccgtctcagccctgggagtgtaaagtgctgcagata acgggcagccgggcctacgcaaacatggaaatcttccaagagcctccctggcccqcagggctcagagggtggcagagcgg gcgagggggaagtgccaggaggctgatgacatcactacccagcccttcaaagatgagctgttcccgccgccactccagc tctggcttctgggctccgaggaggggtggggacggtggtgacggtgggacatcaggctgccccgcagtaccagggagcg aaaagttcccttccttccggagggaggcagattcacaaactgcaggactgggcagggagcagacagtgagcaaacgccag cagggctgctgtgaatttgtgtaaggattgagggacagttgcttttcagcatgggcccaggaatgccaaggagacatcta tgcacgaccttgggaaatgagttgatgtctccggtaaaacaccggagactaattcctgccctgcccaattttgcagggag catggctgtgaggatggggtgaactcacgcacagccaaggactccaaaatcacaacagcattactgttcttatttgctgc gtataaagtacttagaaaagcaaagggtgctacgtacatgtgaggcatcattacgcagacgtaactgggatatgtttact ataaggaaaagacactgaggtctagaaatagctccgtggagcagaatcagtattgggagccggtgggggtgtgaagcacc aqtqtctggcacacagtaggtgctcattggctcccttccacctgtcattccaccaccctgaggccccaaccgccacaca cacaggagcatttggagagaaggccatgtcttcaaagtctgatttgtgatgaggcagaggaagatatttctaatcggtct tgcccagaggatcacagtgctgagacccccaccaccagcggtacctgggaagggggagagtgcaggcctgctcaggga gagtgtgaaaaggaatggcaatggtgttcaccatcggcagtgccagggcagcactcattcacttgataaatgaatattta ttagctggttggagagctagaacctggagagctagaacctggagaactagaacctggagggctagaacctggagaggcta gaaccaagaagggctagaacctggagggctagaacctagagaagctaaaacctgagctagaagctggaggactagaacc Eggagggctggaatctgaagggctagaacctggagggctggaatctggagagctagaacctggagggctagaacctggag ggctagaacctagaagggctagaacctggagggctggaatctggagagctagaacctggagggctagaacctggagggct agaacctagaagggctagaacctggagggctagaacctggcaggttagaacctagaagggctagaacctggagagccaga acctggagggctagaacctggaagggctagaacctgtagagctagaacatggagagctagaacccggcaggctagaacct ggcaagctagaacctggagggaatgaacctggagggctagaacctggagaatgagaaaaatttacatggcaaagagccca agggctctcagagaggaaagctcctaggtcttcctttccctctgcaaactccctgccttgaaggttcagaaggactgtg

cgtgctcgttgcatcctttgcaagtgtccaaaccctgatcccagctgtgcttaggggttcctgcaaaccttttccaggtg ttaattacctccacttcatttcctgtttaccaactcagctttttgttttagtgtgtttgaattccctgaactgaccgtt gtctgatctccacctccaactgaattaggggagctgggcttctggaaacccaggtgccgggtgttgcagagtggctgaa acccgcactcacacacttggacatgcatagaccacagctttccacacccttcctagacaggggtcacttggtatcctgga cttgaagggcggtcagagcaagggtcgggaatggaaggcccttgggaaaaaaggccctttcaactaggggcacagaggag gcctgggctgagaacttgacagcaccttgtaattggtaagccaagcccgaagggactggaaatactcagatgtgtctgt 10 tocagootttaacagttccagtctaaacacatgacctttctcctctaaatcagccccccatctctgcctttgcaggagat 15 agttattaagtgactgagcaatgtctggcttctcccagtagactgtcagctcctagccattgtatacctagcaccgctgtg tgggagcacgtgacaaacgtccagtgagtcagggactcagcagtctccatttctccgccctgctgcagaatgcgtgtatt 20 tcaggtgagtcaaagggattcctcagttcactagttaggggaggtgggcagacaccctggagaactccctggaaagctca actctcatgccccggacaacagttgaaggaaccatggtgatgttaagcccaaagacaaaacctctcaggtgtccaagtcc ctgttggaatcttgggagcagagggaatgttctgtggtctagaggaagaggggtcagggaggagaagagggcacattcctg 25 gttgttatatgtttctatctatcccagatgaacttggaagtgaagggaagagttaaacattaaagtaaatacccagtg gatcagacagcaatgtgccagattgccttggaaacaaaatatctccaacacatggctgacatttggtgggagatcagaac accetaaagagagaatttaaggggaggggggggggggcacetgagecagagtagaagcagaggataggggagatetgttettg gggacagcatttgcaagaaacaaggctgaggggtccactccaacctctccaccctgctgcaggtgctgcctatgatgaag atgagcagatggccatctcagctggggccacagtgcactggacctatagtttccaattccgcactcagcaggcatctttc 30 tgatgatcogatggcttctcagagccagggatgggccaggatccatccccttggctactgtcttgctgagaaatttataa gcagcatctggtgctatactttggtctctagtgagttagctcatgaaagatgatagactctccaagccaggggtatgcag gaaatgggtfftctgtagctacagaaatggggttgagggttggaccaagggactacccaggggaagtcttaccttcagag gactctggaaaggaggctgcaagttttcatgggtcaagaattcagagcccagtagagacagcttatctctgttccaagat gtccaacatctagtgtcactttccagaacataccaacagcttccccagttctgtgcctctgctcaggctgttccccctgc ctgqtccacttqtcctccttcttgtccggtcaaaatgcttcttatccttcaagacccagctctagagtcacctccaaccc cttacccaccagcccctctccaagtctgtgtcccacaaccccctgctcctccagggcaccctccaccatctgggcca cagttgtcaggagtcaggcagggcagggccgggtggtgtcttctttgtgttcttgcactcaggcagagctcagcacag tgctcctagaagcaaacggacttttcctgggaaatcccagaggtgatgatcagtaatctctcccgtgactcgtagttcag ctcttcctccatgagcctgactatcagtggaccttccagaaagagccccttttccttctctcacccacagcacagggcac tgggaaaatgcccaatgagtcctgcctctgggttgtgctttggacttttcagtgtgtctcgcatccactcttcaacttga atgttgcaacagccatgaaaaaagaaatgcaaagcgattcaggatgagagcaataccctactccaaagaaggcaacatag aagctcagagagatcaagcaatttgcccaagaccacacagctaggagtggaactcatggctgtccaagccccatgcctct 50 agaggagccagtgggttaaagatgaggtcaccaacaacggtggtgttggagtttaccactgataataagggtgcaaaatg taaattactaatgttaattgagcctagtgcagtgcgtggggcattttgcacattgtctctgatccctatgacaaccctga 55 tgtaagacccaggggagtcaggtgcactggagcggggcatgcagaaaacagcctgagctccacctcggcttctccttgtctggttgtccttaacccctgtctccttctggaccagtttttgtccttcccttgtgaccgctgaggggtaacagcc 60 tettteeaetttettteagegeegaeatgeteaatgteaeettgeaagggeeeaetettaaegggaeetttgeeeagage aaatgcccccaagtggagtggctgggctggctcaacaccatccagcccccttcctctgggtgctgttcgtgctggccac cctagagaacatctttgtcctcagcgtcttctgcctgcacaagagcagctgcacggtggcagagagatctacctggggaacc 65 tggccgcagcagacctgatcctggcctgcgggctgcccttctgggccatcaccatctccaacaacttcgactggctcttt ggggagacgctctgccgcgtggtgaatgccattatctccatgaacctgtacagcagcatctgtttcctgatgctggtgag całogacogotacołggocołggłgaaaaccałgłocałggocoggałgogoggotgogotgggocaagototacagot tggtgatctgggggtgtacgctgctcctgagctcacccatgctggtgttccggaccatgaaggagtacagcgatgagggc cacaacgtcaccgcttgtgtcatcagctacccatccctcatctgggaagtgttcaccaacatgctcctgaatgtcgtggg 70 cttcctgctgcccctgagtgtcatcaccttctgcacgatgcagatcatgcaggtgctgcggaacaacgagatgcagaagt tcaaggagatecagaeggagaggagggecaeggtgetagtectggttgttgetgetgetatteateatetgetggetgeee ttccagatcagcaccttcctggatacgctgcatcgcctcggcatcctctccagctgccaggacgagcgcatcatcgatgt aatcacacagategeeteetteatggeetacageaacagetgeeteaaceeactggtgtacgtgategtgggeaageget tccgaaagaagtcttgggaggtgtaccagggagtgtgccagaaagggggctgcaggtcagaacccattcagatggagaac 75 cattaataaaggttaagccctgaggggtccctgataacaacctggagaccaggattttatggctcccctcactgatggac

aaggaggtctgtgccaaagaagaatccaataagcacatattgagcacttgctgtatatgcagtattgagcactgtaggca agagggaagaaagagaaggagccatctccatcttgaaggaactcaaagactcaagtgggaacgactgggcactgccacca ccagaaagctgttcgatgagacggtcgagcagggtgctgtgggtgatatggacagcagaagggggagccaggttccagct caccaatactattgcacaccacctgtcctgcctcctgcagaaaacagcctgagctccacctcggcttctccttgccctgg ctggttgtccttaacccctgtctccttctggaccagtttttgtccttcccttgtgaccctgaggggtaacagcctctttt ccactttctttcagcgccgacatgctcaatgtcaccttgcaagggcccactcttaacgggacctttgcccagagcaaatg ccccaagtggagtggctggctgactaacaccatccagcccccttcctctgggtgctgttcgtgctggccaccctag agaacatctttgtcctcagcgtcttctgcctgcacaagagcagctgcacggtggcagagatctacctggggaacctggcc gcagcagacctgatcctggcctgcgggctgcccttctgggccatcaccatctccaaccacttcgactgctctttgggga 10 gacgctctgccgcgtggtgaatgccattatctccatgaacctgtacagcagcatctgtttcctgatgctggtgagcatcg accgctacctggccctggtgaaaaccatgtccatgggccggatgcgggcgtgcgctgggccaagctctacagcttggtg atctgggggtgtacgctgctcctgagctcacccatgctggtgttccggaccatgaaggagtacagcgatgagggccacaa cgtcaccgcttgtgtcatcagctacccatccctcatctgggaagtgttcaccaacatgctcctgaatgtcgtgggcttcc tgctgcccctgagtgtcatcaccttctgcacgatgcagatcatgcaggtgctgcggaacaacgagatgcagaagttcaag 15 gatcagcacettcetggatacgetgcatcgceteggcatectetecagetgccaggacgagcgcatcatcgatgtaatca cacagategeeteetteatggeetacageaacagetgeeteaaeeeactggtgtacgtgategtgggeaagegetteega aagaagtcttgggaggtgtaccagggagtgtgccagaaagggggctgcaggtcagaacccattcagatggagaactccat gggcacactgcggacctccatctccgtggaacgccagattcacaaactgcaggactgggcagggagcagacagtgagcaa 20 acgccagcagggctgctgtgaatttgtgtaaggattgagggacagttgcttttcagcatgggcccaggaatgccaaggag acatetatgcacgacettgggaaatgagttgatgteteeggtaaaacaeeggagaetaatteetgneetgeeeaattttg cagggagcatggctgtgaggatggggtgaactcacgcacagccaaggactccaaaatcacaacagcattactgttcttat 25 30 gtaacaggtataaagtacttagaaaagcaaagggtgctacgtacatgtgaggcatcattacgcagacgtaactgggatat gtttactataaqqaaaaqacactgaggtctagatgatcctatcacaacctgagagtagtttttactccatttacaggtga taggactatetggetgeaaagteeeeaceteeetegeeatetgtateeteeaateatetteagtgetttgetgatagaa 35 ggtacggaaatacgatgccacagactgtccaggaagacagaaactaggcagatgggctggccatggtctcccaagccagac aaggtgaccaactcccttgggagggccccggttgataaggaatgtgaatcctcccatcacggaagcttcaaggagg tcaagggtccaacacttgagattgttagtgctgttggtggatactgcagaatatccagtggagcctcagatgaagaacat gaggccccgtttagatccaaggatcagaggggctctgtaagacccaggggagtcaggtgcactggagcgcgggctgcag aaaacagcetgagetecaceteggetteteettgecetggetggttgteettaacccetgteteettetggaccagtttt agggcccactettaacgggacctttgcccagagcaaatgcccccaagtggagtggctgggctgactaacaccatccagcccccttcctctgggtctgttcgtgctggccaccctagagaacatetttgtcctcagcgtcttctctgcacacaagagc gttcggaccatgaaggagtacagcgatgagggcacaacgtcaccgcttgtgtcatcagctacccatcctcatctgggaggtgtcaccaacatgctcctgatgtgtgtcatcacctatctgtgagagtgttcaccaacatgctcctgaatgtcgtgggcttcctgctgctgccctgagtgtcatcaccttctgcacgatgcagatgcagatgcagatgca 50 atgcaggtgctgcggaacaacgagatgcagaagttcaaggagatccagacggagaggagggccacggtgctagtcctggt tqtqctqctattcatcatctgctggctgcccttccagatcagcattcctggatacgctgcatcgcctcggcatcc tetecagetgecaggaegagegeateategatgtaateacacagategeeteetteatggeetacageaacagetgeete aacccactggtgtacgtgatcgtgggcaagcgcttccgaaagaagtcttgggaggtgtaccagggagtgtgcagaaagg gggctgcaggtcagaacccattcagatggagaactccatgggcacactgcggacctccatctccgtggaacgccagattc 55 acaaactgcaggactgggcagggagcagacagtgagcaaacgccagcagggctgctgtgaatttgtgtaaggattgaggg acagttgcttttcagcatgggcccaggaatgccaaggagacatctatgcacgaccttgggaaatgagtgttgatgtctcc ggtaaaacaccggagactaattcctgccctgcccaattttcgagggagcatggctgtgaggatggggtgaactcacgcac 60 tagatetecaggagaactgccatecacgtttggtgcaatggctgagtgcacaagtgagttgttgccctgggtttctttaa tctatcagctagaactttgaaggacaatttcttgcattaataaaggttaagccctgaggggtcccttgataacaacctgg agaccaggattttatggctcccctcactgatggacaaggaggtctgtgccaaagaagaatcaataagcacatatgagcac ggaacctggccgcagcagacctgatcctggcctgcgggctgccttctgggccatcaccatctccaacaacttcgactgg ctctttggggagacgctctgccgcgtggtgaatgccattatctccatgaacctgtacagcagcatctgtttcctgatgct ggtgagcatcgaccgctacctggccctggtgaaaaccatgtccatgggccggatgcgcggcgtgcgctgggccaagctct acagcttggtgatctgggggtgtacgctgctcctgagctcaccatgctggtgttccggaccatgaaggagtacagcgat gagggccacaacgtcaccactgttcatcaccatccctcatctgggaagtgttcaccaacatgctcctgaatgt cgtgggetteetgetgeceetgagtgteateaeettetgeaegatgeagateatgeaggtgetgeggaaeaaegagatge agaagttcaaggagatccagacggagaaggaggagcacggtgctagtcctggttgtgctgctgctattcatcatctgctgg ctgcccttccagatcagcaccttcctggatacgctgcatcgcctcggcatcctctccagctgccaggacgagcgcatcat 75 cqatqtaatcacacagatcgcctccttcatggcctacagcaacagctgcctcaacccactggtgtacgtgatcgtgggca agcgcttccgaaagaagtcttgggaggtgtaccagggagtgtgccagaaagggggctgcaggtcagaacccattcagatg qaqaactccatgggcacactgcggacctccatctcgtggaacgccagattcacaaactgcaggactgggcagggaagcag acagtgagcaaacgccagcagggctgctgtgaatttgtgtaaggattgagggacagttgcttatgttctctccctggaag atatcaatgtttctgtctgttcgtgaggactccgtgcccaccacggcctctttcagcgccgacatgctcaatgtcacctt agcagetgeacggtggcagagatetacctggggaacetggccgcagcagacetgatectggcctgcgggctgcccttctg

ggccatcaccatctccaacaacttcgactggctctttggggagacgctctgccgcgtggtgaatgccattatctccatga acctgtacagcagcatctgtttcctgatgctggtgagcatcgaccgctacctggccctggtgaaaaccatgtccatgggc cggatgcgcggcgtgcgctgggccaagctctacagcttggtgatctgggggtgtacgctgctcctgagctcacccatgct ggtgttccggaccatgaaggagtacagcgatgagggccacaacgtcaccgcttgtgtcatcagctacccatccctcatct gggaagtgttcaccaacatgctcctgaatgtcgtgggcttcctgctgcccctgagtgtcatcaccttctgcacgatgcag atcatgcaggtgctgcggaacaacgagatgcagaagttcaaggagatccagacggagaggagggccacggtgctagtcct ggttgtgctgctattcatcatctgctggctgcccttccagatcagcaccttcctggatacgctgcatcgcctcqgca tectetecagetgecaggaegagegeateategatgtaateacaeagategeeteetteatggeetaeageaaeagetge ctcaacccactggtgtacgtgatcgtgggcaagcgcttccgaaagaagtcttgggaggtgtaccagggagtgtgccagaa agggggctgcaggtcagaacccattcagatggagaactccatgggcacactgcggacctccatctccgtggaacgccaga ttcacaaactgcaggactgggcagggagcagacagtgagcaaacgccagcagggctgctgtgaatttgtgtaaggattga gggacagttgcttgcccttcaaagatgagctgttcccgccgccactccagctctggcttctgggctccgaggaggggtgg ggacggtggggacatcaggctgccccgcagtaccagggagcgactgaagtgcccatgccgcttgctccggagaaaggtggg 15 aggcagcgggagaagtttccctgtggtcgtggggagttgcccttcaaagatgagctgttcccgccgccactccagctct ggcttctgggctccgaggagggtggggacggtggtgacggtggcgacatcaggctgcccgcagtaccagggagcgact gaagtgcccatgccgcttgctccggagaaggtgggtgccgggcaggggctgctccagccgcctcacctctgctgggagga tctgggcagcctgtccatagacctctgtccccaactggcaagtcaggaaactccagattaaggagccccaatgtggttga 20 25 aatgittigaaagtcccigccctticcagctcctaccgtctcagccctgggagtgiaaagtgctgcagatagttagtaag tetttgagcaaaactgagaaagccagcetgagcettgacatgggagaaaceteegceatacateteegaagaaaeggceg egtgtetcagggagaaateeagcagaaacaggacagtettgacatgtggageegtacgtg gcatgacaaagaaateeaggagaacteegcettgggageegtacgtg 30 gtggccgcagccttcccggccccacagccagcctggctccagctgggcaggagtgcagagctcagctggaggcgaggggg aagtgcccaggaggctgatgacatcactacccagcccttcaaagatgagctgttcccgccgccactccagctctggcttc tgggctccgaggaggggggacggtggtgacggtggggacatcaggctgccccgcagtaccaggagcgactgaagtg cccatgccgcttgctccggagaaggtgggtgccgggcaggggctgctccagccgcctcacctctgctgggaggacaaact 35 głcccagcacagagggagggagggagggcaggcagcggggagaagtttccctgtggtcgtggggagttgggaaaagttcc cttccttccggagggaggcagattcacaaactgcaggactgggcagggagcagacagtgagcaaacgccagcagggctgc tgtgaatttgtgtaaggattgagggacagttgcttttcagcatgggcccaggaatgccaaggagacatctatgcacgacc ttgggaaatgagttgatgtctccggtaaaacaccggagactaattcctgccctgcccaattttgcagggagcatggctgt 40 gaggatggggtgaactcacgcacagccaaggactccaaaatcacaacagcattactgttcttatttgctgccacacctga agttgttgccctggtttctttaatctattcagctagaactttgaaggacaatttcttgcattaataaaggttaagccct gaggggtccctgataacaacctggagaccaggattttatggctcccctcactgatggacaaggaggtctgtgccaaagaa gaatccaataagcacatattgaycacttyctycatatycaytattyaycactycayycaayaccaagataagctyttcgacyaga ccatctccatcttgaaggaactcaaagactcaagtgggaacgactgggcactgccaccaccagaaagctyttcgacyaga cggtcgagcagggtyctgtggggtgatatggacagcagagagagaccaagyttccagctcaaccaataactattgcac aaccacctyccctycctcagttcccttttatytaacatyaagtcytytggaggttaaaggcagtaaaagtc acttagaaaagcaaagggtgctacgtacatgtgaggcatcattacgcagacgtaactgggatatgtttactataaggaaa 50 agacactgaggtctagaaatagctccgtggagcagaatcagtattgggagccggtgggggtgtgaagcaccagtgtctgg atttggagagaaggccatgtcttcaaagtctgatttgtgatgaggcagaggaagatatttctaatcggtcttgcccagag gatcacagtgctgagaccccccaccaccagccggtacctgggaaggggagagtgcaggcctgctcagggactgttcctg tctcagcaaccaagggattgttcctgtcaatcaatggtttattggaaggtggcccagtatgagccctagaagagtgtgaa 55 tggagagctagaacctggagagctagaacctggagaactagaacctggagggctagaacctggagaggctagaaccaaga agggctagaacctggaggggctagaacctagagaagctaaaacctgagctagaagctggaggactagaacctggagggct gctagaacctggaagggctagaacctgtagagctagaacatggagagctagaacccggcaggctagaacctggcaagcta ccacccactctcctctgcctcagtaagtatctggaggaagaaaacaggtgaaagaagaagtaaaaaccatttagtattag tcattcagcaccagagcacgtgatggtctgagactctcttaggagcagagctctgccgcaatggccatgtggggatccacacctggtctgaggggcaactgagtctgcgggagaagagcgccctatgcatggtgtagatgcctgataagaacactcg tcctgtgaaagactcaatgagctgttatgttgtaaacaggaagcatttcacatccaaacgagaaaatcatgtaaacatgt gttaaatgctttttaaaatgaatgctttaagccgggtgcagtgcctcacatctgtaatcccagcactttggagccgagcg ggtggattgtgtgaggtcaggagttcgagaccaacctggccaacatggcaaaacctcactctctaccaaaaatacaaaaa ttagccaggcatggtggcaggcacctgtgatcccagctactcaggaggctgagacaggagaatcgcttgaacccgggagg tgcatcctttgcaagtgtccaaaccctgatcccagctgtgcttaggggttcctgcaaaccttttccaggtgttaattacc toccacttcatttcctgtttaccaactcagctttttgttttagtgtgtttgaattccctgaactgaccgttgtctgatct ccacctcccaactgaattaggggagctgggcttctggaaacccaggtgccgggtgttgcagagtggctgaaagctgggat cacacacttggacatgcatagaccacagctttccacacccttcctagacaggggtcacttggtatcctggagagagtgtg aagtcctggaatggaaagaggggggattaagcccacctctagccatgggactgagacaagtcaccaccaacccatctgc

cggtcaqagcaagggtcgggaatggaaggcccttgggaaaaaaaggccctttcaactaggggcacagaggaggccctgggc taggttcaaagtccctcaagaccctgtctccatcacagtgctccagtccagaccctcctctgagctccagaccctgctg gaccaaccagcctatggggtcgcatccccacctgcctggaattctccaaagaacctcccctttaacagttccagcctt taacagttccagtctaaacacatgacctttctcctctaaatcagcccccatctctgcctttgcaggagatggaagccat gacacetgectegecetgtecteaceeatecatgtecaateaagcactaggeatgteaggtttaceetetaaacteet ctggaatccagtctctcagtctccatcatcccaggtcgaagctaatgggctaactggtccttgcttccactctacccca tgcaccatcatcatccctccacctgtttagttctgctcaccctcagtgttctcatcaataatccactcccctcagggggg 10 tttgggaccccatgttctatgctctcacaggaccttttgcttgatttttcactgtacttaggtcagtttgcagttattaa gtgactgagcaatgtctggcttctccagtagactgtcagctcctagccattgtatacctagcaccgctgtgtgggagcac gtgacaaacgtccagtgagtcagggactcagcagtctccatttctccgccctgctggagaatgcgtgtatttggcaatcc aatğittetetecetggaagatatcaatgitticigicigitegigigigigigigigigigi 15 tcaaagggattcctcagttcactagttaggggaggtgggcagacaccctggagaactccctggaaagctcaactctcatg ccccggacaacagttgaaggaaccatggtgatgttaagcccaaagacaaaacctctcaggtgtccaagtccctgttggaa tcttgggagcagagggaatgttctgtggtctagaggaagaggggctcagggaggagaaagggcacattcctggttgttata tgtttctatctatcccagatgaacttggaagtgaagggaagagttaaacattaaagtaaatacccagtggatcagaca gcaatgtgccagattgccttggaaacaaaatatctccaacacatggctgacatttggtgggagatcagaacaccctaaag 20 agagaatttaaggggaggggggggggcctgagccagagtagaagcagaggatagggatatgttcttttggggacagca tttgcaagaaacaaggctgaggggtccactccaacctctccaccctgctgcaggtgctgcctatgatgaagatgagcaga tggccatctcagctggggccacagtgcactggacctatagtttccaattccgcactcagcaggcatctttctgatgatcc gatggcttctcagagccagggatgggccaggatccatccccttggctactgtcttgctgagaaatttataagcagcatct ggtgctatactttggtctctagtgagttagctcatgaaagatgatagactctccaagccagggtatgcaggaaatgggt tttctgtagctacagaaatggggttgagggttggaccaagggactacccaggggaagtcttaccttcagaggactctgga aaggaggctgcaagttttcatgggtcaagaattcagagccagtagagacagcttatctctgttccaagatgtcttggggc 25 cttggttggaagstcaaggctaggaaaccaggagccaccaaaaagggtaactuscusgagstcactttcaaggg cttggttggaagattcaaaggctaggaaaccaggagccaccaaaaagggtaactggggccagaggatccactttcaaggg gcaagttggttccccccatgtggctgcttgagtatcctcacatggcggctcacatccttccaagtaagcaatgcaaaagg ccaagaaagatgctgcaaagatgttatgacctagcctcagaaatcacacaccatccctgccaccattagtaagaagtcca 30 gcccacgtccaggagaagaggaagcagattcctccttttgaaatgaagaatatcaagtaattcggggggcatatgaaagc caccacacaccaccagggatctttttagagcatacttcttataccatcactgtagttccttaagactcaggggcaaagcct ttgtcctccttcttgtccggtcaaaatgcttcttatccttcaagacccagctctagagtcacctccaaccccttacccac 35 ggagtcaggcagggcaggggcgggtggtgtcttctttgtgttcttgcactcagggcagagctcagcacagagcagacgc aagcaaacggacttttcctgggaaatcccagaggtgatgatcagtaatctctcccgtgactcgtagttcagctcttcctc catgagcctgactatcagtggaccttccagaaagagccccttttccttctctcacccacagcacagggcactgggaaaaat gcccaatgagtcctgcctctgggttgtgctttggacttttcagtgtgtctcgcatccactcttcaacttgaatgttgcaa cagccatgaaaaaagaaatgcaaagcgattcaggatgagagcaataccctactccaaagaaggcaacatagaagctcaga gagatcaagcaatttgcccaagaccacacagctaggagtggaactcatggctgtccaagccccatgcctctgctgaaggt aatgittattgagcetagtgcagtgcgtggggcattttgcacattgtctctgatccctatgacaaccctgagaggtagtg gttttaactgccatgttacaggtgaggtcattgtggttcaaggacgttaagtaacttccccagcgtgacacggcttataa gtaaggcagccaggatgtgaacccagtaggactatctggctgcaaagtccccacccccctcgccatctgtatcctccaat cacttcagtgctttgctgcatagaaggtaacggaaatcacgatgccacagactgtccaggaagacagaaactaggcagat gggctggccatggtctccaagccagactggaatctccaggtctggaatgatatcatttttctcttttaataaattaactc 50 cctcccatcacggaagcttcaaggaggtcaagggtccaacacttgagattgttagtgctgttggtggatactggccaagg aaatatcccagtggagcctcgagatgaagaacatgaggcccccgtttagaaccaaggatcagagggggctctgtaagacc ttgtccttaacccctgtctccttctggaccagtttttgtccttcccttgtgaccgctgaggggtaacagcctctttccac 55 tttctttcagegeegaeatgeteaatgtcaeettgeaagggeeeaetettaaegggaeetttgeeeagageaaatgeeee caagtggagtggctgggctggctcaacaccatccagcccccttcctctgggtgctgttcgtgctggccaccctagagaa catctttgtcctcagcgtcttctgcctgcacaagagcagctgcacggtggcagagatctacctggggaacctggccgcag cagacctgatectggcctgcgggctgcccttctgggccatcaccatctccaacaacttcgactgctctttggggagacg ctctgccgcgtggtgaatgccattatctccatgaacctgtacagcagcatctgtttcctgatgctggtgagcatcgaccg ctacctggccctggtgaaaaccatgtccatgggccggatgcgcggtgcgctgggccaagctctacagcttggtgatct gcccctgagtgtcatcaccttctgcacgatgcagatcatgcaggtgctgcggaacaacgagatgcagaagttcaaggaga tccagacggagaggagggccacggtgctagtcctggttgtgctgctgctattcatcatctgctggtgcccttccagatc agcacetteetggataegetgcategeeteeggcatectetceagetgcaggacgagegeatcategatgtaatcacaca 65 gategecteetteatggeetacageaacagetgeeteaacceactggtgtacgtgategtgggeaagegetteegaaaga agtcttgggaggtgtaccagggagtgtgccagaaagggggctgcaggtcagaacccattcagatggagaactccatggg acactgcggacctccatctccgtggaacgccagattcacaaactgcaggactgggcagggagcagacagtgagcaaacgc cagcagggctgctgctgtgaatttgtgtaaggattgagggacagttgcttttcagcatgggcccaggaatgccaaggagacat 70 ctatgcacgaccttgggaaatgagttgatgtctccggtaaaacaccggagactaattcctgccctgcccaattttgcagg gagcatggctgtgaggatggggtgaactcacgcacagccaaggactccaaaatcacaacagcattactgttcttatttgc tgccacacctgagccagcctgctccttcccaggagtggagggcctgggggcagggagagggagtgactgagcttccctc ccgtgtgttctccgtccctgccccagcaagacaacttagatctccaggagaactgccatccagctttggtgcaatggctg agigcacaagigagitgitgcccigggittectitaatctaticagctagaactitgaaggacaatrictigcattaataa 75 aggttaagccctgaggggtccctgataacaacctggagaccaggattttatggctcccctcactgatggacaaggaggtc tgtgccaaagaagaatccaataagcacatattgagcacttgctgtatatgcagtattgagcactgtaggcaagagggaag aaagagaaggagccatctccatcttgaaggaactcaaagactcaagtgggaactgggcactgccaccaccagaaagc tgttcgatgagacggtcgagcagggtgctgtgggtgatatggacagcagaagggggagccaggttccagctcaccaatac tattgcacaccacctgtcctgcctctgatcctatcacaacctgagagtagtttttactccatttacaggtgaggtcattg aatacgatgccacagactgtccaggaagacagaaactaggcagatgggccatggtctccaagccagactggaatct

ccagqtctqqaatqatatcatttttctcttttaataaattaactcaccacacacaggctttgagaggctcaaaggtgac caactcccttgggagggccccggttgataaggaaggaatgtgaatcctcccatcacggaagcttcaaggaggtcaagggt ccaacacttgagattgttagtgctgttggtggatactgcagaatatccagtggagcctcagatgaagaacatgaggccc qtttaqatccaaqqatcaqaqqqqqctctqtaaqacccaqqqqqqtcaqqtcaqqtqcactqqaqcqcqqqqqctqcaqaaaacaqc ctgagetccacctoggettetecttgecetggetggttgtccttaaccetgtetecttetggaccagtttttgtcctte ccttgtgacctgaggggtaacagcctcttttccactttcttcagcgccgacatgctcaatgtcaccttgcaagggccca ctcttaacgggacctttgcccagagcaaatgccccaagtggagtggctgggctcaacaccatccagcccccttc ggtggcagagatctacctggggaacctggccgcagcagacctgatcctggcctgcgggctgcccttctgggccatcacca tctccaacaacttcgactggctctttggggagacgctctgccgcgtggtgaatgccattatctccatgaacctgtacagc agcatctgtttcctgatgctggtgagcatcgaccgctacctggccctggtgaaaaccatgtccatgggccggatgcgcg cgtgcgctgggccaagctctacagcttggtgatctgggggtgtacgctgctcctgagctcacccatgctggtgttccgga ccatgaaggagtacagcgatgagggccacaacgtcaccgcttgtgtcatcagctacccatccctcatctgggaagtgttc accaacatgeteetgaatgtegtgggetteetgetgeeeetgagtgteateaeettetgeacgatgeagateatgeaggt gctgcggaacaacgagatgcagaagttcaaggagatccagacggagagggccacggtgctagtcctggttgtgctgc tgctattcatcatctgctggctgcccttccagatcagcaccttcctggatacgctgcatcgcctcggcatcctctccagc tgccaggacgagcgcatcatcgatgtaatcacacagatcgcctccttcatggcctacagcaacagctgcctcaacccact ggtgtacgtgatcgtgggcaagcgcttccgaaagaagtcttgggaggtgtaccaggaagtgtgccagaaagggggctgca ggtcagaacccattcagatggagaactccatgggcacactgcggacctccatctccgtggaacgccagattcacaaactg 20 caggactgggcagggagcagacagtgagcaaacgccagcagggctgctgtgaatttgtgtaaggattgagggacagttgc ttttcagcatgggcccaggaatgccaaggagacatctatgcacgaccttgggaaatgagtgttgatgtctccggtaaaac gcctgggggagggagggagtgactgagcttccctcccgtgtgttctccgtccctgccccagcaagacaacttagatctc caggagaactgccatccacgtttggtgcaatggctgagtgcacaagtgagttgttgccctgggtttctttaatctatcag atgcccccaagtggagtggctgggctggctcaacaccatccagcccccttcctctgggtgctgttcgtgctggccaccc tagagaacatetttgteeteagegtettetgeetgeacaagageagetgeacggtggeagagatetacetggggaacetg gccgcagcagacctgatcctggcctgcgggctgcccttctgggccatcaccatctccaacaacttcgactggctctttgg ggagacgctctgccgcgtggtgaatgccattatetccatgaacctgtacagcagcatctgtttcctgatgctggtgagca gtgatetgggggtgtacgctgctcctgagctcacccatgctggtgttccggaccatgaaggagtacagcgatgagggca caacgtcaccgcttgtgtcatcagctacccatccctcatctgggaagtgttcaccaacatgctcctgaatgtcgtgggct tectgetgecectgagtgteatcacettetgeacgatgcagateatgcaggtgetgeggaacaacgagatgcagaagtte ccagatcagcaccttcctggatacgctgcatcgcctcggcatcctctccagctgccaggacgagcgcatcatcgatgtaa tcacacagatcgcctccttcatggcctacagcaacagctgcctcaacccactggtgtacgtgatcgtgggcaagcgcttc cgaaagaagtcttgggaggtgtaccagggagtgtgccagaaagggggctgcaggtcagaacccattcagatggagaactc catgggcacactgcggacctccatctccgtggaacgccagattcacaaactgcaggactgggcagggagcagacagtgag caaacgccagcagggctgctgtgaatttgtgtaaggattgagggacagttgcttatgttctctccctggaagatatcaat gtttctgtctgttcgtgaggactccgtgcccaccacggcctctttcagcgccgacatgctcaatgtcaccttgcaagggc cggcgtgcgctgggccaagctctacagcttggtgatctggcgtgtacccgctcctgagctcaccatgctggtgttcc ggaccatgaaggagtacagcgatgagggccacaacgtcaccgcttgtgtcatcagctacccatccctcatctgggaagtg ttcaccaacatgctcctgaatgtcgtgggcttcctgctgcccctgagtgtcatcaccttctgcacgatgcagatcatgca ggtgctgcggaacaacgagatgcagaagttcaaggagatccagacggagaggggccacggtgctagtcctggttgtgc tgctgctattcatcatctgctggctgcccttccagatcagcaccttcctggatacgcttgcatcgcctcggcatcctctcc 55 agetgecaggacgagegcatcategatgtaatcacacagategectecttcatggcctacagcaacagetgcctcaaccc actggtgtacgtgatcgtgggcaagcgcttccgaaagagtcttgggaggtgtaccaggagtgtgccagaaagggggct gcaggtcagaacccattcagatggagaactccatgggcacactgcggacctccatctccgtggaacgccagattcacaaa ctgcaggactgggcagggagcagacagtgagcaaacgccagcagggctgctgtgaatttgtgtaaggattgagggacagt tgcttgccttcaaagatgagctgttcccgccgccactccagctctggcttctggctccgaggaggggtggggacggtg 60 gggagaagtttccctgtggtcgtggggagttgcccttcaaagatgagctgttcccgccgccactccagctctggcttctg ggetecgaggaggggtggggaeggtggtgaeggtggggaeateaggetgeeeegeagtaceagggagegaetgaagtgee catgccgcttgctccggagaaaggtgggtgccgggcaggggtgctccagccgcctcacctctgctgggaggacaaactgt cccagcacagagggagggagggaggcaggcagcggggagaagtttccctgtggtcgtggggagttgagctcttcaatat tttagtgaaagctatagatgaggctccataggggataaagcacagacaaccttttcagagggcttgtggactctgggca gcctgtccatagacctctgtccccaactggcaagtcaggaaactccagattaaggagcccaaatgtggttgaacagccag aaqaaatcccaggactccgcctgcccacctggccaccctctgtttacaccttccgcgtaaacgcccactgtttacatcca tqqqqcttcccaggccactttgtggtcagccgggaggacgtttttgccgtcccacgactccaacgggcagccgggccta cgcaaacatggaaatettecaagageeteeetggeeeecagggeteagagggtggeagageggagagagegaaggtggeege ageetteeeggeeeeaageeageetggeteeagetgggeaggagtgeagageteagetggaggggaaggggaagtgee aggaggetgatgacatcactacccagccettcaaagatgagetgttcccgccgccactccagetctggcttctgggetcc gaggagggtgggacggtggtgacggtggggacatcaggctgccccgcagtaccagggagcgactgaagtgcccatgcc gcttgctccggagaaggtgggtgccgggcaggggctgctccagccgcctcacctctgctgggaggacaaactgtcccagc

acagaggaggaggaggaggcaggcaggggagaagtttccctgtggtcgtggggagtt(SEQ ID NO:12387)
cccggccccgccbcgbbcc (SEQ ID NO:12414)
cccggcccgccbcg (SEQ ID NO:12415)
cccggccccgccbcg (SEQ ID NO:12431)
5 tccbtgcbcgggcc (SEQ ID NO:12434)
tbbtcctbbcbctgg (SEQ ID NO:12447)
gtgcbccbctcbcctg (SEQ ID NO:12452)
gggttbbbgttgbtctgg (SEQ ID NO:12461)
cctgggtgggctt (SEQ ID NO:12467)
l0 cccavgvccvcccaggc (SEQ ID NO:12472)
agcccacccaggc (SEQ ID NO:12473)
bcctgggtgggctb (SEQ ID NO:12474)
ggtgggcttggg (SEQ ID NO:12475)
ccbbggtgggcttggg (SEQ ID NO:12476)
ctgggtgggttggg (SEQ ID NO:12477)
ccbggtgggttggg (SEQ ID NO:12479)
ggtgggcttgg (SEQ ID NO:12479)
ccbggtgggcttgg (SEQ ID NO:12479)
cctgbgtgbgcttggg (SEQ ID NO:12479)
cctgbgtgbgcttggg (SEQ ID NO:12480)

20 <u>Table</u>: Exemplary Genes and oligos

HUMAN GENES	SEQ ID NOS. Nucleic acid (amino acid)	SEQ ID NOS. of oligos (No. of Oligonucleotide Fragments)	GENEBANK ACCESSION NOS. For the Genes
H2A histone family, member N	3285	3286-3364 (79)	Al095013
tubuiln, beta polypeptide ELL gene (11-19 lysine-rich	3365	3366-3405 (40)	Al672565
leukemia gene)	3406 ·	3407-3509 (103)	Al652901
7-dehydrocholesterol reductase karyopherin alpha 2 (RAG	3510	3511-3592 (82)	Al652764
cohort 1, importin alpha 1)	3593	3594-3680 (87)	AA489087
ADP-ribosylation factor-like 7	3681	3682-3709 (28)	AA281534
EST	3710	3711-3740 (30)	Al038433
EST	3741	3742-3808 (67)	Al122689
EST	3809	3810-3862 (53)	Al092623
ESTs	3863	3864-3936 (73)	Al095492
ESTs	3937	3938-3990 (53)	Al138216
ESTs	3991	3992-4059 (68)	Al128305
ESTs	4060	4061-4123 (63)	Al125228
ESTs	4124	4125-4181 (57)	Al041482
ESTs Homo sapiens mRNA; cDNA DKFZp434A1716 (from clone	4182	4183-4258 (76)	Al051839
DKFZp434A1716)	4259	4260-4328 (69)	Al092429
ESTs	4329	4330-4362 (33)	A1096522
ESTs	4363	4364-4421 (58)	Al122807
ESTs	4422	4423-4483 (61)	Al041212
EST	4484	4485-4544 (60)	Al125651
enolase 1, (alpha)	4545	4546-4629 (84)	Al001174
EST	4630	4631-4683 (53)	Al024215
EST Homo sapiens mRNA; cDNA DKFZp564H0764 (from clone	4684 4730	4685-4729 (45) 4731-4788 (58)	Al034360 AA465687
DKFZp564H0764) Homo sapiens mRNA for KIAA1363 protein, partial cds	4789	4790-4853 (64)	Al085559
potassium voltage-gated channel, shaker-related subfamily, beta member 2 ER-associated DNAJ; ER- associated Hsp40 co-	4854	4855-4920 (66)	Al654215
chaperone; hDj9; ERj3 ESTs, Weakly similar to p38	4921	4922-4948 (27)	AA505075
protein [H.sapiens]	4949	4950-5008 (59)	AA906703
CGI-142	5009	5010-5084 (75)	Al369870

ESTs	5085	5086-5138 (53)	AA463249
Homo sapiens clone 25058 mRNA sequence	5139	5140-5165 (26)	R38894
ESTs	5166	5167-5203 (37)	R49144
squamous cell carcinoma antigen 1	5204	5205-5290 (86)	AA398883
ESTs	5291	5292-5349 (58)	AA425700
myosin X	9 (10)	1628-2922 (1295)	NM_012334, AA187977
ESTs	5350	5351-5395 (45)	AA459692
epithelial protein lost in neoplasm beta	5396	5397-5453 (57)	AA487557
CD44 antigen (homing function and Indian blood group system) coagulation factor III	5454	5455-5509 (55)	T69168
(thromboplastin, tissue factor)	5510	5511-5588 (78)	Al313387
ESTs	5589	5590-5646 (57)	AA909635
adducin 1 (alpha)	5647	5648-5705 (58)	R00103
5' nucleotidase (CD73)	5706	5707-5767 (61)	N35316
ESTs, Moderately similar to	E700	E700 E000 (EE)	AA293300
semaphorin C [M.musculus]	5768	5769-5823 (55)	AA293300 AA278764
ESTs	5824	5825-5892 (68)	
ESTs calmodulin 2 (phosphorylase	5893	5894-5926 (33)	AA678160
kinase, delta)	11 (12)	2923-3107 (185)	NM_001743, AA663941
ESTs	5927	5928-5996 (69)	R42770
high-mobility group (nonhistone chromosomal) protein 17	5997	5998-6095 (98)	H93087
chloride intracellular channel 1	6096	6097-6177 (81)	AA486518
ubiquitin carrier protein	6178	6179-6208 (30)	AA464729
transglutaminase 2 (C			
polypeptide, protein-glutamine- gamma-glutamyltransferase)	1 (2)	13-552 (540)	M55153, R97066
tubulin, alpha 1 (testis specific)	6209	6210-6270 (61)	AA180912
sparc/osteonectin, cwcv and kazal-like domains proteoglycan		, ,	A A 426442
(testican) proteasome (prosome,	6271	6272-6343 (72)	AA436142
macropain) 26S subunit, non-	6344	6345-6413 (69)	H05893
ATPase, 2	6414	6415-6485 (71)	H37989
tubulin, beta polypeptide filamin B, beta (actin-binding			
protein-278)	6486	6487-6551 (65)	AA486238
stanniocalcin low density lipoprotein receptor	5 (6)	677-1323 (647)	NM_003155, AA085318
(familial hypercholesterolemia) plectin 1, intermediate filament	6552	6553-6609 (57)	AA504461
binding protein, 500kD	6610	6611-6683 (73)	AA448400
S100 calcium-binding protein A2	3 (4)	553-676 (124)	BC002829, AA458884
immediate early response 3	6684	6685-6735 (51)	AA480815
calpain, large polypeptide L2 pleckstrin homology-like domain,	6736	6737-6831 (95)	AA102454
family A, member 1	6832	6833-6900 (68)	AA258396
melanoma adhesion molecule	6901	6902-6979 (78)	AA497002
CD44 antigen (homing function and Indian blood group system)	6980	6981-7069 (89)	AA282906
programmed cell death 5	7070	7071-7159 (89)	AA156940
hexokinase 1	7160	7161-7209 (49)	AA485272
vascular endothelial growth factor	72 10	7211-7290 (80)	R19956
integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)	7291	7292-7396 (105)	AA463610
calumenin	7397	7398-7471 (74)	R78585
syntaxin 11	7472	7473-7526 (54)	R33851
diphtheria toxin receptor	7527	7528-7578 (51)	R14663
SEPTIME CONTINUES	1021	651	

(heparin-binding epidermal growth factor-like growth factor) Fn14 for type I transmenmbrane protein	7579	7580-7632 (53)	R33355
Nef-associated factor 1 high-mobility group (nonhistone	7633	7634-7694 (61)	T64626
chromosomal) protein isoforms I and Y	7695	7696-7753 (58)	AA448261
catechol-O-methyltransferase	7754	7755-7796 (42)	R44202
C-terminal binding protein 1	7797	7798-7864 (67)	W81570
collagen, type XVII, alpha 1	7865	7866-7932 (67)	AA128561
ESTs	7933	7934-8029 (96)	N58473
farnesyl-diphosphate farnesyltransferase 1	8030	8031-8107 (77)	AA679352
RNA helicase-related protein	8108	8109-8147 (39)	N55459
Interferon stimulated gene (20kD)	8148	8149-8230 (82)	AA150500
steroid-5-alpha-reductase, alpha polypeptide 1 (3-oxo-5 alpha- steroid delta 4-dehydrogenase	0140	0145-0230 (02)	A-130300
alpha 1)	8231	8232-8283 (52)	H16833
prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase) laminin, alpha 3 (niceln (150kD), kalinin (165kD), BM600 (150kD),	8284	8285-8345 (61)	AA644211
epilegrin)	8346	8347-8440 (94)	AA001432
collagen, type XVII, alpha 1	8441	8442-8494 (53)	H87536
keratin 18	8495	8496-8601 (106)	AA664179
heparan sulfate (glucosamine) 3-0-sulfotransferase 1	8602	8603-8652 (50)	H86812
tubulin, alpha 2 adenylyl cyclase-associated	8653	8654-8765 (112)	AA626698
protein	8766	8767-8833 (67)	R37953
forkhead box D1	8834	8835-8897 (63)	AA069372
cathepsin C ESTs, Highly similar to	7 (8)	1324-1627 (304)	NM_001814, AA644088
AF151802_1 CGI-44 protein [H.sapiens] ribonucleotide reductase M2	8898	8899-8985 (87)	T74688
polypeptide	8986	8987-9056 (70)	AA187351
laminin, gamma 2 (nicein (100kD), kalinin (105kD), BM600 (100kD), Herlitz junctional			
epidermolysis bullosa))	9057	9058-9133 (76)	AA677534
Homo sapiens mRNA; cDNA DKFZp586P1622 (from clone			
DKFZp586P1622)	9134	9135-9221 (87)	T59658
ESTs, Weakly similar to	0222	0222 0290 (67)	A A 29424E
/prediction	9222 9290	9223-9289 (67) 9291-9369 (79)	AA284245 H05914
lactate dehydrogenase A Total	∌∠äU	3231-3303(13)	F1000 14
98 genes		9369 (9277)	

(GENBANK ACCESSION NO. M55153)

15 GCTCTCGGAAATGGACCATGCTAGCCCATCTCAGCCTCTGAGCCTGTGGGTCCCCACTCACCCCCTTTTGCTGTGAGGAATGGT
CTGTGCCAGAAACAGTGGGAGCCCCTTGACCTGGTGCTCTGAGCCTGTGGGTCACAGAAACAGTGCTACATTCCCTCTCTCCCAG
ATGCCCTTTGGAAAGCCATTGACCACCACCATATTGTTTGATCTACTTCATAGCTCCTTGGAGCAGGCAAAAAAAGGGACAGCATGC
CCTTGGCTGGATCAGGAATCCAGCTCCCTAGACTGCATCCCGTACCTCTTCCCATGACTGCACCCAGCTCCAGGGGCCCTTGGGACA
CCCAGAGCTGGGTGGGGACAGTGATAGGCCCAAGGTCCCTCCACATCCCAGCAGCCCAAGCTTAATAGCCCTCCCCCTCAACCTC

25 TCAGAGGAGTGATTGAACCTGCTCATCTCCAAGGATCCTCCACTCCATGTTTGCAATACACAATTCC

(SEQ ID NO: 1)

Amino acid sequence for G-protein G-alpha H (GENBANK ACCESSION No. M55153)

MetAlaGiuGluLcuValLcuGluArgCysAspLcuGluLcuGluThrAsnGlyArgAspHisHisThrAlaAspLcuCysArgGluLysLcuValValArgArgGlyGlnProPhcT

rpLeuThrLeuHisPheGluGlyArgAsnTyrGlnAlaSerValAspSerLeuThrPheSerValValThrGlyProAlaProSerGlnGluAlaGlyThrLysAlaArgPheProLeuArg

AspAlaValGluGluGlyAspTrpThrAlaThrValValAspGlnGlnAspCysThrLeuSerLeuGlnLeuThrThrProAlaAsnAlaProIleGlyLeuTyrArgLeuSerLeuGlu

AlaSerThrGlyTyrGlnGlySerSerPheValLeuGlyHisPheIleLeuLeuPheAsnAlaTrpCysProAlaAspAlaValTyrLeuAspSerGluGluGluArgGlnGluTyrValLe

uThrGlnGlnGlyPheIleTyrGlnGlySerAlaLysPheileLysAsnlieProTrpAsnPheGlyGlnPheGlnAspGlyIleLeuAspIleCysLeuIleLeuLeuAspValAsnProLys

PheLeuLysAsnAlaGlyArgAspCysSerArgArgSerSerProValTyrValGlyArgValGlySerGlyMetValAsnCysAsnAspAspGlnGlyValLeuLeuGlyArgTrpAs

pAsnAsnTyrGlyAspGlyValSerProMetSerTrpIleGlySerValAsplleLeuArgArgTrpLysAsnHisGlyCysGlnArgValLysTyrGlyGlnCysTrpValPheAlaAla

- 35 ValAlaCysThrValLeuArgCysLeuGlyIleProThrArgValValThrAsnTyrAsnSerAlaHisAspGhAsnSerAsnLeuLeuIleGluTyrPheArgAsnGhPheGlyGlull eGlnGlyAspLysSerGluMetIleTrpAsnPheHisCysTrpValGluSerTrpMetThrArgProAspLeuGlnProGlyTyrGluGlyTrpGlnAlaLeuAspProThrProGlnGlu LysSerGluGlyThrTyrCysCysGlyProValProValArgAlaIleLysGluGlyAspLeuSerThrLysTyrAspAlaProPheValPheAlaGluValAsnAlaAspValValAspTr pIleGlnGlnAspAspGlySerValHisLysSerIleAsnArgSerLeuIleValGlyLeuLysIleSerThrLysSerValGlyArgAspGluArgGluAspIleThrHisThrTyrLysTyrPr oGluGlySerSerGluGluArgGluAlaPheThrArgAlaAsnHisLeuAsnLysLeuAlaGluLysGluGluThrGlyMetAlaMetArgIleArgValGlyGlnSerMetAsnMetGl ySerAspPheAspValPheAlaHisIleThrAsnAsnThrAlaGluGluTyrValCysArgLeuLeuLeuCysAlaArgThrValSerTyrAsnGlyIleLeuGlyProGluCysGlyThr
- 40 ySerAspPheAspValPheAlaHisileThrAsnAsnThrAlaGluGluTyrValCysArgLeuLeuLcysAlaArgThrValSer1yrAsnGiylleLeuGiyProGluLysGiy1hr LysTyrLeuLeuAsnLeuThrLeuGluProPheSerGluLysSerValProLeuGysIleLeuTyrGluLysTyrArgAspCysLeuThrGluSerAsnLeuIleLysValArgAlaLeuLe uValGluProValIleAsnSerTyrLeuLeuAlaGluArgAspLeuTyrLeuGluAsnProGluIleLysIleArgIleLeuGjyGluProLysGlnLysArgLysLeuValAlaGluValSer LeuGlnAsnProLeuProValAlaLeuGluGlyCysThrPheThrValGluGlyAlaGlyLeuThrGluGluGlnLysThrValGluIleProAspProValGluAlaGlyGluGluValLy sValArgMetAspLeuValProLeuHisMetGlyLeuHisLysLeuValValAsnPheGluSerAspLysLeuLysAlaValLysGlyPheArgAsnVallleIleGlyProAla (SEQ

45 ID NO: 2).

(GENBANK ACCESSION NO. BC002829)

Amino acid sequence for \$100A2 (GENBANK ACCESSION No. BC002829)

MetMetCysSerSerLeuGluGlnAlaLeuAlaValLeuValThrThrPheHisLysTyrSerCysGlnGluGlyAspLysPheLysLeuSerLysGlyGluMetLysGluLeuLeuHis LysGluLeuProSerPheValGlyGluLysValAspGluGluGlyLeuLysLysLeuMetGlySerLeuAspGluAsnSerAspGlnGlnValAspPheGlnGluTyrAlaValPheLe uAlaLeuIleThrValMetCysAsnAspPhePheGlnGlyCysProAspArgPro (SEQ ID NO: 4).

(GENBANK ACCESSION NO. NM_003155)

GTCCGAAGCCTGCTGGAATGTGATGAAGACACAGTCAGCACAATCAGAGACAGCCTGATGGAGAAAATTGGGCCTAACATGGCCA GCCTCTTCCACATCCTGCAGACAGACCACTGTGCCCAAACACACCCCACGAGCTGACTTCAACAGGAGACGCACCAATGAGCCGCAG AGGGAGAGGTTATTCACAACCTCACCAAACTAGTATCATTTTAGGGGTGTTGACACCAATTTTGAGTGTACTGTGCCTGGTTTGA TTTTTTTAAAGTAGTTCCTATTTTCTATCCCCCTTAAAGAAAATTGCATGAAACTAGGCTTCTGTAATCAATATCCCAACATTCTGCA ATGGCAGCATTCCCACCAACAACATCCATGTGATCATTCTGCCTCTCCTCAGGAGAAAGTACCCTCTTTTACCAACTTCCTCTGCCAT AATTCGTGTTATGAATCTGTGCTGGCCATGGACGAATATGAATGTCACATTTGAATTCTTGATCTCTAATGAGCTAGTGTCTTATGGT CTTGATCCTCCAATGTCTAATTTTCTTTCCGACACATTTACCAAATTGCTTGAGCCTGGCTGTCCAACCAGACTTTGAGCCTGCATCT TCTTGCATCTAATGAAAAACAAAAAGCTAACATCTTTACGTACTGTAACTGCTCAGAGCTTTAAAAGTATCTTTAACAATTGTCTTA AAACCAGAGAATCTTAAGGTCTAACTGTGGAATATAAATAGCTGAAAACTAATGTACTGTACATAAATTCCAGAGGACTCTGCTTA AACAAAGCAGTATATAATAACTTTATTGCATATAGATTTTAGTTTTGTAACTTAGCTTTATTTTTCTTTTCCTGGGAATGGAATAACTA TCTCACTTCCAGATATCCACATAAATGCTCCTTGTGGCCTTTTTTATAACTAAGGGGGGTAGAAGTAGTTTTAATTCAACATCAAAACT TAAGATGGGCCTGTATGAGACAGGAAAAACCAACAGGTTTATCTGAAGGACCCCAGGTAAGATGTTAATCTCCCAGCCCACCTCAA15 CCCAGAGGCTACTCTTGACTTAGACCTATACTGAAAGATCTCTGTCACATCCAACTGGAAAATTCCAGGAACCAAAAAAGAGCATCCCT ATGGGCTTGGACCACTTACAGTGTGATAAGGCCTACTATACATTAGGAAGTGGTAGTTCTTTACTCGTCCCCTTTCATCGGTGCCTGG GACTTGGGGCTGAGAGAGTATAAATAACCCTGGGCTGTCCAGCCTTAATAGACTTCTCTTACATTTTCGTCCTGTAGCACGCTGCCT 20 CAGTAGTTTCTCAGGGTCACTGTCCTTGAACCCAACAGTCCCTTATGAGCGTCACTGCCCACCAAAGGTCAATGTCAAGAGAGGAAGAGAGGAGGAGGGGTAGGACTGCAGGGGCCACTCCAAACTCGCTTAGGTAGAAACTATTGGTGCTCGACTCTCACTAGGCTAAAC TCAAGATTTGACCAAATCGAGTGATAGGGATCCTGGTGGGAGGAGAGAGGGCACATCTCCAGAAAAATGAAAAGCAATACAACTTT 25 ACATTGCTGCCTTTGTCCCCACACAGCCTCTAAGCGTGCTGACATCAGATTGTTAAGGGCATTTTTATACTCAGAACTGTCCCATCCC 30 ATTCCCCCTTAAACTTCCAAAGCTTCGTCTTGTGTTTGCTGCAGAGTGATTCGGGGGGCTGACCTAGACCAGTTTGCATGATTCTTCT TATGAAACATATCATGGTAATGACAGATGCAAGTTATTTTATTTGCTTATTTTTTATAAATTAAAGATGCCATAGCATAATATGAAGCC

Amino acid sequence for Stanniocalcin 1 (GENBANK ACCESSION No. NM_003155)

MetLeuGlnasnSeralaValLeuLeuValLeuValIleSeralaSeralaThrHisGluAlaGluGlnasnAspSerValSerProArgLysSera
40 rgValalaAlaGlnasnSeralaGluValValArgCysLeuAsnSeralaLeuGlnValGlyCysGlyAlaPheAlaCysLeuGluAsnSerThrCy
sAspThrAspGlyMetTyrAspIleCysLysSerPheLeuTyrSeralaAlaLysPheAspThrGlnGlyLysAlaPheValLysGluSerLeuLys
CysIleAlaAsnGlyValThrSerLysValPheLeuAlaIleArgArgCysSerThrPheGlnArgMetIleAlaGluValGlnGluGluCysTyr6
erLysLeuAsnValCysSerIleAlaLysArgAsnProGluAlaIleThrGluValValGlnLeuProAsnHisPheSerAsnArgTyrTyrAsnAr
gLeuValArgSerLeuLeuGluCysAspGluAspThrValSerThrIleArgAspSerLeuMetGluLysIleGlyProAsnMetAlaSerLeuPhe
45 HisIleLeuGlnThrAspHisCysAlaGlnThrHisProArgAlaAspPheAsnArgArgArgThrAsnGluProGlnLysLeuLysValLeuLeuA
rqAsnLeuArgGlyGluGluAspSerProSerHisIleLysArgThrSerHisGluSerAla (SEQ ID NO: 6).

(GENBANK ACCESSION NO. NM_001814)

ACGGCGCGTGCGCTGCGACACCCCCAACTGCACCTATCTTGACCTGCTGGGCACCTGGGTCTTCCAGGTGGGCTCCAGCGGTT ${\tt CCCAGCGGATGTCAACTGCTCGGTTATGGGACCACAAGAAAAAAAGTAGTGGTGTACCTTCAGAAGCTGGATACAGCATATGAT}$ GACCTTGGCAATTCTGGCCATTTCACCATCATTTACAACCAAGGCTTTGAGATTGTTTGAATGACTACAAGTGGTTTGCCTTTTTTA GGCTTGTTTCACCGGAAAGAAGGTGGGAACTGCCTCTGAGAATGTGTATGTCAACACACCACCTTAAGAATTCTCAGGAAAAGT ATTCTAATAGGCTCTACAAGTATGATCACAACTTTGTGAAAGCTATCAATGCCATTCAGAAGTCTTGGACTGCAACTACATAGG 55 AATATGAGACTCTTACCCTGGGAGATATGATTAGGAGAAGTGGTGGCCACAGTCGAAAAATCCCAAGGCCCAAACCTGCACCACTG ACTGCTGAAATACAGCAAAAGATTITGCATITGCCAACATCITGGGACTGGAGAAATGTTCATGGTATCAATTITGTCAGTCCTGTT CGAAACCAAGCATCCTGTGGCAGCTGCTACTCATTTGCTTCTATGGGTATGCTAGAAGCGAGAATCCGTATACTAACCAACAATTCT CAGACCCCAATCCTAAGCCCTCAGGAGGTTGTGTCTTGTAGCCAGTATGCTCAAGGCTGTGAAGGCGGCTTCCCATACCTTATTGCA CTGCTTTCGTTACTCCTCTGAGTACCACTATGTAGGAGGTTTCTATGGAGGCTGCAATGAAGCCCTGATGAAGCTTGAGTTGGTC CATCATGGCCCATGGCAGTTGCTTTTGAAGTATATGATGACTTCCTCCACTACAAAAAGGGGATCTACCACCACCACCACTGGTCTAAGA TTGTTAAAAACAGCTGGGGCACCGGCTGGGGTGAGAATGGCTACTTCCGGATCCGCAGAGGAACTGATGAGTGTGCAATTGAGAGC ATAGCAGTGGCAGCCACACCAATTCCTAAATTGTAGGGTATGCCTTCCAGTATTTCATAATGATCTGCATCAGTTGTAAAGGGGAAT TGGTATATTCACAGACTGTAGACTTTCAGCAGCAATCTCAGAAGCTTACAAATAGATTTCCATGAAGATATTTGTCTTCAGAATTAA AACTGCCCTTAATTTTAATATACCTTTCAATCGGCCACTGGCCATTTTTTTCTAAGTATTCAATTAAGTGGGAATTTTCTGGAAGATG GTCAGCTATGAAGTAATAGAGTTTGCTTAATCATTTGTAATTCAAACATGCTATATTTTTTAAAAATCAATGTGAAAAACATAGACTTAT TTTTAAATTGTACCAATCACAAGAAAATAATGGCAATAATTATCAAAACTTTTAAAATAGATGCTCATATTTTTAAAATAAAGTTTT

AAAAATAACTGC 70 (SEQ ID NO: 7)

Amino acid sequence for Cathepsin C

(GENBANK ACCESSION No. NM_001814)

MetGlyAlaGlyProSerLeuLeuLeuAlaAlaLeuLeuLeuLeuLeuSerGlyAspGlyAlaValArgCysAspThrProAlaAsnCysThrTyrL

euAspLeuLeuGlyThrTTpValPheGlnValGlySerSerGlySerGlnArgAspValAsnCysSerValMetGlyProGlnGluLysLysValValValTyrLeuGlnLysLeuAspThrAlaTyrAspAspLeuGlyAsnSerGlyHisPheThrIleIleTyrAsnGlnGlyPheGluIleValLeuAsn AspTyrLysTrpPheAlaPhePheLysTyrLysGluGluGlySerLysValThrThrTyrCysAsnGluThrMetThrGlyTrpValHisAspValL euGlyArgAsnTrpAlaCysPheThrGlyLysLysValGlyThrAlaSerGluAsnValTyrValAsnThrAlaHisLeuLysAsnSerGlnGluLy sTyrSerAsnArgLeuTyrLysTyrAspHisAsnPheValLysAlaIleAsnAlaIleGlnLysSerTrpThrAlaThrThrTyrMetGluTyrGlu ThrLeuGlyAspMetIleArgArgSerGlyGlyHisSerArgLysIleProArgProLysProAlaProLeuThrAlaGluIleGlnGlnLysIleLeuHisLeuProThrSerTrpAspTrpArgAsnValHisGlyIleAsnPheValSerProValArgAsnGlnAlaSerCysGlySerCysTy rSerPheAlaSerMetGlyMetLeuGluAlaArgIleArgIleLeuThrAsnSnSerGlnThrProIleLeuSerProGlnGluValValSerCys SerGlnTyrAlaGlnGlyCysGluGlyGlyPheProTyrLeuIleAlaGlyLysTyrAlaGlnAspPheGlyLeuValGluGluAlaCysPheProTyrThrGlyThrAspSerProCysLysMetLysGluAspCysPheArgTyrTyrSerSerGluTyrHisTyrValGlyGlyPheTyrGlyGlyCysAs nGluAlaLeuMetLysLeuGluLeuValHisHisGlyProMetAlaValAlaPheGluValTyrAspAspPheLeuHisTyrLysLysGlyIleTyr HisHisThrGlyLeuArgAspProPheAsnProPheGluLeuThrAsnHisAlaValLeuLeuValGlyTyrGlyThrAspSerAlaSerGlyMetA spTyrTrpIleValLysAsnSerTrpGlyThrGlyTrpGlyGluAsnGlyTyrPheArgIleArgArgGlyThrAspGluCysAlaIleGluSerIl eAlaValAlaAlaThrProIleProLysLeu (SEO ID NO: 8).

(GENBANK ACCESSION NO. NM_012334) GAGACAAAGGCTGCCGTCGGGACGGGCGAGTTAGGGACTTGGGTTTTGGCGAACAAAAGGTGAGAAGAAGAAAAAGGTGACAAGAAGGACCGGG ${\tt GACTTCCGCGAGTCGGAGCGCACTCGGCGAGTCCGGGACTGCGCTGGAACAATGGATAACTTCTTCACCGAGGGAACACGGGTCT}$ GGCTGAGAGAAAATGGCCAGCATTTTCCAAGTACTGTAAATTCCTGTGCAGAAGGCATCGTCGTCTTCCGGACAGACTATGGTCAG 20 GTCCTTGACAGAGCTCCATGGCGGCTCCATCATGTATAACTTATTCCAGCGGTATAAGAGAAATCAAATATATACCTACATCGGCTC CATCCTGGCCTCCGTGAACCCCTACCAGCCCATCGCCGGGCTGTACGAGCCTGCCACCATGGAGCAGTACAGCCGGCGCCACCTGG GCGAGCTGCCCCGCACATCTTCGCCATCGCCAACGAGTGCTACCGCTGCCTGTGGAAGCGCTACGACAACCAGTGCATCCTCATCA CCTTAAAGGAGAAGACATCCTGTGTTGAACGAGCTATTCTTGAAAGCAGCCCCATCATGGAAGCTTTCGGCAATGCGAAGACCGTG TACAACAACAACTCTAGTCGCTTTGGGAAGTTTGTTCAGCTGAACATCTGTCAGAAAGGAAATATTCAGGGCGGGAGAATTGTAGA TTATTATTAGAAAAAAACCGAGTAGTAAGGCAAAATCCCGGGGAAAGGAATTATCACATATTTTATGCACTGCTGGCAGGGCTGG AACATGAAGAAAGAAGAAGAATTTTATTTATCTACGCCAGAAAACTACCACTACTTGAATCAGTCTGGATGTGTAGAAGACAAGACA ATCAGTGACCAGGAATCCTTTAGGGAAGTTATTACGGCAATGGACGTGATGCAGTTCAGCAAGGAGGAAGTTCGGGAAGTGTCGAG ATCTGCGGAGTTACTTGGGCTGGACCCAACACACGCTCACAGATGCTTTGACCCAGAGATCAATGTTCCTCAGGGGAGAAGAGATCC TCACGCCTCTCAATGTTCAACAGGCAGTAGACAGCAGGGACTCCCTGGCCATGGCTCTGTATGCGTGCTGCTTTGAGTGGGTAATCA AGAAGATCAACAGCAGGATCAAAGGCAATGAGGACTTCAAGTCTATTGGCATCCTCGACATCTTTGGATTTGAAAACTTTTGAGGTT AATCACTTTGAACAGTTCAATATAAACTATGCAAACGAGAAACTTCAGGAGTACTTCAACAAGCATATTTTTTCTTTAGAACAACTA ATAACCACTTTTATGTGAAGCCCAGAGTTGCAGTTAACAATTTTGGAGTGAAGCACTATGCTGGAGAGAGGTGCAATATGATGTCCGAG GTATCTTGGAGAAGAACAGAGATACATTTCGAGATGACCTTCTCAATTTGCTAAGAGAAAGCCGATTTGACTTTATCTACGATCTTT TTGAACATGTTTCAAGCCGCAACAACCAGGATACCTTGAAATGTGGAAGCAAACATCGGCGGCCTACAGTCACAGTTCAAG GACCAGTTTGACCAGGCGGTTGTGCTGAACCAGCTGCGGTACTCAGGGATGCTGGAGACTGTGAGAATCCGCAAAGCTGGGTATGC GGTCCGAAGACCCTTTCAGGACTTTTACAAAAGGTATAAAGTGCTGATGAGGAATCTGGCTCTGCCTGAGGACGTCCGAGGGAAGT CAGAAACTGGAGAAGCGGAGGGAAGAGGAAGTGAGCCACGCGGCCATGTTGATTCGGGCCCATGTCTTGGGCTTCTTAGCACGAA AACAATACAGAAAGGTCCTTTATTGTGTGGTGATAATACAGAAGAATTACAGAGCATTCCTTCTGAGGAGGAGATTTTTTGCACCTGA AAAAGGCAGCCATAGTTTTCCAGAAGCAACTCAGAGGTCAGATTGCTCGGAGAGTTTACAGACAATTGCTGGCAGAGAAAAGGGA AGCGCATGAAGGAGCAGCAGGAGCTGTCGCTGACCGAGGCTTCCCTGCAGAAGCTGCAGGAGCGGCGGGACCAGGAGCTCCGCAG GCTGGAGGAGGAGCGTGCAGGGCCCCAGGAGTTCCTCGAGTCCCTCAATTTCGACGAGATCGACGAGTGTGTCCGGAATATCG CCCTACCCAGAGGAGGAGGTCGATGAGGGCTTCGAAGCCGACGACGACGCCTTCAAGGACTCCCCCAACCCCAGCGAGCACGCCC ACTCAGACCAGCGAACAAGTGGCATCCGGACCAGCGATGACTCTTCAGAGGAGGACCCATACATGAACGACACGGTGGTGCCCAC CAGCCCCAGTGCGGACACGCTGCTCGCCCCATCAGTGCAGGACTCCGGGAGCCTACACACTCCTCCAGCGGCGAGTCCA CCTACTGCATGCCCCAGAACGCTGGGGACTTGCCCTCCCCAGACGGCGACTACGACCAGGATGACTATGAGGACGGTGCC ATCACTTCCGGCAGCAGCGTGACCTTCTCCAACTCCTACGGCAGCCAGTGGTCCCCCGACTACCGCTGCTCTGTGGGGACCTACAAC AGCTCGGGTGCCTACCGGTTCAGCTCTGAGGGGGCGCAGTCCTCGTTTGAAGATAGTGAAGAGGACTTTGATTCCAGGTTTGATACA GATGATGAGCTTTCATACCGGCGTGACTCTGTGTACAGCTGTGTCACTCTGCCGTATTTCCACAGCTTTCTGTACATGAAAGGTGGCC 60 TGATGAACTCTTGGAAACGCCGCTGGTGCGTCCTCAAGGATGAAACCTTCTTGTGGTTCCGCTCCAAGCAGGAGGCCCTCAAGCAA GGCTGGCTCCACAAAAAAGGGGGGGGCTCCTCCACGCTGTCCAGGAGAAATTGGAAGAAGCGCTGGTTTGTCCTCCGCCAGTCCAA GCTGATGTACTTTGAAAACGACAGCGAGGAGAAGCTCAAGGGCACCGTAGAAGTGCGAACGGCAAAAGAGATCATAGATAACACC CAGCGTGCTGAGTCAGGTCCACGGTCCACGGACCAGGAGATCCAGGAGATGCATGATGAGCAGGCAAACCCACAGAATGCTGTG GGCACCTTGGATGTGGGGCTGATTGATTCTGTGTGTGCCCTCTGACAGCCCTGATAGACCCAACTCGTTTGTGATCATCACGGCCAAC CGGGTGCTGCACTGCAACGCCGACACGCCGGAGGAGATGCACCACTGGATAACCCTGCTGCAGAGGTCCAAAGGGGACACCAGAG TGGAGGGCCAGGAATTCATCGTGAGAGGATGGTTGCACAAAGAGGTGAAGAACAGTCCGAAGATGTCTTCACTGAAACTGAAGAA ACGGTGGTTTGTACTCACCCACAATTCCCTGGATTACTACAAGAGTTCAGAGAAGAACGCGCTCAAACTGGGGACCCTGGTCCTCA ACAGCCTCTGCTCTGTCGTCCCCCCAGATGAGAAGATATTCAAAGAGACAGCTACTGGAACGTCACCGTGTACGGGCGCAAGCAC 70 CGACACCCCCACCAGCAGCTGATTCAAGATATCAAGGAGAACTGCCTGAACTCGGATGTGGTGGAACAGATTTACAAGCGGAACC

CGATCCTTCGATACACCCATCACCCCTTGCACTCCCGCTCCTGCCCCTTCCGTATGGGGACATAAATCTCAACTTGCTCAAAGACA

TCCAGGGCATCCTACAGACAGGGCATGACCTGCGGACCTCTGCGGGACGAGCTGTACTGCCAGCTTATCAAACAGACCAACAAAGTG $\tt CCCCACCCGGCAGTGTGGGCAACCTGTACAGCTGGCAGATCCTGACATGCCTGAGCTGCACCTTCCTGCCGAGTCGAGGGATTCTCCTGCCGAGTCGAGGGATTCTCCTGCCGAGTCGAGGGATTCTCCTGCCGAGTCGAGGGATTCTCCTGCCGAGTCGAGGGATTCTCCTGCCGAGTCGAGGGATTCTCCTGCCGAGTCGAGGGATTCTCCTGACATGCCTGACATGCCTGAGCTGCACCTTCCTGCCGAGTCGAGGGATTCTCCTGACATGCCTGACATGCCTGAGCTGCACCTTCCTGCCGAGTCGAGGGATTCTCCTGACATGCCTGACATGCCTGAGCTGCACCTTCCTGCCGAGTCGAGGGATTCTCCTGACATGCCTGACATGCCTGAGCTGCACCTTCCTGCCGAGTCGAGGGATTCTCCTGACATGCCTGACATGCCTGAGCTGAGAGTCGAGGGATTCTCCTGACATGCACATGCCTGACATGCCTGACATGCACATGCACATGCACATGCACATGCACATGCCTGACATGCACATGACATGCACATGACATGCACATGCACATGCACATGCACATGCACATGCACATGCACATGCACATGACATGCACATGCACATGACATGCACATGCACATGCACATGCACATGCACATGCACATGCACATGACATATCATATGCACA$ AAGTATCTCAAGTTCCATCTGAAAAGGATACGGGAACAGTTTCCAGGAACCGAGATGGAAAAATACGCTCTCTTCACTTACGAATC AGCTGATGTCTTAGCCAAGTTTGAAAAGCTGGCTGCCACATCCGAGGTTGGGGACCTGCCATGGAAAATTCTACTTCAAACTTTACTG CTTCCTGGACACAGACAACGTGCCAAAAGACAGTGTGGAGTTTGCATTTATGTTTTGAACAGGCCCACGAAGCGGTTATCCATGGCC ACCATCCAGCCCCGGAAGAAAACCTCCAGGTTCTTGCTGCCCTGCGACTCCAGTATCTGCAGGGGGGATTATACTCTGCACGCTGCCA TCCCACCTCTCGAAGAGGTTTATTCCCTGCAGAGACTCAAGGCCCGCATCAGCCAGTCAACCAAAACCTTCACCCCTTGTGAACGGC 10 TGGAGAAGAGGCGGACGAGCTTCCTAGAGGGGACCCTGAGGCGGAGCTTCCGGACAGGATCCGTGGTCCGGCAGAAGGTCGAGGA GGAGCAGATGCTGGACATGTGGATTAAGGAAGAAGTCTCCTCTGCTCGAGCCAGTATCATTGACAAGTGGAGGAAATTTCAGGGAA TGAACCAGGAACAGGCCATGGCCAAGTACATGGCCTTGATCAAGGAGTGGCCTGGCTATGGCTCGACGCTGTTTGATGTGGAGTGC AAGGAAGGTGCTTCCCTCAGGAACTCTGGTTGGGTGTCAGCGCGGACGCCGTCTCCGTCTACAAGCGTGGAGAGGGAAGACCACT 15 GGAAGTCTTCCAGTATGAACACATCCTCTCTTTTGGGGCACCCCTGGCGAATACGTATAAGATCGTGGTCGATGAGAGGGAGCTGCT CTTTGAAACCAGTGAGGTGGTGGATGTGGCCAAGCTCATGAAAGCCTACATCAGCATGATCGTGAAGAAGCGCTACAGCACGACAC GCTCCGCCAGCAGCCAGGGCAGCTCCAGGTGAAGGCGGGACAGAGCCCACCTGTCTTTGCTACCTGAACGCACCACCCTCTGGCCT TCCGAGGATCCTTTTGCCTGCCGCCTTCATTGATCCTGTATTAAGCTGTCAACTTTAACAGTCTGCACAGTTTCCAAAGCTTTACTAC TCTTAGAGGACACATGCCTTAAAAAAGGAGGGAGGAACCACGCTGCCACCAAAGCAGCCGGAAGTGCCTTAACTTGTGGAACCA 20 ACACTAATCGACCGTAACTGTGCTACTGAAGGGAACTGCCTTTCCCCCTTCTGGGGGAGACTTAACAGAGCGTGGAAGGGGGGGCAT TCTCTGTCAATGATGCACTAACCTCCCAACCTGATTTCCCCGAATCTGAGGGAAGGTGAGGGAGTGGGAAGGGGGATGGAGAGGCTC AAGTGTACGTGCTTGCCTGTTCGTGCATGTGTTCATAAACTCAACACTTTAATCATGGTTTCATGAGCATTAAAAAGCAAAGGGAAA AAGGATGTOTAATGGTGTACACAGTCTGTATATTITAATAATGCAGAGCTATAGTCTCAATTGTTACTTTATAAGGTGGTTTTATTAA 25 CAAACCCAAATCCTGGATTTTCCTGTCTTTTGCTGTATTTTGAAAAACACGTGTTGACTCCATTGTTTTACATGTAGCAAAGTCTGCCA TCTGTGTCTGCTGTATTATAAACAGATAAGCAGCCTACAAGATAACTGTATTTATAAACCACTCTTCAACAGCTGGCTCCAGTGCTG GTTTTAGAACAAGAATGAAGTCATTTTGGAGTCTTTCATGTCTAAAAGATTTAAGTTAAAAAACAAAGTGTTACTTGGAAGGTTAGCT TCTATCATTCTGGATAGATTACAGATATAACAATGTTGACTATGGGGGAGAGACGCTGCATTCCAGAAACGTCTTAACACTTGA 30 GTGAATCTTCAAAGGACCCTGACATTAAATGCTGAGGCTTTAATACACACATATTTTATCCCAAGTTTATAATGGTGGTCTGAACAA GGCACCTGTAAATAAATCAGCATTTATGACCAGAAGAAAAATAATCTGGTCTTGGACTTTTTATTTTTTATATGGAAAAAGTTTTAAGG CAGAAGTTCTGACAATAAAAGATACTAGCT

35 Amino acid sequence for Myosin X (GENBANK ACCESSION No. NM-012334)

alPheArgThrAspTyrGlyGlnValPheThrTyrLysGlnSerThrIleThrHisGlnLysValThrAlaMetHisProThrAsnGluGluGlyVa lAspAspMetAlaSerLeuThrGluLeuHisGlyGlySerIleMetTyrAsnLeuPheGlnArgTyrLysArgAsnGlnIleTyrThrTyrIleGly SerIleLeuAlaSerValAsnProTyrGlnProIleAlaGlyLeuTyrGluProAlaThrMetGluGlnTyrSerArgArgHisLeuGlyGluLeuP 40 ${\tt roProHisIlePheAlaIleAlaAsnGluCysTyrArgCysLeuTrpLysArgTyrAspAsnGlnCysIleLeuIleSerGlyGluSerGlyAlaGl$ ArgAlaIleLeuGluSerSerProIleMetGluAlaPheGlyAsnAlaLysThrValTyrAsnAsnAsnSerSerArgPheGlyLysPheValGlnL euAsnIleCysGlnLysGlyAsnIleGlnGlyGlyArgIleValAspTyrLeuLeuGluLysAsnArgValValArgGlnAsnProGlyGluArgAs nTyrHisIlePheTyrAlaLeuLeuAlaGlyLeuGluHisGluGluArgGluGluPheTyrLeuSerThrProGluAsnTyrHisTyrLeuAsnGln SerGlyCysValGluAspLysThrIleSerAspGlnGluSerPheArgGluValIleThrAlaMetAspValMetGlnPheSerLysGluGluValA rgGluValSerArgLeuLeuAlaGlyIleLeuHisLeuGlyAsnIleGluPheIleThrAlaGlyGlyAlaGlnValSerPheLysThrAlaLeuGl yArqSerAlaGluLeuLeuGlyLeuAspProThrGlnLeuThrAspAlaLeuThrGlnArgSerMetPheLeuArgGlyGluGluIleLeuThrPro LeuAsnValGlnGlnAlaValAspSerArgAspSerLeuAlaMetAlaLeuTyrAlaCysCysPheGluTrpValIleLysLysIleAsnSerArgI leLysGlyAsnGluAspPheLysSerIleGlyIleLeuAspIlePheGlyPheGluAsnPheGluValAsnHisPheGluGlnPheAsnIleAsnTy rAlaAsnGluLysLeuGlnGluTyrPheAsnLysHisIlePheSerLeuGluGlnLeuGluTyrSerArgGluGlyLeuValTrpGluAspIleAsp TrpIleAspAsnGlyGluCysLeuAspLeuIleGluLysLysLeuGlyLeuLeuAlaLeuIleAsnGluGluSerHisPheProGlnAlaThrAspS erThrLeuLeuGluLysLeuHisSerGlnHisAlaAsnAsnHisPheTyrValLysProArgValAlaValAsnAsnPheGlyValLysHisTyrAl aGlyGluValGlnTyrAspValArgGlyIleLeuGluLysAsnArgAspThrPheArgAspAspLeuLeuAsnLeuLeuArgGluSerArgPheAsp PheIleTyrAspLeuPheGluHisValSerSerArgAsnAsnGlnAspThrLeuLysCysGlySerLysHisArgArgProThrValSerSerGlnP ${\tt heLysAspSerLeuHisSerLeuMetAlaThrLeuSerSerAsnProPhePheValArgCysIleLysProAsnMetGlnLysMetProAspGlnLysMetProAs$ nPheAspGlnAlaValValLeuAsnGlnLeuArgTyrSerGlyMetLeuGluThrValArgIleArgLysAlaGlyTyrAlaValArgArgProPhe GlnAspPheTyrLysArqTyrLysValLeuMetArgAsnLeuAlaLeuProGluAspValArgGlyLysCysThrSerLeuLeuGlnLeuTyrAspA sAlaAlaMetValIleArgAlaHisValLeuGlyPheLeuAlaArgLysGlnTyrArgLysValLeuTyrCysValValIleIleGlnLysAsnTyr rgGlnLeuLeuAlaGluLysArgGluGluGluLysLysLysGlnGluGluGluGluGluLysLysArgGluGluGluGluGluGluArgGluAr qGluArgArgGluAlaGluLeuArgAlaGlnGlnGluGluGluThrArgLysGlnGlnGluLeuGluAlaLeuGlnLysSerGlnLysGluAlaGlu LeuThrArgGluLeuGluLysGlnLysGluAsnLysGlnValGluGluIleLeuArgLeuGluLysGluIleGluAspLeuGlnArgMetLysGluG lnGlnGluLeuSerLeuThrGluAlaSerLeuGlnLysLeuGlnGluArgArgAspGlnGluLeuArgArgLeuGluGluGluAlaCysArgAlaAl ${\tt aG1nG1uPheLeuG1uSerLeuAsnPheAspG1uIleAspG1uCysValArgAsnIleG1uArgSerLeuSerValG1ySerG1uPheSerG1uPheSerSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPheSerG1uPhe$ LeuAlaGluSerAlaCysGluGluLysProAsnPheAsnPheSerGlnProTyrProGluGluGluValAspGluGlyPheGluAlaAspAspAspA lapheLysAspSerProAsnProSerGluHisGlyHisSerAspGlnArgThrSerGlyIleArgThrSerAspAspSerSerGluGluAspProTy rmetAsnAspThrValValProThrSerProSerAlaAspSerThrValLeuLeuAlaProSerValGlnAspSerGlySerLeuHisAsnSerSer SerGlyGluSerThrTyrCysMetProGlnAsnAlaGlyAspLeuProSerProAspGlyAspTyrAspTyrAspGlnAspAspTyrGluAspGlyA ${\tt laIleThrSerGlySerSerValThrPheSerAsnSerTyrGlySerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerGlnTrpSerProAspTyrArgCysSerValGlyThrTyrAsnSerGlyThrTyrAsnTyrAsnSerGlyThrTyrAsnSerGlyThrTyrAsnTyrAsnSe$ 70 yAlaTyrArgPheSerSerGluGlyAlaGlnSerSerPheGluAspSerGluGluAspPheAspSerArgPheAspThrAspAspGluLeuSerTyr ${ t ArgArgAspSerValTyrSerCysValThrLeuProTyrPheHisSerPheLeuTyrMetLysGlyGlyLeuMetAsnSerTrpLysArgArgTrpC}$

uSerArgArgAsnTrpLysLysArgTrpPheValLeuArgGlnSerLysLeuMetTyrPheGluAsnAspSerGluGluLysLeuLysGlyThrVal GluValArqThrAlaLygGluIleIleAspAsnThrThrLygGluAsnGlyIleAspIleIleMetAlaAspArgThrPheHisLeuIleAlaGluS ${\tt erProGluAspAlaSerGlnTrpPheSerValLeuSerGlnValHisAlaSerThrAspGlnGluIleGlnGluMetHisAspGluGlnAlaAsnPraction of the control of$ oGlnAsnAlaValGlyThrLeuAspValGlyLeuIleAspSerValCysAlaSerAspSerProAspArgProAsnSerPheValIleIleThrAla ${\tt AsnArgValLeuHisCysAsnAlaAspThrProGluGluMetHisHisTrpIleThrLeuLeuGlnArgSerLysGlyAspThrArgValGluGlyGrammer} \\$ lnGluPheIleValArgGlyTrpLeuHisLysGluValLysAsnSerProLysMetSerSerLeuLysLeuLysLysAygTrpPheValLeuThrHi ${\tt sAsnSerLeuAspTyrTyrLysSerSerGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuAsnSerLeuCysSerValValProProAspGluLysAsnAlaLeuLysLeuGlyThrLeuValLeuGlyThrLeuValLeuGlyThrLeuCysLeuGlyThrLeuGlyThrLeuGlyThrLeuGlyThrLeuGlyThrLeuGlyThrLeuGlyThrLeuGlyThrLeu$ LysllePheLysGluThrGlyTyrTrpAsnValThrValTyrGlyArqLysHisCysTyrArgLeuTyrThrLysLeuLeuAsnGluAlaThrArgT ${\tt rpSerSerAlaIleGlnAsnValThrAspThrLysAlaProIleAspThrProThrGlnGlnLeuIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleLysGluAsnCysLeuAsnSerAlaIleGlnAspIleGl$ 10 rAspValValGluGlnIleTyrLysArgAsnProlleLeuArgTyrThrHisHisProLeuHisSerProLeuLeuProLeuProTyrGlyAspIle AsnLeuAsnLeuLeuLysAspLysGlyTyrThrThrLeuGlnAspGluAlaIleLysIlePheAsnSerLeuGlnGlnLeuGluSerMetSerAspP rolleProlleIleGlnGlyIleLeuGlnThrGlyHisAspheuArgProLeuArgAspGluLeuTyrCysGlnLeuIleLysGlnThrAsnLysVa lProHisProGlySerValGlyAsnLeuTyrSerTrpGlnIleLeuThrCysLeuSerCysThrPheLeuProSerArgGlyIleLeuLysTyrLeu LysPheHisLeuLysArgIleArgGluGlnPheProGlyThrGluMetGluLysTyrAlaLeuPheThrTyrGluSerLeuLysLysThrLysCysA rgGluPheValProSerArgAspGluIleGluAlaLeuIleHisArgGlnGluMetThrSerThrValTyrCysHisGlyGlySerCysLysI1 eThrIleAsnSerHisThrThrAlaGlyGluValValGluLysLeuIleArgGlyLeuAlaMetGluAspSerArgAsnMetPheAlaLeuPheGlu TyrAsnGlyHisValAspLysAlaIleGluSerArgThrValValAlaAspValLeuAlaLysPheGluLysLeuAlaAlaThrSerGluValGlyA spLeuProTrpLysPheTyrPheLysLeuTyrCysPheLeuAspThrAspAsnValProLysAspSerValGluPheAlaPheMetPheGluGlnA1 aHisGluAlaValIleHisGlyHisHisProAlaProGluGluAsnLeuGlnValLeuAlaAlaLeuArgLeuGlnTyrLeuGlnGlyAspTyrThr LeuHisAlaAlaIleProProLeuGluGluValTyrSerLeuGlnArgLeuLysAlaArgIleSerGlnSerThrLysThrPheThrProCysGluA ${\tt rgLeuGluLysArgArgThrSerPheLeuGluGlyThrLeuArgArgSerPheArgThrGlySerValValArgGlnLysValGluGluGluGlnMe}$ tLeuAspMetTrpIleLysGluGluValSerSerAlaArgAlaSerIleIleAspLysTrpArgLysPheGlnGlyMetAsnGlnGluGlnAlaMet ${\tt AlaLysTyrMetAlaLeuIleLysGluTrpProGlyTyrGlySerThrLeuPheAspValGluCysLysGluGlyGlyPheProGlnGluLeuTrpL}$ euGlyValSerAlaAspAlaValSerValTyrLysArgGlyGluGlyArgProLeuGluValPheGlnTyrGluHisIleLeuSerPheGlyAlaPr ${\tt oLeuAlaAsnThrTyrLysIleValValAspGluArgGluLeuLeuPheGluThrSerGluValValAspValAlaLysLeuMetLysAlaTyrIle}$ SerMetIleValLysLysArgTyrSerThrThrArgSerAlaSerSerGlnGlySerSerArg (SEQ ID NO: 10).

(GENBANK ACCESSION NO. NM_001743)

GGCACGAGGGCGCGGCGGAGCTGGAACTGCTGCAGCTGCTGCCGCCGCGGAGGAACCTTGATCCCCGTGCTCCGGACACCCCGGG CCTCGCCATGGCTGACCAGCTGACTGAGGAGCAGATTGCAGAGTTCAAGGAGGCCTTCTCCCTCTTTGACAAGGATGGAGATGGCA $\tt CTATCACCACCAAGGAGTTGGGGACAGTGATGAGATCCCTGGGACAGAACCCCACTGAAGCAGAGCTGCAGGATATGATCAA$ 30 GAGGAGATCCGAGAGGCGTTCCGTGTCTTTGACAAGGATGGGAATGGCTACATCAGCGCCGCAGAGCTGCGTCACGTAATGACGAA CCTGGGGGAGAAGCTGACCGATGAGGAGGTGGATGAGATGATCAGGGAGGCTGACATCGATGGAGATGGCCAGGTCAATTATGAA 35 TGTCCCAAGCTGCATGATTGCTCTTCTCCTTCTTCCCTGAGTCTCTCCCATGCCCCTCATCTCTTCCTTTTTGCCCTCGCCTCTTCCAT CCATGTCTTCCAAGGCCTGATGCATTCATAAGTTGAAGCCCTCCCCAGATCCCCTTGGGGAGCCTCTGCCCTCCCAGCCCGGATG GCTCTCCTCCATTTTGGTTTGTTTTCTCTCTTGTTGTCATCTTATTTTGGGTGCTGGGGTGGCTGCCAGCCCTGTCCCGGGACCTGCTGG 40 AGCAGCCTGTTGGGGCAGGGGTGCCAAGAGAGGCCATTCCAGAAGGACTGAGGGGGCGTTGAGGAATTGTGGCGTTGACTGGATGT GGCCCAGGAGGGGGTCGAGGGGGCCAACTCACAGAAGGGGACTGACAGTGGGCAACACTCACATCCCACTGGCTGCTGTTCTGAA ACCATCTGATTGGCTTTCTGAGGTTTGGCTGGGTGGGGACTGCTCATTTGGCCACTCTGCAGATTGGACTTGCCCGCGTTCCTGAAGC

- 55 Amino acid sequence for Calmodulin 2 (GENBANK ACCESSION No. NM_001743)

MetAlaAspGlnLeuThrGluGluGlnIleAlaGluPheLysGluAlaPheSerLeuPheAspLysAspGlyAspGlyThrIleThrThrLysGluL euGlyThrValMetArgSerLeuGlyGlnAsnProThrGluAlaGluLeuGlnAspMetIleAsnGluValAspAlaAspGlyAsnGlyThrIleAs pPheProGluPheLeuThrMetMetAlaArgLysMetLysAspThrAspSerGluGluGluIleArgGluAlaPheArgValPheAspLysAspGly AsnGlyTyrIleSerAlaAlaGluLeuArgHisValMetThrAsnLeuGlyGluLysLeuThrAspGluGluValAspGluMetIleArgGluAlaA

60 spileAspGlyAspGlyGlnValAsnTyrGluGluPheValGlnMetMetThrAlaLys (SEQ ID NO: 12).

SEQ ID NO, GENBANK ACCESSION NO., Length of oligo, Position of First nucleotide of oligo in target nucleic acid, Sequence of oligo 13,M55153,,20,3238,GGAATTGTGTATTGCAAACA,, 14,M55153,,20,3232,GTGTATTGCAAACATGGAGT,,

- 15,M55153,,20,3226,TGCAAACATGGAGTGGAGAG, 65 16,M55153,,20,3220,CATGGAGTGGAGAGGATCCT, 17,M55153,,20,3214,GTGGAGAGGATCCTTGGAGA, 18,M55153,,20,3208,AGGATCCTTGGAGATGAGCA, 19,M55153,,20,3202,CTTGGAGATGAGCAGGTTCA,
- 20,M55153,,20,3196,GATGAGCAGGTTCAATCACT,, 70 21,M55153,,20,3190,CAGGTTCAATCACTCCTCTG,, 22,M55153,,20,3184,CAATCACTCCTCTGACCAAC,, 23,M55153,,20,3178,CTCCTCTGACCAACAAGGAA,,

24,M\$5153,,20,3172,TGACCAACAAGGAAACAAAG,, 25,M55153,,20,3166,ACAAGGAAACAAAGGCCCAG,, 26,M55153,,20,3160,AAACAAAGGCCCAGAGAGGA, 27,M55153,,20,3154,AGGCCCAGAGAGGAGAAGGC,, 28,M55153,,20,3148,AGAGAGGAGAAGGCAGTCGC,, 29,M55153,,20,3142,GAGAAGGCAGTCGCTGGCCA,, 30,M55153,,20,3136,GCAGTCGCTGGCCAGACGTG,, 31,M55153,,20,3130,GCTGGCCAGACGTGGGACCT,, 32,M55153,,20,3124,CAGACGTGGGACCTGAACCC,, 10 33,M55153,,20,3118,TGGGACCTGAACCCAGCCAG,, 34,M55153,,20,3112,CTGAACCCAGCCAGGGCTCT, 35,M55153,,20,3106,CCAGCCAGGGCTCTGACTCC,, 36,M55153,,20,3100,AGGGCTCTGACTCCCAGTCC,, 37,M55153,,20,3094,CTGACTCCCAGTCCCCCAGT,, 38,M55153,,20,3088,CCCAGTCCCCAGTCCCCTC,, 15 39,M55153,,20,3082,CCCCAGTCCCCTCTCTACC,, 40,M55153,,20,3076,GTCCCCTCTCTACCTCCTTG,, 41,M55153,,20,3070,TCTCTACCTCCTTGTCTTGG,, 42,M55153,,20,3064,CCTCCTTGTCTTGGCTGAGT, 20 43,M55153,,20,3058,TGTCTTGGCTGAGTCTTTTT,, 44,M55153,,20,3052,GGCTGAGTCTTTTTTTGATA,, 45,M55153,,20,3046,GTCTTTTTTTGATAAAGGCC,, 46,M55153,,20,3040,TTTTGATAAAGGCCCCAGAC,, 47,M55153,,20,3034,TAAAGGCCCCAGACAGCCTC,, 25 48,M55153,,20,3028,CCCCAGACAGCCTCTGCGAC,, 49,M55153,,20,3022,ACAGCCTCTGCGACAGTCTC,, 50,M55153,,20,3016,TCTGCGACAGTCTCAGGTCA,, 51,M55153,,20,3010,ACAGTCTCAGGTCAGGCTGG,, 52,M55153,,20,3004,TCAGGTCAGGCTGGGGTTAT,, 53,M55153,,20,2998,CAGGCTGGGGTTATAAATGG,, 30 54,M55153,,20,2992,GGGGTTATAAATGGAGCAGT,, 55,M55153,,20,2986,ATAAATGGAGCAGTGGACTC,, 56,M55153,,20,2980,GGAGCAGTGGACTCAGAGTC,, 57,M55153,,20,2974,GTGGACTCAGAGTCAGAGGC,, 35 58,M55153,,20,2968,TCAGAGTCAGAGGCCCAGAC,, 59,M55153,,20,2962,TCAGAGGCCCAGACTCTGCT,, 60,M55153,,20,2956,GCCCAGACTCTGCTCTTGGG,, 61,M55153,,20,2950,ACTCTGCTCTTGGGCCTTCA,, 62,M55153,,20,2944,CTCTTGGGCCTTCACATTAC,, 63,M55153,,20,2938,GGCCTTCACATTACCCAGCC,, 64,M55153,,20,2932,CACATTACCCAGCCTTGCTT,, 65,M55153,,20,2926,ACCCAGCCTTGCTTATAACC,, 66,M55153,,20,2920,CCTTGCTTATAACCACGAGG,, 67,M55153,,20,2914,TTATAACCACGAGGCCACTG,, 45 68,M55153,,20,2908,CCACGAGGCCACTGGTGTGG,, 69,M55153,,20,2902,GGCCACTGGTGTGGAGGGGG,, 70,M55153,,20,2896,TGGTGTGGAGGGGGCTGCCT,, 71,M55153,,20,2890,GGAGGGGGCTGCCTCTCTC, 72,M55153,,20,2884,GGCTGCCTCTCTCTAAG,, 50 73,M55153,,20,2878,CTCCTCTCTCTAAGCCTCAG,, 74,M55153,,20,2872,TCTCTAAGCCTCAGTCTCCT,, 75,M55153,,20,2866,AGCCTCAGTCTCCTTATCCT,, 76,M55153,,20,2860,AGTCTCCTTATCCTGGAAGC,, 77,M55153,,20,2854,CTTATCCTGGAAGCAGCGCC,, 55 78,M55153,,20,2848,CTGGAAGCAGCGCCCACAAC,, 79,M55153,,20,2842,GCAGCGCCCACAACAGTTTC,, 80,M55153,,20,2836,CCCACAACAGTTTCCCATGG,, 81,M55153,,20,2830,ACAGTTTCCCATGGTGATTA,, 82,M55153,,20,2824,TCCCATGGTGATTAAATGGG,, 83,M55153,,20,2818,GGTGATTAAATGGGTTGGAG,, 60 84,M55153,,20,2812,TAAATGGGTTGGAGGCCCCG,, 85,M55153,,20,2806,GGTTGGAGGCCCCGTGAGCC,, 86,M55153,,20,2800,AGGCCCCGTGAGCCCCAGCA,, 87,M55153,,20,2794,CGTGAGCCCCAGCAAGTGTG,, 88,M55153,,20,2788,CCCCAGCAAGTGTGGGAGGC,, 65 89,M55153,,20,2782,CAAGTGTGGGAGGCACCCAG,, 90,M55153,,20,2776,TGGGAGGCACCCAGCACATA,, 91,M55153,,20,2770,GCACCCAGCACATAGTAGGT,, 92,M55153,,20,2764,AGCACATAGTAGGTGCTTCA,, 93,M55153,,20,2758,TAGTAGGTGCTTCACAATGG,, 70 94,M55153,,20,2752,GTGCTTCACAATGGTGAGGT, 95,M55153,,20,2746,CACAATGGTGAGGTTGAGGG,, 96,M55153,,20,2740,GGTGAGGTTGAGGGGGAGGG,, 97,M55153,,20,2734,GTTGAGGGGGAGGGCTATTA,,

98,M55153,,20,2728,GGGGAGGGCTATTAAGCTTG,,

75

99,M55153,,20,2722,GGCTATTAAGCTTGGGCTGC,, 100,M55153,,20,2716,TAAGCTTGGGCTGCTGGGAT,, 101,M55153,,20,2710,TGGGCTGCTGGGATGTGGAG,, 102,M55153,,20,2704,GCTGGGATGTGGAGGGGACC,, 103,M55153,,20,2698,ATGTGGAGGGGACCTTGGGC,, 5 104,M55153,,20,2692,AGGGGACCTTGGGCCTATCA,, 105,M55153,,20,2686,CCTTGGGCCTATCACTGTCC,, 106,M55153,,20,2680,GCCTATCACTGTCCCCACCC, 107,M55153,,20,2674,CACTGTCCCCACCCAGCTCT, 10 108,M55153,,20,2668,CCCCACCCAGCTCTGGGTGT,, 109,M55153,,20,2662,CCAGCTCTGGGTGTCCCAAG,, 110,M55153,,20,2656,CTGGGTGTCCCAAGGGCCCC,, 111,M55153,,20,2650,GTCCCAAGGGCCCCTGGAGC,, 112,M55153,,20,2644,AGGGCCCCTGGAGCTGGGTG,, 113,M55153,,20,2638,CCTGGAGCTGGGTGCAGTCA,, 114,M55153,,20,2632,GCTGGGTGCAGTCATGGGAA,, 115,M55153,,20,2626,TGCAGTCATGGGAAGAGGTA,, 116,M55153,,20,2620,CATGGGAAGAGGTACGGGAT,, 117,M55153,,20,2614,AAGAGGTACGGGATGCAGTC,, 118,M55153,,20,2608,TACGGGATGCAGTCTAGGGA,, 20 119,M55153,,20,2602,ATGCAGTCTAGGGAGCTGGA,, 120,M55153,,20,2596,TCTAGGGAGCTGGATTCCTG,, 121,M55153,,20,2590,GAGCTGGATTCCTGATCCAG,, 122,M55153,,20,2584,GATTCCTGATCCAGCCAAGG,, 25 123,M55153,,20,2578,TGATCCAGCCAAGGGCATGC,, 124,M55153,,20,2572,AGCCAAGGGCATGCTGTCCC,, 125,M55153,,20,2566,GGGCATGCTGTCCCTTTTTT,, 126,M55153,,20,2560,GCTGTCCCTTTTTTGCCTGC,, 127,M55153,,20,2554,CCTTTTTTGCCTGCTCCAAG,, 30 128,M55153,,20,2548,TTGCCTGCTCCAAGGAGCTA,, 129,M55153,,20,2542,GCTCCAAGGAGCTATGAAGT,, 130,M55153,,20,2536,AGGAGCTATGAAGTAGATCA,, 131,M55153,,20,2530,TATGAAGTAGATCAAACAAT,, 132,M55153,,20,2524,GTAGATCAAACAATATGGTG,, 35 133,M55153,,20,2518,CAAACAATATGGTGGGTGGT,, 134,M55153,,20,2512,ATATGGTGGGTGGTCAATGG,, 135,M55153,,20,2506,TGGGTGGTCAATGGCTTTCC,, 136,M55153,,20,2500,GTCAATGGCTTTCCAAAGGG,, 137,M55153,,20,2494,GGCTTTCCAAAGGGCATCTG,, 40 138,M55153,,20,2488,CCAAAGGGCATCTGGGCAGG,, 139,M55153,,20,2482,GGCATCTGGGCAGGAGAGGG,, 140,M55153,,20,2476,TGGGCAGGAGAGGGAATGTA,, 141,M55153,,20,2470,GGAGAGGGAATGTAGGTCTT,, 142,M55153,,20,2464,GGAATGTAGGTCTTTCCTCT,, 143,M55153,,20,2458,TAGGTCTTTCCTCTCACC,, 144,M55153,,20,2452,TTTCCTCTCTCACCCCAGCC,, 145,M55153,,20,2446,CTCTCACCCCAGCCCCAGTC,, 146,M55153,,20,2440,CCCCAGCCCCAGTCAGCACA,, 147,M55153,,20,2434,CCCCAGTCAGCACAGGTCAG,, 50 148,M55153,,20,2428,TCAGCACAGGTCAGGGCTCC,, 149,M55153,,20,2422,CAGGTCAGGGCTCCCACTGT,, 150,M55153,,20,2416,AGGGCTCCCACTGTTTCTGG,, 151,M55153,,20,2410,CCCACTGTTTCTGGCACAGA,, 152,M55153,,20,2404,GTTTCTGGCACAGAGCATTC, 55 153,M55153,,20,2398,GGCACAGAGCATTCCTCACA,, 154,M55153,,20,2392,GAGCATTCCTCACAGCAAAG,, 155,M55153,,20,2386,TCCTCACAGCAAAGGGGGTG,, 156,M55153,,20,2380,CAGCAAAGGGGGTGAGTGGG, 157,M55153,,20,2374,AGGGGGTGAGTGGGGACCCA,, 60 158,M55153,,20,2368,TGAGTGGGGACCCACAGGCT,, 159,M55153,,20,2362,GGGACCCACAGGCTCAGGAG,, 160,M55153,,20,2356,CACAGGCTCAGGAGGCTGAG,, 161,M55153,,20,2350,CTCAGGAGGCTGAGATGGGC,, 162,M55153,,20,2344,AGGCTGAGATGGGCCAGGGG,, 163,M55153,,20,2338,AGATGGGCCAGGGGCACATT,, 164,M55153,,20,2332,GCCAGGGGCACATTCCATTT,, 165,M55153,,20,2326,GGCACATTCCATTTCCGAGA,, 166,M55153,,20,2320,TTCCATTTCCGAGAGCCCCC,, 167,M55153,,20,2314,TTCCGAGAGCCCCCATAGGC,, 70 168,M55153,,20,2308,GAGCCCCCATAGGCTGCCCA,, 169,M55153,,20,2302,CCATAGGCTGCCCACCCTGC,, 170,M55153,,20,2296,GCTGCCCACCCTGCCCTGGG,, 171,M55153,,20,2290,CACCCTGCCCTGGGGTCTGG,, 172,M55153,,20,2284,GCCCTGGGGTCTGGGGCCCA,, 75 173,M55153,,20,2278,GGGTCTGGGGCCCAATAAGG,,

174,M55153,,20,2272,GGGGCCCAATAAGGGGCATA,, 175,M55153,,20,2266,CAATAAGGGGCATATTTTGC... 176,M55153,,20,2260,GGGGCATATTTTGCTCACTA,, 177,M55153,,20,2254,TATTTTGCTCACTAGCTTGG,, 178,M55153,,20,2248,GCTCACTAGCTTGGGATAAG,, 179,M55153,,20,2242,TAGCTTGGGATAAGGATTGG,, 180,M55153,,20,2236,GGGATAAGGATTGGGATCAA,, 181,M55153,,20,2230,AGGATTGGGATCAAGGTGGG,, 182,M55153,,20,2224,GGGATCAAGGTGGGGGCTCT,, 183,M55153,,20,2218,AAGGTGGGGGCTCTCAGCAG,, 10 184,M55153,,20,2212,GGGGCTCTCAGCAGGCTGGG,, 185,M55153,,20,2206,CTCAGCAGGCTGGGAGCAGG,, 186,M55153,,20,2200,AGGCTGGGAGCAGGGGTCCC,, 187,M55153,,20,2194,GGAGCAGGGGTCCCTTAGGC,, 188,M55153,,20,2188,GGGGTCCCTTAGGCGGGGCC,, 15 189,M55153,,20,2182,CCTTAGGCGGGGCCAATGAT,, 190,M55153,,20,2176,GCGGGGCCAATGATGACATT,, 191,M55153,,20,2170,CCAATGATGACATTCCGGAA,, 192,M55153,,20,2164,ATGACATTCCGGAAGCCCTT,, 20 193,M55153,,20,2158,TTCCGGAAGCCCTTCACAGC,, 194,M55153,,20,2152,AAGCCCTTCACAGCCTTCAG,, 195,M55153,,20,2146,TTCACAGCCTTCAGCTTGTC,, 196,M55153,,20,2140,GCCTTCAGCTTGTCGCTCTC,, 197,M55153,,20,2134,AGCTTGTCGCTCTCGAAGTT,, 198,M55153,,20,2128,TCGCTCTCGAAGTTCACCAC,, 25 199,M55153,,20,2122,TCGAAGTTCACCACCAGCTT,, 200,M55153,,20,2116,TTCACCACCAGCTTGTGGAG,, 201,M55153,,20,2110,ACCAGCTTGTGGAGGCCCAT,, 202,M55153,,20,2104,TTGTGGAGGCCCATGTGGAG,, 30 203,M55153,,20,2098,AGGCCCATGTGGAGCGGCAC,, 204,M55153,,20,2092,ATGTGGAGCGGCACGAGGTC,, 205,M55153,,20,2086,AGCGGCACGAGGTCCATTCT,, 206,M55153,,20,2080,ACGAGGTCCATTCTCACCTT,, 207,M55153,,20,2074,TCCATTCTCACCTTAACTTC, 208,M55153,,20,2068,CTCACCTTAACTTCCTCCCC,, 209,M55153,,20,2062,TTAACTTCCTCCCTGCCTC,, 210,M55153,,20,2056,TCCTCCCTGCCTCCACGGG,, 211,M55153,,20,2050,CCTGCCTCCACGGGGTCTGG,, 212,M55153,,20,2044,TCCACGGGGTCTGGGATCTC,, 40 213,M55153,,20,2038,GGGTCTGGGATCTCCACCGT,, 214,M55153,,20,2032,GGGATCTCCACCGTCTTCTG,, 215,M55153,,20,2026,TCCACCGTCTTCTGCTCCTC,, 216,M55153,,20,2020,GTCTTCTGCTCCTCAGTCAG, 217,M55153,,20,2014,TGCTCCTCAGTCAGGCCGGC,, 218,M55153,,20,2008,TCAGTCAGGCCGGCCCCCTC, 219,M55153,,20,2002,AGGCCGGCCCCTCCACAGT,, 220,M55153,,20,1996,GCCCCCTCCACAGTGAAGGT,, 221,M55153,,20,1990,TCCACAGTGAAGGTGCAGCC,, 222,M55153,,20,1984,GTGAAGGTGCAGCCTTCCAG,, 50 223,M55153,,20,1978,GTGCAGCCTTCCAGGGCCAC,, 224,M55153,,20,1972,CCTTCCAGGGCCACAGGGAG,, 225,M55153,,20,1966,AGGGCCACAGGGAGCGGGTT,, 226,M55153,,20,1960,ACAGGGAGCGGGTTCTGCAG,, 227,M55153,,20,1954,AGCGGGTTCTGCAGGGACAC,, 228,M55153,,20,1948,TTCTGCAGGGACACCTCAGC,, 55 229,M55153,,20,1942,AGGGACACCTCAGCCACCAG,, 230,M55153,,20,1936,ACCTCAGCCACCAGCTTGCG,, 231,M55153,,20,1930,GCCACCAGCTTGCGTTTCTG,, 232,M55153,,20,1924,AGCTTGCGTTTCTGCTTGGG,, 60 233,M55153,,20,1918,CGTTTCTGCTTGGGCTCCCC,, 234,M55153,,20,1912,TGCTTGGGCTCCCCAAGGAT, 235,M55153,,20,1906,GGCTCCCCAAGGATCCGGAT,, 236,M55153,,20,1900,CCAAGGATCCGGATCTTGAT,, 237,M55153,,20,1894,ATCCGGATCTTGATTTCTGG,, 238,M55153,,20,1888,ATCTTGATTTCTGGATTCTC,, 239,M55153,,20,1882,ATTTCTGGATTCTCCAGGTA,, 240,M55153,,20,1876,GGATTCTCCAGGTAGAGGTC,, 241,M55153,,20,1870,TCCAGGTAGAGGTCCCTCTC,, 242,M55153,,20,1864,TAGAGGTCCCTCTCAGCCAG,, 243,M55153,,20,1858,TCCCTCTCAGCCAGCAGGTA,, 244,M55153,,20,1852,TCAGCCAGCAGGTAGCTGTT,, 245,M55153,,20,1846,AGCAGGTAGCTGTTGATAAC,, 246,M55153,,20,1840,TAGCTGTTGATAACTGGCTC,, 247,M55153,,20,1834,TTGATAACTGGCTCCACGAG, 75 248,M55153,,20,1828,ACTGGCTCCACGAGGAGGGC,,

249,M55153.,20,1822,TCCACGAGGAGGGCCCGCAC, 250,M55153,,20,1816,AGGAGGGCCCGCACCTTGAT,, 251,M55153,,20,1810,GCCCGCACCTTGATGAGGTT,, 252,M55153,,20,1804,ACCTTGATGAGGTTGGACTC,, 253,M55153,,20,1798,ATGAGGTTGGACTCCGTAAG,, 5 254,M55153,,20,1792,TTGGACTCCGTAAGGCAGTC,, 255,M55153,,20,1786,TCCGTAAGGCAGTCACGGTA,, 256,M55153,,20,1780,AGGCAGTCACGGTATTTCTC,, 257,M55153,,20,1774,TCACGGTATTTCTCATAGAG,, 10 258,M55153,,20,1768,TATTTCTCATAGAGGATGCA,, 259,M55153,,20,1762,TCATAGAGGATGCAAAGAGG,, 260,M55153,,20,1756,AGGATGCAAAGAGGAACGCT,, 261,M55153,,20,1750,CAAAGAGGAACGCTCTTCTC,, 262,M55153,,20,1744,GGAACGCTCTTCTCAGAGAA,, 263,M55153,,20,1738,CTCTTCTCAGAGAAAGGCTC,, 264,M55153,,20,1732,TCAGAGAAAGGCTCCAGGGT,, 265,M55153,,20,1726,AAAGGCTCCAGGGTTAGGTT, 266,M55153,,20,1720,TCCAGGGTTAGGTTGAGCAG,, 267,M55153,,20,1714,GTTAGGTTGAGCAGGTACTT,, 268,M55153,,20,1708,TTGAGCAGGTACTTGGTGCC,, 269,M55153,,20,1702,AGGTACTTGGTGCCACACTC,, 270,M55153,,20,1696,TTGGTGCCACACTCGGGCCC,, 271,M55153,,20,1690,CCACACTCGGGCCCCAAGAT,, 272,M55153,,20,1684,TCGGGCCCCAAGATCCCATT, 273,M55153,,20,1678,CCCAAGATCCCATTGTAGCT,, 25 274,M55153,,20,1672,ATCCCATTGTAGCTGACGGT,, 275,M55153,,20,1666,TTGTAGCTGACGGTGCGGGC,, 276,M55153,,20,1660,CTGACGGTGCGGGCACAGAG,, 277,M55153,,20,1654,GTGCGGGCACAGAGCAGGAG,, 30 278,M55153,,20,1648,GCACAGAGCAGGAGGCGGCA,, 279,M55153,,20,1642,AGCAGGAGGCGGCAGACGTA,, 280,M55153,,20,1636,AGGCGGCAGACGTACTCCTC,, 281,M55153,,20,1630,CAGACGTACTCCTCAGCGGT,, 282,M55153,,20,1624,TACTCCTCAGCGGTGTTGTT,, 35 283,M55153,,20,1618,TCAGCGGTGTTGTTGGTGAT,, 284,M55153,,20,1612,GTGTTGTTGGTGATGTGGGC,, 285,M55153,,20,1606,TTGGTGATGTGGGCAAAGAC,, 286,M55153,,20,1600,ATGTGGGCAAAGACGTCAAA,, 287,M55153,,20,1594,GCAAAGACGTCAAAGTCACT,, 40 288,M55153,,20,1588,ACGTCAAAGTCACTGCCCAT,, 289,M55153,,20,1582,AAGTCACTGCCCATGTTCAT,, 290,M55153,,20,1576,CTGCCCATGTTCATGCTCTG,, 291,M55153,,20,1570,ATGTTCATGCTCTGGCCCAC,, 292,M55153,,20,1564,ATGCTCTGGCCCACACGGAT,, 293,M55153,,20,1558,TGGCCCACACGGATCCGCAT,, 45 294,M55153,,20,1552,ACACGGATCCGCATGGCCAT,, 295,M55153,,20,1546,ATCCGCATGGCCATCCCTGT,, 296,M55153,,20,1540,ATGGCCATCCCTGTCTCCTC,, 297,M55153,,20,1534,ATCCCTGTCTCCTCCTTCTC,, 50 298,M55153,,20,1528,GTCTCCTCCTTCTCGGCCAG,, 299,M55153,,20,1522,TCCTTCTCGGCCAGTTTGTT,, 300,M55153,,20,1516,TCGGCCAGTTTGTTCAGGTG,, 301,M55153,,20,1510,AGTTTGTTCAGGTGGTTCGC, 302,M55153,,20,1504,TTCAGGTGGTTCGCCCTTGT,, 55 303,M55153,,20,1498,TGGTTCGCCCTTGTGAAGGC,, 304,M55153,,20,1492,GCCCTTGTGAAGGCCTCCCT,, 305,M55153,,20,1486,GTGAAGGCCTCCCTCTCCTC, 306,M55153,,20,1480,GCCTCCCTCTCTGAGGA,, 307,M55153,,20,1474,CTCTCCTCTGAGGACCCCTC,, 60 308,M55153,,20,1468,TCTGAGGACCCCTCTGGGTA,, 309,M55153,,20,1462,GACCCCTCTGGGTATTTGTA,, 310,M55153,,20,1456,TCTGGGTATTTGTAGGTGTG,, 311,M55153,,20,1450,TATTTGTAGGTGTGGGTGAT,, 312,M55153,,20,1444,TAGGTGTGGGTGATATCCTC,, 313,M55153,,20,1438,TGGGTGATATCCTCCCGCTC,, 314,M55153,,20,1432,ATATCCTCCCGCTCGTCTCG,, 315,M55153,,20,1426,TCCCGCTCGTCTCGGCCCAC,, 316,M55153,,20,1420,TCGTCTCGGCCCACGCTCTT,, 317,M55153,,20,1414,CGGCCCACGCTCTTAGTGCT,, 318,M55153,,20,1408,ACGCTCTTAGTGCTGATCTT,, 70 319,M55153,,20,1402,TTAGTGCTGATCTTCAGCCC,, 320,M55153,,20,1396,CTGATCTTCAGCCCAACGAT,, 321,M55153,,20,1390,TTCAGCCCAACGATCAGGGA,, 322,M55153,,20,1384,CCAACGATCAGGGAACGGTT,, 75 323,M55153,,20,1378,ATCAGGGAACGGTTGATGGA,,

324,M55153,,20,1372,GAACGGTTGATGGATTTGTG,, 325,M55153,,20,1366,TTGATGGATTTGTGCACAGA,, 326,M55153,,20,1360,GATTTGTGCACAGACCCATC,, 327,M55153,,20,1354,TGCACAGACCCATCGTCCTG,, 328,M55153,,20,1348,GACCCATCGTCCTGCTGGAT,, 329,M55153,,20,1342,TCGTCCTGCTGGATCCAGTC,, 330,M55153,,20,1336,TGCTGGATCCAGTCTACCAC,, 331,M55153,,20,1330,ATCCAGTCTACCACGTCGGC,, 332,M55153,,20,1324,TCTACCACGTCGGCATTGAC,, 333,M55153,,20,1318,ACGTCGGCATTGACCTCCGC,, 334,M55153,,20,1312,GCATTGACCTCCGCAAAGAC,, 335,M55153,,20,1306,ACCTCCGCAAAGACAAAGGG,, 336,M55153,,20,1300,GCAAAGACAAAGGGCGCATC,, 337,M55153,,20,1294,ACAAAGGGCGCATCGTACTT,, 338,M55153,,20,1288,GGCGCATCGTACTTGGTGCT, 15 339,M55153,,20,1282,TCGTACTTGGTGCTCAGGTC,, 340,M55153,,20,1276,TTGGTGCTCAGGTCGCCCTC,, 341,M55153,,20,1270,CTCAGGTCGCCCTCCTTGAT,, 342,M55153,,20,1264,TCGCCCTCCTTGATGGCACG,, 20 343,M55153,,20,1258,TCCTTGATGGCACGAACTGG,, 344,M55153,,20,1252,ATGGCACGAACTGGAACTGG,, 345,M55153,,20,1246,CGAACTGGAACTGGGCCACA,, 346,M55153,,20,1240,GGAACTGGGCCACAGCAGTA,, 347,M55153,,20,1234,GGGCCACAGCAGTACGTTCC,, 348,M55153,,20,1228,CAGCAGTACGTTCCTTCGCT,, 349,M55153,,20,1222,TACGTTCCTTCGCTCTTCTC,, 350,M55153,,20,1216,CCTTCGCTCTTCTCCTGGGG,, 351,M55153,,20,1210,CTCTTCTCCTGGGGCGTTGG,, 352,M55153,,20,1204,TCCTGGGGCGTTGGGTCCAG,, 30 353,M55153,,20,1198,GGCGTTGGGTCCAGGGCCTG,, 354,M55153,,20,1192,GGGTCCAGGGCCTGCCAGCC,, 355,M55153,,20,1186,AGGGCCTGCCAGCCCTCGTA,, 356,M55153,,20,1180,TGCCAGCCCTCGTACCCCGG,, 357,M55153,,20,1174,CCCTCGTACCCCGGCTGCAG, 35 358,M55153,,20,1168,TACCCCGGCTGCAGGTCCGG,, 359,M55153,,20,1162,GGCTGCAGGTCCGGCCTGGT,, 360,M55153,,20,1156,AGGTCCGGCCTGGTCATCCA,, 361,M55153,,20,1150,GGCCTGGTCATCCACGACTC,, 362,M55153,,20,1144,GTCATCCACGACTCCACCCA,, 363,M55153,,20,1138,CACGACTCCACCCAGCAGTG,, 40 364,M55153,,20,1132,TCCACCCAGCAGTGGAAGTT,, 365,M55153,,20,1126,CAGCAGTGGAAGTTCCAGAT,, 366,M55153,,20,1120,TGGAAGTTCCAGATCATCTC,, 367,M55153,,20,1114,TTCCAGATCATCTCGCTCTT,, 45 368,M55153,,20,1108,ATCATCTCGCTCTTGTCACC,, 369,M55153,,20,1102,TCGCTCTTGTCACCCTGGAT,, 370,M55153,,20,1096,TTGTCACCCTGGATCTCCCC, 371,M55153,,20,1090,CCCTGGATCTCCCCAAACTC,, 372,M55153,,20,1084,ATCTCCCCAAACTCATTGCG,, 373,M55153,,20,1078,CCAAACTCATTGCGGAAGTA,, 374,M55153,,20,1072,TCATTGCGGAAGTACTCGAT,, 375,M55153,,20,1066,CGGAAGTACTCGATGAGAAG,, 376,M55153,,20,1060,TACTCGATGAGAAGGTTGCT,, 377,M55153,,20,1054,ATGAGAAGGTTGCTGTTCTG,, 378,M55153,,20,1048,AGGTTGCTGTTCTGGTCATG,, 55 379,M55153,,20,1042,CTGTTCTGGTCATGGGCCGA,, 380,M55153,,20,1036,TGGTCATGGGCCGAGTTGTA,, 381,M55153,,20,1030,TGGGCCGAGTTGTAGTTGGT,, 382,M55153,,20,1024,GAGTTGTAGTTGGTCACGAC, 60 383,M55153,,20,1018,TAGTTGGTCACGACGCGGGT,, 384,M55153,,20,1012,GTCACGACGCGGGTAGGGAT,, 385,M55153,,20,1006,ACGCGGGTAGGGATGCCTAG,, 386,M55153,,20,1000,GTAGGGATGCCTAGGCACCT,, 387,M55153,,20,994,ATGCCTAGGCACCTCAGCAC,, 388,M55153,,20,988,AGGCACCTCAGCACTGTGCA,, 389_M55153,,20,982,CTCAGCACTGTGCAGGCCAC,, 390,M55153,,20,976,ACTGTGCAGGCCACGGCGGC,, 391,M55153,,20,970,CAGGCCACGGCGGCGAAGAC,, 392,M55153,,20,964,ACGGCGGCGAAGACCCAGCA,, 393,M55153,,20,958,GCGAAGACCCAGCACTGGCC,, 394,M55153,,20,952,ACCCAGCACTGGCCATACTT,, 395,M55153,,20,946,CACTGGCCATACTTGACGCG,, 396,M55153,,20,940,CCATACTTGACGCGCTGGCA,, 397,M55153,,20,934,TTGACGCGCTGGCAGCCGTG,, 398,M55153,,20,928,CGCTGGCAGCCGTGGTTCTT, 75

399,M55153.,20,922,CAGCCGTGGTTCTTCCAGCG, 400,M55153,,20,916,TGGTTCTTCCAGCGCCGCAG,, 401,M55153,,20,910,TTCCAGCGCCGCAGGATGTC,, 402,M55153,,20,904,CGCCGCAGGATGTCCACGCT,, 403,M55153,,20,898,AGGATGTCCACGCTGCCGAT,, 404,M55153,,20,892,TCCACGCTGCCGATCCAGGA,, 405,M55153,,20,886,CTGCCGATCCAGGACATGGG,, 406,M55153,,20,880,ATCCAGGACATGGGGCTGAC,, 407,M55153,,20,874,GACATGGGGCTGACGCCGTC,, 408,M55153,,20,868,GGGCTGACGCCGTCCCCGTA,, 409,M55153,,20,862,ACGCCGTCCCCGTAGTTGTT,, 410,M55153,,20,856,TCCCCGTAGTTGTTGTCCCA,, 411,M55153,,20,850,TAGTTGTTGTCCCAGCGTCC,, 412,M55153,,20,844,TTGTCCCAGCGTCCCAGCAG,, 413,M55153,,20,838,CAGCGTCCCAGCAGCACACC,, 414,M55153,,20,832,CCCAGCAGCACACCCTGGTC,, 415,M55153,,20,826,AGCACACCCTGGTCATCGTT,, 416,M55153,,20,820,CCCTGGTCATCGTTGCAGTT,, 417,M55153,,20,814,TCATCGTTGCAGTTGACCAT,, 418,M55153,,20,808,TTGCAGTTGACCATGCCACT,, 419,M55153,,20,802,TTGACCATGCCACTACCCAC,, 420,M55153,,20,796,ATGCCACTACCCACCCGGCC,, 421,M55153,,20,790,CTACCCACCCGGCCCACGTA,, 422,M55153,,20,784,ACCCGGCCCACGTAGACGGG, 25 423,M55153,,20,778,CCCACGTAGACGGGGCTGCT,, 424,M55153,,20,772,TAGACGGGGCTGCTGCGCCG,, 425,M55153,,20,766,GGGCTGCTGCGCCGGGAGCA,, 426,M55153,,20,760,CTGCGCCGGGAGCAGTCACG,, 427,M55153,,20,754,CGGGAGCAGTCACGGCCGGC,, 30 428,M55153,,20,748,CAGTCACGGCCGGCGTTCTT,, 429,M55153,,20,742,CGGCCGGCGTTCTTCAGGAA,, 430,M55153,,20,736,GCGTTCTTCAGGAACTTGGG,, 431,M55153,,20,730,TTCAGGAACTTGGGGTTGAC,, 432,M55153,,20,724,AACTTGGGGTTGACATCTAG,, 35 433,M55153,,20,718,GGGTTGACATCTAGAAGGAT,, 434,M55153,,20,712,ACATCTAGAAGGATCAGGCA,, 435,M55153,,20,706,AGAAGGATCAGGCAGATGTC,, 436,M55153,,20,700,ATCAGGCAGATGTCTAGGAT,, 437,M55153,,20,694,CAGATGTCTAGGATCCCATC,, 40 438,M55153,,20,688,TCTAGGATCCCATCTTGAAA,, 439,M55153,,20,682,ATCCCATCTTGAAACTGCCC,, 440,M55153,,20,676,TCTTGAAACTGCCCAAAATT,, 441,M55153,,20,670,AACTGCCCAAAATTCCAAGG,, 442,M55153,,20,664,CCAAAATTCCAAGGTATGTT,, 443,M55153,,20,658,TTCCAAGGTATGTTCTTGAT,, 444,M55153,,20,652,GGTATGTTCTTGATGAACTT,, 445,M55153,,20,646,TTCTTGATGAACTTGGCCGA,, 446,M55153,,20,640,ATGAACTTGGCCGAGCCCTG,, 447,M55153,,20,634,TTGGCCGAGCCCTGGTAGAT,, 448,M55153,,20,628,GAGCCCTGGTAGATAAAGCC,, 449,M55153,,20,622,TGGTAGATAAAGCCCTGCTG,, 450,M55153,,20,616,ATAAAGCCCTGCTGGGTGAG,, 451,M55153,,20,610,CCCTGCTGGGTGAGGACATA,, 452,M55153,,20,604,TGGGTGAGGACATACTCCTG,, 55 453,M55153,,20,598,AGGACATACTCCTGCCGCTC,, 454,M55153,,20,592,TACTCCTGCCGCTCCTCTTC,, 455,M55153,,20,586,TGCCGCTCCTCTTCCGAGTC,, 456,M55153,,20,580,TCCTCTTCCGAGTCCAGGTA,, 457,M55153,,20,574,TCCGAGTCCAGGTACACAGC,, 458,M55153,,20,568,TCCAGGTACACAGCATCCGC,, 459,M55153,,20,562,TACACAGCATCCGCTGGGCA,, 460,M55153,,20,556,GCATCCGCTGGGCACCAGGC,, 461,M55153,,20,550,GCTGGGCACCAGGCGTTGAA,, 462,M55153,,20,544,CACCAGGCGTTGAAGAGCAA,, 463,M55153,,20,538,GCGTTGAAGAGCAAAATGAA,, 464,M55153,,20,532,AAGAGCAAAATGAAGTGGCC,, 465,M55153,,20,526,AAAATGAAGTGGCCCAGCAC,, 466,M55153,,20,520,AAGTGGCCCAGCACAAAGCT,, 467,M55153,,20,514,CCCAGCACAAAGCTGGATCC,, 468,M55153,,20,508,ACAAAGCTGGATCCCTGGTA,, 469,M55153,,20,502,CTGGATCCCTGGTAGCCAGT,, 470,M55153,,20,496,CCCTGGTAGCCAGTGGAGGC,, 471,M55153,,20,490,TAGCCAGTGGAGGCCTCCAG,, 472,M55153,,20,484,GTGGAGGCCTCCAGGCTGAG,, 75 473,M55153,,20,478,GCCTCCAGGCTGAGGCGATA,,

474,M55153,,20,472,AGGCTGAGGCGATACAGGCC,, 475,M55153,,20,466,AGGCGATACAGGCCGATGGG., 476,M55153,,20,460,TACAGGCCGATGGGGGCGTT,, 477,M55153,,20,454,CCGATGGGGGCGTTGGCCGG,, 478,M55153,,20,448,GGGGCGTTGGCCGGGGTGGT,, 479,M55153,,20,442,TTGGCCGGGGTGGTGAGCTG,,480,M55153,,20,436,GGGGTGGTGAGCTGCAGCGA, 481,M55153,,20,430,GTGAGCTGCAGCGAGAGGGT,, 482,M55153,,20,424,TGCAGCGAGAGGGTGCAGTC,, 483,M55153,,20,418,GAGAGGGTGCAGTCTTGCTG,, 10 484,M55153,,20,412,GTGCAGTCTTGCTGGTCCAC,, 485,M55153,,20,406,TCTTGCTGGTCCACCACGGT,, 486,M55153,,20,400,TGGTCCACCACGGTGGCTGT, 487,M55153,,20,394,ACCACGGTGGCTGTCCAGTC,, 15 488,M55153,,20,388,GTGGCTGTCCAGTCACCCTC,, 489,M55153,,20,382,GTCCAGTCACCCTCCTCCAC,, 490,M55153,,20,376,TCACCCTCCACAGCATC,, 491,M55153,,20,370,TCCTCCACAGCATCTCTTAG,, 492,M55153,,20,364,ACAGCATCTCTTAGTGGAAA,, 20 493,M55153,,20,358,TCTCTTAGTGGAAAACGGGC,, 494,M55153,,20,352,AGTGGAAAACGGGCCTTGGT,, 495,M55153,,20,346,AAACGGGCCTTGGTCCCGGC,, 496,M55153,,20,340,GCCTTGGTCCCGGCCTCCTG,, 497,M55153,,20,334,GTCCCGGCCTCCTGGCTAGG,, 25 498,M55153,,20,328,GCCTCCTGGCTAGGGGCTGG,, 499,M55153,,20,322,TGGCTAGGGGCTGGGCCGGT,, 500,M55153,,20,316,GGGGCTGGGCCGGTCACGAC,, 501,M55153,,20,310,GGGCCGGTCACGACACTGAA,, 502,M55153,,20,304,GTCACGACACTGAAGGTGAG,, 30 503,M55153,,20,298,ACACTGAAGGTGAGACTGTC,, 504,M55153,,20,292,AAGGTGAGACTGTCTACACT,, 505,M55153,,20,286,AGACTGTCTACACTGGCCTG,, 506,M55153,,20,280,TCTACACTGGCCTGGTAGTT,, 507,M55153,,20,274,CTGGCCTGGTAGTTGCGGCC,, 35 508,M55153,,20,268,TGGTAGTTGCGGCCCTCAAA,, 509,M55153,,20,262,TTGCGGCCCTCAAAGTGCAG,, 510,M55153,,20,256,CCCTCAAAGTGCAGGGTCAG,, 511,M55153,,20,250,AAGTGCAGGGTCAGCCAGAA,, 512,M55153,,20,244,AGGGTCAGCCAGAAGGGCTG,, 40 513,M55153,,20,238,AGCCAGAAGGGCTGGCCCCG,, 514,M55153,,20,232,AAGGGCTGGCCCGTCGCAC,, 515,M55153,,20,226,TGGCCCCGTCGCACCACCAG,, 516,M55153,,20,220,CGTCGCACCACCAGCTTCTC,, 517,M55153,,20,214,ACCACCAGCTTCTCCCGGCA,, 518,M55153,,20,208,AGCTTCTCCCGGCACAGGTC, 519,M55153,,20,202,TCCCGGCACAGGTCGGCCGT,, 520,M55153,,20,196,CACAGGTCGGCCGTGTGGTG, 521,M55153,,20,190,TCGGCCGTGTGGTGGTCTCG,, 522,M55153,,20,184,GTGTGGTGGTCTCGGCCATT,, 50 523,M55153,,20,178,TGGTCTCGGCCATTGGTCTC,, 524,M55153,,20,172,CGGCCATTGGTCTCCAGCTC,, 525,M55153,,20,166,TTGGTCTCCAGCTCCAGATC,, 526,M55153,,20,160,TCCAGCTCCAGATCACACCT,, 527,M55153,,20,154,TCCAGATCACACCTCTCTAA,, 528,M55153,,20,148,TCACACCTCTCTAAGACCAG,, 55 529,M55153,,20,142,CTCTCTAAGACCAGCTCCTC,, 530,M55153,,20,136,AAGACCAGCTCCTCGGCCAT,, 531,M55153,,20,130,AGCTCCTCGGCCATGGTCGG, 532,M55153,,20,124,TCGGCCATGGTCGGGGCGGG, 60 533,M55153,,20,118,ATGGTCGGGGCGGGGGGGGT,, 534,M55153,,20,112,GGGGCGGGGGGGGGTGGCTCC,, 535,M55153,,20,106,GGGGCGGTGGCTCCTTCCAC,, 536,M55153,,20,100,GTGGCTCCTTCCACTGGCGG,, 537,M55153,,20,94,CCTTCCACTGGCGGCCGAGA,, 538,M55153,,20,88,ACTGGCGGCCGAGACCCTCC,, 539,M55153,,20,82,GGCCGAGACCCTCCGTGAGA, 540,M55153,,20,76,GACCCTCCGTGAGATTTATG,, 541,M55153,,20,70,CCGTGAGATTTATGCTTTAA,, 542,M55153,,20,64,GATTTATGCTTTAAGGAGGT,, 543_M55153,,20,58,TGCTTTAAGGAGGTTCTATT., 544,M55153,,20,52,AAGGAGGTTCTATTTTGGTG,, 545,M55153,,20,46,GTTCTATTTTGGTGTACTTT,, 546,M55153,,20,40,TTTTGGTGTACTTTGAAGTT,, 547,M55153,,20,34,TGTACTTTGAAGTTTTGTTT, 75 548,M55153,,20,28,TTGAAGTTTTGTTTTC,,

549,M55153,,20,22,TTTTGTTTTGTTTCAAGTTT,, 550,M55153,,20,16,TTTGTTTCAAGTTTAGAACT,, 551,M55153,,20,10,TCAAGTTTAGAACTGGCGTC,, 552,M55153,,20,4,TTAGAACTGGCGTCACGCCT,, 554,BC002829,,20,733,TTTTTTTTTTTTTTTTCA,, 555,BC002829,,20,727,TTTTTTTTTTTTCAACAGAC,, 556,BC002829,,20,721,TTTTTTCAACAGACAAAAA,, 557,BC002829,,20,715,CAACAGACAAAAAAAGTTTA,, 558,BC002829,,20,709,ACAAAAAAAGTTTATTGAAT,, 559,BC002829,,20,703,AAAGTTTATTGAATACAAAA,, 10 560,BC002829,,20,697,TATTGAATACAAAACTCAAA,, 561,BC002829,,20,691,ATACAAAACTCAAAGGCATC,, 562,BC002829,,20,685,AACTCAAAGGCATCAACAGT,, 563,BC002829,,20,679,AAGGCATCAACAGTCCTGGG,, 15 564,BC002829,,20,673,TCAACAGTCCTGGGCCCAAA,, 565,BC002829,,20,667,GTCCTGGGCCCAAAAGATCC,, 566,BC002829,,20,661,GGCCCAAAAGATCCATGGCA,, 567,BC002829,,20,655,AAAGATCCATGGCAGGAAGT,, 20 568,BC002829,,20,649,CCATGGCAGGAAGTCAAGAG,, 569,BC002829,,20,643,CAGGAAGTCAAGAGTTCTGC,, 570,BC002829,,20,637,GTCAAGAGTTCTGCTTCAGG,, 571,BC002829,,20,631,AGTTCTGCTTCAGGGTCGGT,, 572,BC002829,,20,625,GCTTCAGGGTCGGTCTGGGC,, 573,BC002829,,20,619,GGGTCGGTCTGGGCAGCCCT.. 25 574,BC002829,,20,613,GTCTGGGCAGCCCTGGAAGA,, 575,BC002829,,20,607,GCAGCCCTGGAAGAAGTCAT,, 576,BC002829,,20,601,CTGGAAGAAGTCATTGCACA,, 577,BC002829,,20,595,GAAGTCATTGCACATGACAG,, 578,BC002829,,20,589,ATTGCACATGACAGTGATGA;, 579,BC002829,,20,583,CATGACAGTGATGAGTGCCA,, 580,BC002829,,20,577,AGTGATGAGTGCCAGGAAAA,, 581,BC002829,,20,571,GAGTGCCAGGAAAACAGCAT,, 582,BC002829,,20,565,CAGGAAAACAGCATACTCCT,, 35 583,BC002829,,20,559,AACAGCATACTCCTGGAAGT,, 584,BC002829,,20,553,ATACTCCTGGAAGTCCACCT,, 585,BC002829,,20,547,CTGGAAGTCCACCTGCTGGT,, 586,BC002829,,20,541,GTCCACCTGCTGGTCACTGT, 587,BC002829,,20,535,CTGCTGGTCACTGTTCTCAT, 40 588,BC002829,,20,529,GTCACTGTTCTCATCCAGGC,, 589,BC002829,,20,523,GTTCTCATCCAGGCTGCCCA,, 590,BC002829,,20,517,ATCCAGGCTGCCCATCAGCT,,591,BC002829,,20,511,GCTGCCCATCAGCTTCTTCA,, .592,BC002829,,20,505,CATCAGCTTCTTCAGCCCCT,, 45 593,BC002829,,20,499,CTTCTTCAGCCCCTCCTCAT,, 594,BC002829,,20,493,CAGCCCCTCCTCATCCACTT,, 595,BC002829,,20,487,CTCCTCATCCACTTTCTCCC,, 596,BC002829,,20,481,ATCCACTTTCTCCCCCACAA,, 597,BC002829,,20,475,TTTCTCCCCCACAAAGCTGG,, 50 598,BC002829,,20,469,CCCCACAAAGCTGGGCAGCT,, 599,BC002829,,20,463,AAAGCTGGGCAGCTCCTTGT,, 600,BC002829,,20,457,GGGCAGCTCCTTGTGCAGAA,, 601,BC002829,,20,451,CTCCTTGTGCAGAAGTTCCT,, 602,BC002829,,20,445,GTGCAGAAGTTCCTTCATTT,, 55 603,BC002829,,20,439,AAGTTCCTTCATTTCCCCCT,, 604,BC002829,,20,433,CTTCATTTCCCCCTTACTCA,, 605,BC002829,,20,427,TTCCCCCTTACTCAGCTTGA,, 606,BC002829,20,421,CTTACTCAGCTTGAACTTGT, 607,BC002829,,20,415,CAGCTTGAACTTGTCGCCCT,, 60 608,BC002829,,20,409,GAACTTGTCGCCCTCTTGGC,, 609,BC002829,,20,403,GTCGCCCTCTTGGCAGGAGT,, 610,BC002829,,20,397,CTCTTGGCAGGAGTACTTGT,, 611,BC002829,,20,391,GCAGGAGTACTTGTGGAAGG,, 612,BC002829,,20,385,GTACTTGTGGAAGGTAGTGA,, 65 613,BC002829,,20,379,GTGGAAGGTAGTGACCAGCA,, 614,BC002829,,20,373,GGTAGTGACCAGCACAGCCA,, 615,BC002829,,20,367,GACCAGCACAGCCAGCGCCT,, 616,BC002829,20,361,CACAGCCAGCGCCTGCTCCA, 617,BC002829,20,355,CAGCGCCTGCTCCAGAGAAC, 70 618,BC002829,,20,349,CTGCTCCAGAGAACTGCACA,, 619,BC002829,,20,343,CAGAGAACTGCACATCATGG,, 620,BC002829,,20,337,ACTGCACATCATGGATCTGT,, 621,BC002829,,20,331,CATCATGGATCTGTGGCAGA,, 622,BC002829,,20,325,GGATCTGTGGCAGACCAGGT,, 623,BC002829,,20,319,GTGGCAGACCAGGTGGCAGA,, 75

624,BC002829,,20,313,GACCAGGTGGCAGAGACAGA,, 625,BC002829,,20,307,GTGGCAGAGACAGACCCAGG,, 626,BC002829,,20,301,GAGACAGACCCAGGAAGGAG,, 627,BC002829,,20,295,GACCCAGGAAGGAGAGCAAG,, 628,BC002829,,20,289,GGAAGGAGAGCAAGGCAGCC,, 629,BC002829,,20,283,AGAGCAAGGCAGCCAGGCTC,, 630,BC002829,,20,277,AGGCAGCCAGGCTCCCAGGG, 631,BC002829,,20,271,CCAGGCTCCCAGGGTGAGGA,, 632,BC002829,,20,265,TCCCAGGGTGAGGATTTATA,, 633,BC002829,,20,259,GGTGAGGATTTATATGTGGG,, 634,BC002829,,20,253,GATTTATATGTGGGCCCCAC,, 635,BC002829,,20,247,TATGTGGGCCCCACTGGCCC,, 636,BC002829,,20,241,GGCCCCACTGGCCCCCAACT,, 637,BC002829,,20,235,ACTGGCCCCCAACTTGGCAT,, 638,BC002829,,20,229,CCCCAACTTGGCATTTTAAG,, 15 639,BC002829,,20,223,CTTGGCATTTTAAGGAAACC,, 640,BC002829,20,217,ATTTTAAGGAAACCAAACCT, 641,BC002829,20,211,AGGAAACCAAACCTGCCTCA, 642,BC002829,20,205,CCAAACCTGCCTCAACCTGA 20 643,BC002829,,20,199,CTGCCTCAACCTGATCCCAC,, 644,BC002829,,20,193,CAACCTGATCCCACCAAACC,, 645,BC002829,,20,187,GATCCCACCAAACCCTGGCC,, 646,BC002829,,20,181,ACCAAACCCTGGCCTCTTGC,, 647,BC002829,,20,175,CCCTGGCCTCTTGCCATTCC,, 648,BC002829,,20,169,CCTCTTGCCATTCCCACTCA,, 649,BC002829,,20,163,GCCATTCCCACTCATTCCCT., 650,BC002829,,20,167,CCCACTCATTCCCTCCAGC., 651,BC002829,,20,151,CATTCCCTCCCAGCCCCCTC,, 652,BC002829,,20,145,CTCCCAGCCCCTCCCTCCC,, 653,BC002829,,20,139,GCCCCTCCCTCCCAGAGAG... 654,BC002829,,20,133,TCCCTCCCAGAGAGTGCCAG,, 655,BC002829,,20,127,CCAGAGAGTGCCAGCTCCAC,, 656,BC002829,,20,121,AGTGCCAGCTCCACCACCAG,, 657,BC002829,,20,115,AGCTCCACCACCAGCTGGGG,,658,BC002829,,20,109,ACCACCAGCTGGGGAGGGC,, 35 659,BC002829,,20,103,AGCTGGGGGAGGGCTCTAGG,, 660,BC002829,,20,97,GGGAGGGCTCTAGGCCAGGT,, 661,BC002829,,20,91,GCTCTAGGCCAGGTCAAGGG,, 662,BC002829,,20,85,GGCCAGGTCAAGGGCAGCCC,, 40 663,BC002829,,20,79,GTCAAGGGCAGCCCCTGAGC,, 664,BC002829,,20,73,GGCAGCCCCTGAGCCCACCC,, 665,BC002829,,20,67,CCCTGAGCCCACCCAGGCCA,, 666,BC002829,,20,61,GCCCACCCAGGCCACAGTGG,, 667,BC002829,,20,55,CCAGGCCACAGTGGGAAGTG,, 45 668,BC002829,,20,49,CACAGTGGGAAGTGGGAGGT,, 669,BC002829,,20,43,GGGAAGTGGGAGGTGTCGTG,, 670,BC002829,,20,37,TGGGAGGTGTCGTGGGGACT,, 671,BC002829,,20,31,GTGTCGTGGGGACTGGGCAT,, 672,BC002829,,20,25,TGGGGACTGGGCATCCTGGA,, 50 673,BC002829,,20,19,CTGGGCATCCTGGACCGGGG,, 674,BC002829,,20,13,ATCCTGGACCGGGGTGAGGG, 675,BC002829,,20,7,GACCGGGGTGAGGGAGCCT, 676,BC002829,,20,1,GGTGAGGGGAGCCTCGTGCC,, 677,NM_003155,,20,3882,TTTTTTTTTTTTTTTTTTTTT, 678,NM_003155,,20,3876,TTTTTTTTTTTTTTTGAAACC,, 679,NM_003155,,20,3870,TTTTTTTTTGAAACCAATAAA, 680,NM_003155,,20,3864,TTGAAACCAATAAAACGTAA,, 681,NM_003155,,20,3858,CCAATAAAACGTAACACTTT,, 682,NM_003155,,20,3852,AAACGTAACACTTTATTATT,, 683,NM_003155,,20,3846,AACACTTTATTATTATTTTT,, 60 684,NM_003155,,20,3840,TTATTATTATTTTTATCTTA,, 685,NM 003155,,20,3834,TTATTTTTATCTTAGAAGGA,, 686,NM_003155,,20,3828,TTATCTTAGAAGGAATTCAC,, 687,NM_003155,,20,3822,TAGAAGGAATTCACCAAAGG,, 65 688,NM_003155,,20,3816,GAATTCACCAAAGGCTTCAT,, 689,NM_003155,,20,3810,ACCAAAGGCTTCATATTATG,, 690,NM_003155,,20,3804,GGCTTCATATTATGCTATGG, 691,NM_003155,,20,3798,ATATTATGCTATGGCATCTT, 692,NM_003155,,20,3792,TGCTATGGCATCTTTAATTA, 70 693,NM_003155,,20,3786,GGCATCTTTAATTATAAAAA,, 694,NM_003155,,20,3780,TTTAATTATAAAAAAATAAGC,, 695,NM_003155,,20,3774,TATAAAAAATAAGCAAATAA, 696,NM_003155,,20,3768,AAATAAGCAAATAAAATAAC,, 697,NM_003155,,20,3762,GCAAATAAAATAACTTGCAT,, 75 698,NM_003155,,20,3756,AAAATAACTTGCATCTGTCA,,

699,NM_003155,,20,3750,ACTTGCATCTGTCATTACCA,, 700,NM_003155,,20,3744,ATCTGTCATTACCATGATAT,, 701,NM_003155,,20,3738,CATTACCATGATATGTTTCA,, 702,NM_003155,,20,3732,CATGATATGTTTCATAACCT,, 703,NM_003155,,20,3726,ATGTTTCATAACCTTTATAT,, 704,NM_003155,,20,3720,CATAACCTTTATATGCACAT,, 705,NM_003155,,20,3714,CTTTATATGCACATGGAGCT,, 706,NM_003155,,20,3708,ATGCACATGGAGCTTAAAAA,, 707,NM_003155,,20,3702,ATGGAGCTTAAAAAAATGTAA,, 708,NM_003155,,20,3696,CTTAAAAAAATGTAATTTAAC,, 10 709,NM_003155,,20,3690,AAATGTAATTTAACAATAAA,, 710,NM_003155,,20,3684,AATTTAACAATAAATAATGA,, 711,NM_003155,,20,3678,ACAATAAATAATGACATATA,, 712,NM_003155,,20,3672,AATAATGACATATACCAGAT,, 15 713,NM_003155,,20,3666,GACATATACCAGATATGCTC,, 714,NM_003155,,20,3660,TACCAGATATGCTCACTGTT,, 715,NM_003155,,20,3654,ATATGCTCACTGTTTATTCC,, 716,NM_003155,,20,3648,TCACTGTTTATTCCAGTACT, 717,NM_003155,,20,3642,TTTATTCCAGTACTCAGCCA,, 718,NM_003155,,20,3636,CCAGTACTCAGCCAAAAACC,,719,NM_003155,,20,3630,CTCAGCCAAAAACCTAAATA,720,NM_003155,,20,3624,CAAAAACCTAAATATCATTT, 20 721,NM_003155,,20,3618,CCTAAATATCATTTAAATTA,, 722,NM_003155,,20,3612,TATCATTTAAATTATAAATA,,,723,NM_003155,,20,3606,TTAAATTATAAATACATAAT,, 25 724,NM_003155,,20,3600,TATAAATACATAATGCAAAT,, 725,NM_003155,,20,3594,TACATAATGCAAATATAATG,, 726,NM_003155,,20,3588,ATGCAAATATAATGGCACAA,, 727,NM_003155,,20,3582,ATATAATGGCACAAAAATGT,, 30 728,NM_003155,,20,3576,TGGCACAAAAATGTCTAAAG,, 729,NM_003155,,20,3570,AAAAATGTCTAAAGTGCAAC,, 730,NM_003155,,20,3554,GTCTAAAGTGCAACCAAATC,, 731,NM_003155,,20,3558,AGTGCAACCAAATCACAAGA,, 732,NM_003155,,20,3552,ACCAAATCACAAGAGAAGAA, 35 733,NM_003155,,20,3546,TCACAAGAGAAGAATCATGC,, 734,NM_003155,,20,3540,GAGAAGAATCATGCAAACTG,, 735,NM_003155,,20,3534,AATCATGCAAACTGGTCTAG,, 736,NM_003155,,20,3528,GCAAACTGGTCTAGGTCAGC,, 737,NM_003155,,20,3522,TGGTCTAGGTCAGCCCCCGA,, 40 738,NM_003155,,20,3516,AGGTCAGCCCCCGAATCACT,, 739,NM_003155,,20,3510,GCCCCGAATCACTCTGCAG,, 740,NM_003155,,20,3504,GAATCACTCTGCAGCAAACA,, 741,NM_003155,,20,3498,CTCTGCAGCAAACACAAGAC,, 742,NM_003155,,20,3492,AGCAAACACAAGACGAAGCT,, 45 743,NM_003155,,20,3486,CACAAGACGAAGCTTTGGAA,, 744,NM_003155,,20,3480,ACGAAGCTTTGGAAGTTTAA,, 745,NM_003155,,20,3474,CTTTGGAAGTTTAAGGGGGG,, 746,NM_003155,,20,3468,AAGTTTAAGGGGGGAATTGG,, 747,NM_003155,,20,3462,AAGGGGGGAATTGGAGGGAG,, 748,NM_003155,,20,3456,GGAATTGGAGGGAGTAGGGT, 50 749,NM_003155,,20,3450,GGAGGGAGTAGGGTGGGGGA,, 750,NM 003155,,20,3444,AGTAGGGTGGGGGAAAGAGA,, 751,NM_003155,,20,3438,GTGGGGGAAAGAAGAAGAAAA, 752,NM_003155,,20,3432,GAAAGAGAAGAAAAACTA,, 753,NM_003155,,20,3426,GAAGCAAAAAACTAGCAACA,, 55 754,NM_003155,,20,3420,AAAAACTAGCAACATGTGAG,, 755,NM_003155,,20,3414,TAGCAACATGTGAGAACTGC,, 756,NM_003155,,20,3408,CATGTGAGAACTGCTTCTTT, 757,NM_003155,,20,3402,AGAACTGCTTCTTTCTGTAT,, 60 758,NM_003155,,20,3396,GCTTCTTTCTGTATGTGTAG,, 759,NM_003155,,20,3390,TTCTGTATGTGTAGATATAT,, 760,NM_003155,,20,3384,ATGTGTAGATATATGTATTG,, 761,NM_003155,,20,3378,AGATATATGTATTGTAGATA,, 762,NM_003155,,20,3372,ATGTATTGTAGATACATATA,, 763,NM_003155,,20,3366,TGTAGATACATATATAGATA,, 65 764,NM_003155,,20,3360,TACATATATAGATATCATCG,, 765,NM_003155,,20,3354,TATAGATATCATCGTGGGGA,, 766,NM_003155,,20,3348,TATCATCGTGGGGAGAAAAG,, 767,NM_003155,,20,3342,CGTGGGGAGAAAAGGGGGGGG,, 768,NM_003155,,20,3336,GAGAAAAGGGGGGGGTACCAC,, 769,NM_003155,,20,3330,AGGGGGGGGTACCACGGTTTG,, 70 770,NM_003155,,20,3324,GGTACCACGGTTTGAAGAGG,, 771,NM_003155,,20,3318,ACGGTTTGAAGAGGTCACAG,, 772,NM_003155,,20,3312,TGAAGAGGTCACAGCCAAAA,, 75 773,NM_003155,,20,3306,GGTCACAGCCAAAAAAAAAA,,

774,NM_003155,,20,3300,AGCCAAAAAAAAAAAAAAAAA,, 775,NM_003155,,20,3294,AAAAAAAAAAAAAAAAAAAAA,, 776,NM_003155,,20,3288,AAAAAAAAAAAAAAAAAGAAAAG,, 777,NM_003155,20,3282,AAAAAAAAAGAAAAGAAAAAA, 778,NM_003155,20,3276,AAGAAAAGAAAAAAGGAAAAT, 779,NM_003155,,20,3270,AGAAAAAAGGAAATCTACTG,, 780,NM_003155,,20,3264,AAGGAAATCTACTGAACTGA,, 781,NM_003155,,20,3258,ATCTACTGAACTGAAGAAAG,, 782,NM_003155,,20,3252,TGAACTGAAGAAAGAGAAA, 10 783,NM_003155,,20,3246,GAAGAAAGAGAGAAATTTGC,, 784,NM_003155,,20,3240,AGAGAGAAATTTGCTAGGAA,, 785,NM_003155,,20,3234,AAATTTGCTAGGAATACTCA,, 786,NM_003155,,20,3228,GCTAGGAATACTCATGAACT,, 787,NM_003155,,20,3222,AATACTCATGAACTACTTGT,, 788,NM_003155,,20,3216,CATGAACTACTTGTCGCATT,, 789,NM_003155,,20,3210,CTACTTGTCGCATTGGGGTC,, 790,NM_003155,,20,3204,GTCGCATTGGGGTCCTGGCT,, 791,NM_003155,,20,3198,TTGGGGTCCTGGCTTAGTTG,, 792,NM_003155,,20,3192,TCCTGGCTTAGTTGGGTTTG,,793,NM_003155,,20,3186,CTTAGTTGGGTTTGCAAAAT, 20 794,NM_003155,,20,3180,TGGGTTTGCAAAATGGACAC,, 795,NM 003155,,20,3174,TGCAAAATGGACACACACA., 796,NM_003155,,20,3168,ATGGACACACACACAAACT,, 797,NM_003155,,20,3162,ACAACACACAAACTTTAATA,, 25 798,NM_003155,,20,3156,CACAAACTTTAATAGCTTTT,, 799,NM 003155,,20,3150,CTTTAATAGCTTTTCTGATT,, 800,NM_003155,,20,3144,TAGCTTTTCTGATTCAGAGA,, 801,NM_003155,,20,3138,TTCTGATTCAGAGAAGTCAG,, 802,NM_003155,,20,3132,TTCAGAGAAGTCAGCCTTGC,, 30 803,NM_003155,,20,3126,GAAGTCAGCCTTGCCTGGGG,, 804,NM_003155,,20,3120,AGCCTTGCCTGGGGTGGGA,, 805,NM_003155,,20,3114,GCCTGGGGTGGGAAGTGTG,, 806,NM_003155,,20,3108,GGGTGGGAAGTGTGGGAGGG,, 807,NM_003155,,20,3102,GAAGTGTGGGAGGGAGGGGA,, 808,NM_003155,,20,3096,TGGGAGGGAGGGAAGAGTC,,809,NM_003155,,20,3090,GGAGGGGAAGAGTCTAACTT,, 35 810,NM_003155,,20,3084,GAAGAGTCTAACTTAGAATA,, 811,NM_003155,,20,3078,TCTAACTTAGAATATGGTCT,, 812,NM_003155,,20,3072,TTAGAATATGGTCTACCTGA,, 813,NM_003155,,20,3066,TATGGTCTACCTGATTTCCA,, 814,NM_003155,,20,3060,CTACCTGATTTCCAAGAGGC,, 815,NM_003155,,20,3054,GATTTCCAAGAGGCTAAGGC,, 816,NM_003155,,20,3048,CAAGAGGCTAAGGCAGTGTC,, 817,NM_003155,,20,3042,GCTAAGGCAGTGTCCATAAG, 45 818,NM_003155,,20,3036,GCAGTGTCCATAAGTTTGGG,, 819,NM_003155,,20,3030,TCCATAAGTTTGGGGACCTG,, 820,NM_003155,,20,3024,AGTTTGGGGACCTGGGGATG, 821,NM_003155,,20,3018,GGGACCTGGGGATGGGACAG,, 822,NM_003155,,20,3012,TGGGGATGGGACAGTTCTGA,, 50 823,NM_003155,,20,3006,TGGGACAGTTCTGAGTATAA,, 824,NM_003155,,20,3000,AGTTCTGAGTATAAAAATGC,, 825,NM_003155,,20,2994,GAGTATAAAAATGCCCTTAA,, 826,NM_003155,,20,2988,AAAAATGCCCTTAACAATCT,, 827,NM_003155,,20,2982,GCCCTTAACAATCTGATGTC,, 55 828,NM_003155,,20,2976,AACAATCTGATGTCAGCACG,, 829,NM_003155,,20,2970,CTGATGTCAGCACGCTTAGA,, 830,NM_003155,,20,2964,TCAGCACGCTTAGAGGCTGT,, 831,NM_003155,,20,2958,CGCTTAGAGGCTGTGTGGGG,, 832,NM_003155,,20,2952,GAGGCTGTGTGGGGACAAAG,, 833,NM_003155,,20,2946,GTGTGGGGACAAAGGCAGCA,, 834,NM_003155,,20,2940,GGACAAAGGCAGCAATGTTT,, 835,NM_003155,,20,2934,AGGCAGCAATGTTTGTGCTG,, 836,NM_003155,,20,2928,CAATGTTTGTGCTGCTGCTG,, 837,NM_003155,,20,2922,TTGTGCTGCTGCTGCTGCTG, 838,NM_003155,,20,2916,TGCTGCTGCTGCTGGTT,, 65 839,NM_003155,,20,2910,TGCTGCTGCTGGGTCTGCTG,, 840,NM_003155,,20,2904,TGCTGGGTCTGCTGCAATTG,, 841,NM_003155,,20,2898,GTCTGCTGCAATTGCTCTTG,, 842,NM_003155,,20,2892,TGCAATTGCTCTTGGTCCTT,, 70 843,NM_003155,,20,2886,TGCTCTTGGTCCTTGAGCAG,, 844,NM_003155,,20,2880,TGGTCCTTGAGCAGCACGTT,, 845,NM_003155,,20,2874,TTGAGCAGCACGTTACTGGT,, 846,NM_003155,,20,2868,AGCACGTTACTGGTTTTAAA,, 847,NM_003155,,20,2862,TTACTGGTTTTAAAGGCTTT,, 848,NM_003155,,20,2856,GTTTTAAAGGCTTTATGGTA,,

849,NM_003155,,20,2850,AAGGCTTTATGGTAAAGTTG,, 850,NM_003155,,20,2844,TTATGGTAAAGTTGTATTGC,,, 851,NM_003155,,20,2838,TAAAGTTGTATTGCTTTTCA,, 852,NM_003155,,20,2832,TGTATTGCTTTTCATTTTTC,, 853,NM_003155,,20,2826,GCTTTTCATTTTTCTGGAGA,, 854,NM_003155,,20,2820,CATTTTTCTGGAGATGTGCC,, 855,NM_003155,,20,2814,TCTGGAGATGTGCCCTCTCT, 856,NM_003155,,20,2808,GATGTGCCCTCTCTCCCC,, 857,NM_003155,,20,2802,CCCTCTCTCCCCACCAGG,, 858,NM_003155,,20,2796,CTCCTCCCACCAGGATCCCT,, 859,NM_003155,,20,2790,CCACCAGGATCCCTATCACT,, 860,NM_003155,,20,2784,GGATCCCTATCACTCGATTT,, 861,NM_003155,,20,2778,CTATCACTCGATTTGGTCAA,, 862,NM_003155,,20,2772,CTCGATTTGGTCAAATCTTG,, 15 863,NM_003155,,20,2766,TTGGTCAAATCTTGAGTTTA,, 864,NM_003155,,20,2760,AAATCTTGAGTTTAGCCTAG,, 865,NM_003155,,20,2754,TGAGTTTAGCCTAGTGAGAG, 866,NM_003155,,20,2748,TAGCCTAGTGAGAGTCGAGC, 867,NM_003155,,20,2742,AGTGAGAGTCGAGCACCAAT, 20 868,NM_003155,,20,2736,AGTCGAGCACCAATAGTTTC,, 869,NM_003155,,20,2730,GCACCAATAGTTTCTACCTA,, 870,NM_003155,,20,2724,ATAGTTTCTACCTAAGCGAG,, 871,NM_003155,,20,2718,TCTACCTAAGCGAGTTTGGA,, 872,NM_003155,,20,2712,TAAGCGAGTTTGGAGTGGCC,, 873,NM_003155,,20,2706,AGTTTGGAGTGGCCCCTGCA,, 874,NM_003155,,20,2700,GAGTGGCCCCTGCAGTCCTA,, 25 875,NM_003155,,20,2694,CCCCTGCAGTCCTACCCCTC,, 876,NM_003155,,20,2688,CAGTCCTACCCCTCCTCCT, 877,NM_003155,,20,2682,TACCCCTCCTCTCTCTCTC,, 878,NM_003155,,20,2676,TCCTCCCTCTCTCTCTCTC, 30 879,NM_003155,,20,2670,CTCTCTTCCTCTTGACAT,, 880,NM_003155,,20,2664,TCCTCTCTTGACATTGACCT,, 881,NM_003155,,20,2658,CTTGACATTGACCTTTGGTG,, 882,NM_003155,,20,2652,ATTGACCTTTGGTGGGCAGT,, 883,NM_003155,,20,2646,CTTTGGTGGCCAGTGACGCT,, 35 884,NM_003155,,20,2640,TGGGCAGTGACGCTCATAAG,, 885,NM_003155,,20,2634,GTGACGCTCATAAGGGACTG,, 886,NM_003155,,20,2628,CTCATAAGGGACTGTTGGGT, 887,NM_003155,,20,2622,AGGGACTGTTGGGTTCAAGG, 40 888,NM_003155,,20,2616,TGTTGGGTTCAAGGACAGTG,, 889,NM_003155,,20,2610,GTTCAAGGACAGTGACCCTG,, 890,NM_003155,,20,2604,GGACAGTGACCCTGAGAAAC,, 891,NM_003155,,20,2598,TGACCCTGAGAAACTACTGT,, 892,NM_003155,,20,2592,TGAGAAACTACTGTTGTTCA,, 45 893,NM_003155,,20,2586,ACTACTGTTGTTCATAGATA,, 894,NM_003155,,20,2580,GTTGTTCATAGATAGGTTAG,, 895,NM_003155,,20,2574,CATAGATAGGTTAGTCGTTT,, 896,NM_003155,,20,2568,TAGGTTAGTCGTTTGACTTT,, 897,NM_003155,,20,2562,AGTCGTTTGACTTTGGTGGT,, 898,NM_003155,,20,2556,TTGACTTTGGTGGTCGCCAT,, 899,NM_003155,,20,2550,TTGGTGGTCGCCATCTTGTA,, 50 900,NM_003155,,20,2544,GTCGCCATCTTGTAAACATC,, 901,NM_003155,,20,2538,ATCTTGTAAACATCATGGCA,, 902,NM_003155,,20,2532,TAAACATCATGGCAGAAATG,, 55 903,NM_003155,,20,2526,TCATGGCAGAAATGATCAAA,, 904,NM_003155,,20,2520,CAGAAATGATCAAACCACCA,, 905,NM_003155,,20,2514,TGATCAAACCACCAGCTCTT,, 906,NM_003155,20,2508,AACCACCAGCTCTTTTTCCC, 907,NM_003155,20,2502,CAGCTCTTTTTCCCTCTTTC, 60 908,NM_003155,,20,2496,TTTTTCCCTCTTTCTTTCTT,, 909,NM_003155,,20,2490,CCTCTTTCTTTCTTTTTTT,, 910,NM_003155,,20,2484,TCTTTCTTTTTTTTTTTTTTT,, 911,NM_003155,,20,2478,TTTTTTTTTTTTTTTTTTT, 912,NM_003155,,20,2472,TTTTCTTTTTTTCTATTTTT,, 65 913,NM_003155,,20,2466,TTTTTTCTATTTTTTTACGA,, 914,NM_003155,,20,2460,CTATTTTTTTTACGATCCTAC,, 915,NM_003155,,20,2454,TTTTACGATCCTACAGAGAT,, 916,NM_003155,,20,2448,GATCCTACAGAGATGGTCCA,, 917,NM_003155,,20,2442,ACAGAGATGGTCCAGCTGCC,, 70 918,NM_003155,,20,2436,ATGGTCCAGCTGCCAGGACT,, 919,NM_003155,,20,2430,CAGCTGCCAGGACTACTTTG,, 920,NM_003155,,20,2424,CCAGGACTACTTTGGCAGGC,, 921,NM_003155,,20,2418,CTACTTTGGCAGGCAGCGTG,, 922,NM_003155,,20,2412,TGGCAGGCAGCGTGCTACAG,, 75 923,NM_003155,,20,2406,GCAGCGTGCTACAGGACGAA,,

924,NM_003155,,20,2400,TGCTACAGGACGAAAATGTA,, 925,NM 003155,,20,2394,AGGACGAAAATGTAAGAGAA,, 926,NM_003155,,20,2388,AAAATGTAAGAGAAGTCTAT,, 927,NM_003155,,20,2382,TAAGAGAAGTCTATTAAGGC,, 928,NM_003155,,20,2376,AAGTCTATTAAGGCTGGACA,, 929,NM_003155,,20,2370,ATTAAGGCTGGACAGCCCAG,, 930,NM_003155,,20,2364,GCTGGACAGCCCAGGGTTAT,, 931,NM_003155,,20,2358,CAGCCCAGGGTTATTTATAC,, 932,NM_003155,,20,2352,AGGGTTATTTATACTCTCTC,, 933,NM_003155,,20,2346,ATTTATACTCTCTCAGCCCC,, 934,NM_003155,,20,2340,ACTCTCTCAGCCCCAAGTCC,, 935,NM_003155,,20,2334,TCAGCCCCAAGTCCCCCGGA,, 936,NM_003155,,20,2328,CCAAGTCCCCCGGACTAAAG,, 937,NM_003155,,20,2322,CCCCGGACTAAAGACCTAA,, 938,NM_003155,,20,2316,GACTAAAGACCTAAAGGCTG,, 15 939,NM_003155,,20,2310,AGACCTAAAGGCTGATTGAC,, 940,NM_003155,,20,2304,AAAGGCTGATTGACTCATTC,, 941,NM_003155,,20,2298,TGATTGACTCATTCCTGATT,, 942,NM_003155,,20,2292,ACTCATTCCTGATTGATTTA,, 20 943,NM_003155,,20,2286,TCCTGATTGATTTAATGGAA,, 944,NM_003155,,20,2280,TTGATTTAATGGAAAGTCTC,, 945,NM_003155,,20,2274,TAATGGAAAGTCTCCCACCC,, 946,NM_003155,,20,2268,AAAGTCTCCCACCCATCAT,, 947,NM_003155,,20,2262,TCCCACCCCATCATCATTTG,, 25 948,NM_003155,,20,2256,CCCATCATCATTTGCCAGAG,, 949,NM_003155,,20,2250,ATCATTTGCCAGAGTACCAG,, 950,NM_003155,,20,2244,TGCCAGAGTACCAGGCACCG,, 951,NM_003155,,20,2238,AGTACCAGGCACCGATGAAA,, 952,NM 003155,,20,2232,AGGCACCGATGAAAGGGGAC,, 953,NM_003155,,20,2226,CGATGAAAGGGGACGAGTAA,, 954,NM_003155,,20,2220,AAGGGGACGAGTAAAGAACT,, 30 955,NM_003155,,20,2214,ACGAGTAAAGAACTACCACT,, 956,NM_003155,,20,2208,AAAGAACTACCACTTCCTAA,, 957,NM_003155,,20,2202,CTACCACTTCCTAATGTATA,, 35 958,NM_003155,,20,2196,CTTCCTAATGTATAGTAGGC,, 959,NM_003155,,20,2190,AATGTATAGTAGGCCTTATC,, 960,NM_003155,,20,2184,TAGTAGGCCTTATCACACTG,, 961,NM_003155,,20,2178,GCCTTATCACACTGTAAGTG,, 962,NM_003155,,20,2172,TCACACTGTAAGTGGTCCAA,, 40 963,NM_003155,,20,2166,TGTAAGTGGTCCAAGCCCAT,, 964,NM_003155,,20,2160,TGGTCCAAGCCCATAGGGAT,, 965,NM_003155,,20,2154,AAGCCCATAGGGATGCTCTT,, 966,NM_003155,,20,2148,ATAGGGATGCTCTTTTTGGT,, 967,NM_003155,,20,2142,ATGCTCTTTTTGGTTCCTGG, 45 968,NM_003155,,20,2136,TTTTTGGTTCCTGGAATTTC,, 969,NM_003155,,20,2130,GTTCCTGGAATTTCCAGTTG,, 970,NM_003155,,20,2124,GGAATTTCCAGTTGGATGTG,, 971,NM_003155,,20,2118,TCCAGTTGGATGTGACAGAG, 972,NM_003155,,20,2112,TGGATGTGACAGAGATCTTT,, 973,NM_003155,,20,2106,TGACAGAGATCTTTCAGTAT,, 50 974,NM_003155,,20,2100,AGATCTTTCAGTATAGGTCT,, 975,NM_003155,,20,2094,TTCAGTATAGGTCTAAGTCA, 976,NM_003155,,20,2088,ATAGGTCTAAGTCAAGAGTA,, 977,NM_003155,,20,2082,CTAAGTCAAGAGTAGCCTCT,, 978,NM_003155,,20,2076,CAAGAGTAGCCTCTGGGTTG,, 979,NM_003155,,20,2070,TAGCCTCTGGGTTGAGGTGG,, 980,NM_003155,,20,2064,CTGGGTTGAGGTGGGCTGGG,, 981,NM_003155,,20,2058,TGAGGTGGGCTGGGAGATTA,, 982,NM_003155,,20,2052,GGGCTGGGAGATTAACATCT,, 60 983,NM_003155,,20,2046,GGAGATTAACATCTTACCTG,, 984,NM_003155,,20,2040,TAACATCTTACCTGGGGTCC,, 985,NM_003155,,20,2034,CTTACCTGGGGTCCTTCAGA,, 986,NM_003155,,20,2028,TGGGGTCCTTCAGATAAACC,, 987,NM_003155,,20,2022,CCTTCAGATAAACCTGTTGG,, 988,NM_003155,,20,2016,GATAAACCTGTTGGTTTTTC,, 65 989,NM_003155,,20,2010,CCTGTTGGTTTTTCCTGTCT,, 990,NM_003155,,20,2004,GGTTTTTCCTGTCTCATACA,, 991,NM_003155,,20,1998,TCCTGTCTCATACAGGCCCA,, 992,NM_003155,,20,1992,CTCATACAGGCCCATCITAA,, 993,NM_003155,,20,1986,CAGGCCCATCTTAAGTTTTG,, 70 994,NM_003155,,20,1980,CATCTTAAGTTTTGATGTTG,, 995,NM_003155,,20,1974,AAGTTTTGATGTTGAATTAA,, 996,NM_003155,,20,1968,TGATGTTGAATTAAAACTAC,, 997,NM_003155,,20,1962,TGAATTAAAACTACTTCTAC,, 998,NM_003155,,20,1956,AAAACTACTTCTACCCCCTT,, 75

999,NM_003155,,20,1950,ACTTCTACCCCCTTAGTTAT,, 1000,NM_003155,,20,1944,ACCCCCTTAGTTATAAAAAA,, 1001,NM_003155,,20,1938,TTAGTTATAAAAAAGGCCAC,, 1002,NM_003155,,20,1932,ATAAAAAAGGCCACAAGGAG,, 1003,NM_003155,,20,1926,AAGGCCACAAGGAGCATTTA,, 1004,NM_003155,,20,1920,ACAAGGAGCATTTATGTGGA,, 5 1005,NM_003155,,20,1914,AGCATTTATGTGGATATCTG,, 1006,NM_003155,,20,1908,TATGTGGATATCTGGAAGTG,, 1007,NM_003155,,20,1902,GATATCTGGAAGTGAGATAG,, 10 1008,NM_003155,,20,1896,TGGAAGTGAGATAGTTATTC,, 1009,NM_003155,,20,1890,TGAGATAGTTATTCCATTCC,, 1010,NM_003155,,20,1884,AGTTATTCCATTCCCAGGAA,, 1011,NM_003155,,20,1878,TCCATTCCCAGGAAAAGAAA, 1012,NM_003155,,20,1872,CCCAGGAAAAGAAAAATAAA,, 15 1013,NM_003155,,20,1866,AAAAGAAAAATAAAGCTAAG,, 1014,NM_003155,,20,1860,AAAATAAAGCTAAGTTACAA,, 1015,NM_003155,,20,1854,AAGCTAAGTTACAAAACTAA,; 1016,NM_003155,,20,1848,AGTTACAAAACTAAATCTAT,, 1017,NM 003155,,20,1842,AAAACTAAATCTATATGCAA,, 1018,NM_003155,,20,1836,AAATCTATATGCAATAAAGT,, 1019,NM_003155,,20,1830,ATATGCAATAAAGTTATTAT,, 20 1020,NM_003155,,20,1824,AATAAAGTTATTATATACTG,, 1021,NM_003155,,20,1818,GTTATTATATACTGCTTTGT,, 1022,NM_003155,,20,1812,ATATACTGCTTTGTTTAAGC,, 1023,NM_003155,,20,1806,TGCTTTGTTTAAGCAGAGTC,, 25 1024,NM_003155,,20,1800,GTTTAAGCAGAGTCCTCTGG,, 1025,NM_003155,,20,1794,GCAGAGTCCTCTGGAATTTA,, 1026,NM_003155,,20,1788,TCCTCTGGAATTTATGTACA,, 1027,NM_003155,,20,1782,GGAATTTATGTACAGTACAT,, 30 1028,NM_003155,,20,1776,TATGTACAGTACATTAGTTT,, 1029,NM_003155,,20,1770,CAGTACATTAGTTTTCAGCT,, 1030,NM_003155,,20,1764,ATTAGTTTTCAGCTATTTAT,, 1031,NM_003155,,20,1758,TTTCAGCTATTTATATTCCA,, 1032,NM_003155,,20,1752,CTATTTATATTCCACAGTTA,, 35 1033,NM_003155,,20,1746,ATATTCCACAGTTAGACCTT,, 1034,NM_003155,,20,1740,CACAGTTAGACCTTAAGATT,, 1035,NM_003155,,20,1734,TAGACCTTAAGATTCTCTGG,, 1036,NM_003155,,20,1728,TTAAGATTCTCTGGTTTTAA,, 1037,NM_003155,,20,1722,TTCTCTGGTTTTAAGACAAT,, 1038,NM_003155,,20,1716,GGTTTTAAGACAATTGTTAA,, 1039,NM_003155,,20,1710,AAGACAATTGTTAAAGATAC,, 40 1040,NM_003155,,20,1704,ATTGTTAAAGATACTTTTAA,, 1041,NM_003155,,20,1698,AAAGATACTTTTAAAGCTCT,, 1042,NM_003155,,20,1692,ACTTTTAAAGCTCTGAGCAG,, 1043,NM_003155,,20,1686,AAAGCTCTGAGCAGTTACAG,, 1044,NM_003155,,20,1680,CTGAGCAGTTACAGTACGTA,, 45 1045,NM_003155,,20,1674,AGTTACAGTACGTAAAGATG,, 1046,NM_003155,,20,1668,AGTACGTAAAGATGTTAGCT,, 1047,NM_003155,,20,1662,TAAAGATGTTAGCTTTTTGT, 1048,NM_003155,,20,1656,TGTTAGCTTTTTGTTTTTCA, 1049,NM_003155,,20,1650,CTTTTTGTTTTTCATTAGAT, 50 1050,NM_003155,,20,1644,GTTTTTCATTAGATGCAAGA, 1051,NM_003155,,20,1638,CATTAGATGCAAGAAGATGC,, 1052,NM_003155,,20,1632,ATGCAAGAAGATGCAGGCTC,, 55 1053,NM_003155,,20,1626,GAAGATGCAGGCTCAAAGTC,, 1054,NM_003155,,20,1620,GCAGGCTCAAAGTCTGGTTG,, 1055,NM_003155,20,1614,TCAAAGTCTGGTTGGACAGC,, 1056,NM_003155,20,1608,TCTGGTTGGACAGCCAGGCT,, 1057,NM_003155,20,1602,TGGACAGCCAGGCTCAAGCA, 60 1058,NM 003155,,20,1596,GCCAGGCTCAAGCAATTTGG,, 1059,NM_003155,,20,1590,CTCAAGCAATTTGGTAAATG,, 1060,NM_003155,,20,1584,CAATTTGGTAAATGTGTCGG,, 1061,NM_003155,,20,1578,GGTAAATGTGTCGGAAAGAA,, 1062,NM 003155,,20,1572,TGTGTCGGAAAGAAAATTAG,, 1063,NM_003155,,20,1566,GGAAAGAAAATTAGACATTG, 1064,NM_003155,,20,1560,AAAATTAGACATTGGAGGAT, 1065,NM_003155,,20,1554,AGACATTGGAGGATCAAGAC, 1066,NM_003155,,20,1548,TGGAGGATCAAGACCATAAG,, 1067,NM_003155,,20,1542,ATCAAGACCATAAGACACTA,, 1068,NM_003155,,20,1536,ACCATAAGACACTAGCTCAT,, 70 1069,NM_003155,,20,1530,AGACACTAGCTCATTAGAGA,, 1070,NM_003155,,20,1524,TAGCTCATTAGAGATCAAGA,, 1071,NM_003155,,20,1518,ATTAGAGATCAAGAATTCAA,, 1072,NM_003155,,20,1512,GATCAAGAATTCAAATGTGA,, 75 1073,NM_003155,,20,1506,GAATTCAAATGTGACATTCA,,

1074,NM_003155,,20,1500,AAATGTGACATTCATATTCG,, 1075,NM_003155,,20,1494,GACATTCATATTCGTCCATG,, 1076,NM_003155,,20,1488,CATATTCGTCCATGGCCAGC,, 1077,NM_003155,,20,1482,CGTCCATGGCCAGCACAGAT,, 1078,NM_003155,,20,1476,TGGCCAGCACAGATTCATAA,, 1079,NM_003155,,20,1470,GCACAGATTCATAACACGAA,, 1080,NM_003155,,20,1464,ATTCATAACACGAATTCCAT,, 1081,NM_003155,,20,1458,AACACGAATTCCATTTAACA,, 1082,NM_003155,,20,1452,AATTCCATTTAACATCTTTA,, 1083,NM_003155,,20,1446,ATTTAACATCTTTATGAGCA,, 10 1084,NM_003155,,20,1440,CATCTTTATGAGCATTTAAG,, 1085,NM_003155,,20,1434,TATGAGCATTTAAGACATGC,, 1086,NM_003155,,20,1428,CATTTAAGACATGCATTTAA,, 1087,NM_003155,,20,1422,AGACATGCATTTAAATAAAG,, 15 1088,NM_003155,,20,1416,GCATTTAAATAAAGTTTCCT,, 1089,NM_003155,,20,1410,AAATAAAGTTTCCTTATCAG,, 1090,NM_003155,,20,1404,AGTTTCCTTATCAGCTAACT,, 1091,NM_003155,,20,1398,CTTATCAGCTAACTCTACTG,, 1092,NM_003155,,20,1392,AGCTAACTCTACTGGGGCAA,, 20 1093,NM_003155,,20,1386,CTCTACTGGGGCAACCGTTC,, 1094,NM_003155,,20,1380,TGGGGCAACCGTTCTAAAGG,, 1095,NM_003155,,20,1374,AACCGTTCTAAAGGGATCCA,, 1096,NM_003155,,20,1368,TCTAAAGGGATCCACATCTT,, 1097,NM_003155,,20,1362,GGGATCCACATCTTCAAATT,, 1098,NM_003155,,20,1356,CACATCTTCAAATTACAATG,, 25 1099,NM_003155,,20,1350,TTCAAATTACAATGGCTGGA,, 1100,NM_003155,,20,1344,TTACAATGGCTGGAGAGTTA,, 1101,NM_003155,,20,1338,TGGCTGGAGAGTTACATGAA,, 1102,NM_003155,,20,1332,GAGAGTTACATGAATGTTTT,, 30 1103,NM_003155,,20,1326,TACATGAATGTTTTGTGTTT,, 1104,NM_003155,,20,1320,AATGTTTTGTGTTTTGGGGGT,, 1105,NM_003155,,20,1314,TTGTGTTTGGGGGTGGTCTC,, 1106,NM_003155,,20,1308,TTGGGGGTGGTCTCAGGGGA,, 1107,NM_003155,,20,1302,GTGGTCTCAGGGGAGCAGGG,, 35 1108,NM_003155,,20,1296,TCAGGGGAGCAGGGGAAAAG,, 1109,NM_003155,,20,1290,GAGCAGGGGAAAAGACATGG,, 1110,NM_003155,,20,1284,GGGAAAAGACATGGCAGAGG,, 1111,NM_003155,,20,1278,AGACATGGCAGAGGAAGTTG,, 1112,NM_003155,,20,1272,GGCAGAGGAAGTTGGTAAAA,, 40 1113,NM_003155,,20,1266,GGAAGTTGGTAAAAGAGGGT,, 1114,NM_003155,,20,1260,TGGTAAAAGAGGGTACTTTC,, 1115,NM_003155,,20,1254,AAGAGGGTACTTTCTCCTGA,, 1116,NM_003155,,20,1248,GTACTTTCTCCTGAGGAGAG,, 1117,NM_003155,,20,1242,TCTCCTGAGGAGAGGCAGAA,, 45 1118,NM_003155,,20,1236,GAGGAGAGGCAGAATGATCA,, 1119,NM_003155,,20,1230,AGGCAGAATGATCACATGGA,, 1120,NM_003155,,20,1224,AATGATCACATGGATTTTGT,, 1121,NM_003155,,20,1218,CACATGGATTTTGTTGGTGG,, 1122,NM_003155,,20,1212,GATTTTGTTGGTGGGAATGC,, 50 1123,NM_003155,,20,1206,GTTGGTGGGAATGCTGCCAT,, 1124,NM_003155,,20,1200,GGGAATGCTGCCATTGCAGA,, 1125,NM_003155,,20,1194,GCTGCCATTGCAGAATGTTG,, 1126,NM_003155,,20,1188,ATTGCAGAATGTTGGGATAT,, 1127,NM_003155,,20,1182,GAATGTTGGGATATTGATTA,, 55 1128,NM_003155,,20,1176,TGGGATATTGATTACAGAAG,, 1129,NM_003155,,20,1170,ATTGATTACAGAAGCCTAGT,, 1130,NM_003155,,20,1164,TACAGAAGCCTAGTTTCATG,, 1131,NM_003155,,20,1158,AGCCTAGTTTCATGCAATTT,, 1132,NM_003155,,20,1152,GTTTCATGCAATTTTCTTTA,, 60 1133,NM_003155,,20,1146,TGCAATTTTCTTTAAGGGGG,, 1134,NM_003155,,20,1140,TTTCTTTAAGGGGGATAGAA,, 1135,NM_003155,,20,1134,TAAGGGGGATAGAAAATAGG,, 1136,NM_003155,,20,1128,GGATAGAAAATAGGAACTAC,, 1137,NM_003155,,20,1122,AAAATAGGAACTACTTTAAA,, 1138,NM_003155,,20,1116,GGAACTACTTTAAAAAAATC,, 1139,NM_003155,,20,1110,ACTTTAAAAAAATCAAACCA,, 1140,NM_003155,,20,1104,AAAAAATCAAACCAGGCACA,, 1141,NM_003155,,20,1098,TCAAACCAGGCACAGTACAC,, 1142,NM_003155,,20,1092,CAGGCACAGTACACTCAAAA,, 1143,NM_003155,,20,1086,CAGTACACTCAAAATTGGTG,, 1144,NM_003155,,20,1080,ACTCAAAATTGGTGTCAA,, 70 1145,NM_003155,,20,1074,AATTGGTGTGTCAACACCCC,, 1146,NM_003155,,20,1068,TGTGTCAACACCCCTAAAAT,, 1147,NM_003155,,20,1062,AACACCCCTAAAATGATACT,, 1148,NM_003155,,20,1056,CCTAAAATGATACTAGTTTG,, 75

1149,NM_003155,,20,1050,ATGATACTAGTTTGGTGAGG,, 1150,NM_003155,,20,1044,CTAGTTTGGTGAGGTTGTGA,, 1151,NM_003155,,20,1038,TGGTGAGGTTGTGAATAACC,, 1152,NM_003155,,20,1032,GGTTGTGAATAACCTCTCCC,, 1153,NM_003155,,20,1026,GAATAACCTCTCCCTGGTTA,, 1154,NM_003155,,20,1020,CCTCTCCCTGGTTATGCACT, 1155,NM 003155,,20,1014,CCTGGTTATGCACTCTCATG,, 1156,NM_003155,,20,1008,TATGCACTCTCATGGGATGT, 1157,NM_003155,,20,1002,CTCTCATGGGATGTGCGTTT,, 10 1158,NM_003155,,20,996,TGGGATGTGCGTTTGATGTG,, 1159,NM 003155,,20,990,GTGCGTTTGATGTGGGAGGG,, 1160,NM_003155,,20,984,TTGATGTGGGAGGGAGAGTC,, 1161,NM_003155,,20,978,TGGGAGGGAGAGTCCTCCTC,, 1162,NM 003155,,20,972,GGAGAGTCCTCCTCACCTCG,, 1163,NM_003155,,20,966,TCCTCCTCACCTCGGAGGTT,, 15 1164,NM_003155,,20,960,TCACCTCGGAGGTTCCTGAG,, 1165,NM_003155,,20,954,CGGAGGTTCCTGAGGAGGAC,, 1166,NM_003155,,20,948,TTCCTGAGGAGGACTTTCAG,, 1167,NM_003155,,20,942,AGGAGGACTTTCAGCTTCTG,, 1168,NM_003155,,20,936,ACTTTCAGCTTCTGCGGCTC,, 1169,NM_003155,,20,930,AGCTTCTGCGGCTCATTGGT,, 1170,NM_003155,,20,924,TGCGGCTCATTGGTGCGTCT,, 1171,NM_003155,,20,918,TCATTGGTGCGTCTCCTGTT,, 1172,NM_003155,,20,912,GTGCGTCTCCTGTTGAAGTC,, 25 1173,NM_003155,,20,906,CTCCTGTTGAAGTCAGCTCG,, 1174,NM_003155,,20,900,TTGAAGTCAGCTCGTGGGTG,, 1175,NM_003155,,20,894,TCAGCTCGTGGGTGTGTTTG,, 1176,NM_003155,,20,888,CGTGGGTGTGTTTGGGCACA,, 1177,NM_003155,,20,882,TGTGTTTGGGCACAGTGGTC,, 30 1178,NM 003155,,20,876,TGGGCACAGTGGTCTGTCTG,, 1179,NM_003155,,20,870,CAGTGGTCTGTCTGCAGGAT,, 1180,NM_003155,,20,864,TCTGTCTGCAGGATGTGGAA,, 1181,NM_003155,,20,858,TGCAGGATGTGGAAGAGGCT,, 1182,NM_003155,,20,852,ATGTGGAAGAGGCTGGCCAT,, 35 1183,NM_003155,,20,846,AAGAGGCTGGCCATGTTAGG,, 1184,NM_003155,,20,840,CTGGCCATGTTAGGCCCAAT,, 1185,NM_003155,,20,834,ATGTTAGGCCCAATTTTCTC,, 1186,NM_003155,,20,828,GGCCCAATTTTCTCCATCAG,, 1187,NM_003155,,20,822,ATTTTCTCCATCAGGCTGTC,, 40 1188,NM_003155,,20,816,TCCATCAGGCTGTCTCTGAT, 1189,NM_003155,,20,810,AGGCTGTCTCTGATTGTGCT,, 1190,NM_003155,,20,804,TCTCTGATTGTGCTGACTGT,, 1191,NM 003155,,20,798,ATTGTGCTGACTGTCTTC,, 1192,NM_003155,,20,792,CTGACTGTGTCTTCATCACA,, 1193,NM_003155,,20,786,GTGTCTTCATCACATTCCAG,, 45 1194,NM_003155,,20,780,TCATCACATTCCAGCAGGCT,, 1195,NM_003155,,20,774,CATTCCAGCAGGCTTCGGAC,, 1196,NM_003155,,20,768,AGCAGGCTTCGGACAAGTCT... 1197,NM_003155,,20,762,CTTCGGACAAGTCTGTTATA,, 50 1198,NM_003155,,20,756,ACAAGTCTGTTATAGTATCT,, 1199,NM_003155,,20,750,CTGTTATAGTATCTGTTGGA,, 1200,NM_003155,,20,744,TAGTATCTGTTGGAGAAGTG,, 1201,NM_003155,,20,738,CTGTTGGAGAAGTGATTGGG,, 1202,NM_003155,,20,732,GAGAAGTGATTGGGCAGCTG,, 55 1203,NM_003155,,20,726,TGATTGGGCAGCTGGACGAC,, 1204,NM_003155,,20,720,GGCAGCTGGACGACCTCAGT,, 1205,NM_003155,20,714,TGGACGACCTCAGTGATGGC,, 1206,NM_003155,20,708,ACCTCAGTGATGGCTTCAGG, 1207,NM_003155,,20,702,GTGATGGCTTCAGGGTTCCG,, 1208,NM_003155,,20,696,GCTTCAGGGTTCCGCTTGGC,, 60 1209,NM_003155,,20,690,GGGTTCCGCTTGGCGATGCT,, 1210,NM_003155,,20,684,CGCTTGGCGATGCTGCACAC,, 1211,NM_003155,,20,678,GCGATGCTGCACACATTCAG,, 1212,NM_003155,,20,672,CTGCACACATTCAGCTTGCT, 65 1213,NM_003155,,20,666,ACATTCAGCTTGCTGTAGCA,, 1214,NM_003155,,20,660,AGCTTGCTGTAGCACTCTTC,, 1215,NM_003155,,20,654,CTGTAGCACTCTTCCTGCAC,, 1216,NM_003155,,20,648,CACTCTTCCTGCACCTCAGC,, 1217,NM_003155,,20,642,TCCTGCACCTCAGCAATCAT,, 1218,NM_003155,,20,636,ACCTCAGCAATCATCCTTTG,, 70 1219,NM_003155,,20,630,GCAATCATCCTTTGGAAAGT,, 1220,NM_003155,,20,624,ATCCTTTGGAAAGTGGAGCA,, 1221,NM_003155,,20,618,TGGAAAGTGGAGCACCTCCG,, 1222,NM_003155,,20,612,GTGGAGCACCTCCGAATGGC,, 75 1223,NM_003155,,20,606,CACCTCCGAATGGCGAGGAA,,

1224,NM 003155,,20,600,CGAATGGCGAGGAAGACCTT., 1225,NM_003155,,20,594,GCGAGGAAGACCTTGGAGGT,, 1226,NM_003155,,20,588,AAGACCTTGGAGGTGACCCC,, 1227,NM_003155,,20,582,TTGGAGGTGACCCCGTTGGC,, 1228,NM_003155,,20,576,GTGACCCCGTTGGCGATGCA,, 1229,NM_003155,,20,570,CCGTTGGCGATGCATTTTAA,, 1230,NM_003155,,20,564,GCGATGCATTTTAAGCTCTC,, 1231,NM 003155,,20,558,CATTTTAAGCTCTCTTTGAC,, 1232,NM_003155,,20,552,AAGCTCTCTTTGACGAATGC,, 10 1233,NM_003155,,20,546,TCTTTGACGAATGCTTTTCC,, 1234,NM_003155,,20,540,ACGAATGCTTTTCCCTGAGT,, 1235,NM_003155,,20,534,GCTTTTCCCTGAGTGTCAAA,, 1236,NM_003155,,20,528,CCCTGAGTGTCAAATTTAGC,, 1237,NM_003155,,20,522,GTGTCAAATTTAGCAGCGCT,, 15 1238,NM_003155,,20,516,AATTTAGCAGCGCTGTACAA,, 1239,NM_003155,,20,510,GCAGCGCTGTACAAGAAGGA,, 1240,NM_003155,,20,504,CTGTACAAGAAGGATTTACA,, 1241,NM_003155,,20,498,AAGAAGGATTTACAGATGTC,, 1242,NM_003155,,20,492,GATTTACAGATGTCATACAT,, 1243,NM_003155,,20,486,CAGATGTCATACATCCCATC,, 1244,NM_003155,,20,480,TCATACATCCCATCTGTGTC,, 20 1245,NM_003155,,20,474,ATCCCATCTGTGTCACAGGT,, 1246,NM 003155,,20,468,TCTGTGTCACAGGTGGAGTT,, 1247,NM_003155,,20,462,TCACAGGTGGAGTTTTCCAG,, 25 1248,NM_003155,,20,456,GTGGAGTTTTCCAGGCATGC,, 1249,NM_003155,,20,450,TTTTCCAGGCATGCAAAAGC,, 1250,NM_003155,,20,444,AGGCATGCAAAAGCCCCGCA,, 1251,NM_003155,,20,438,GCAAAAGCCCCGCAGCCGAC,, 1252,NM_003155,,20,432,GCCCGCAGCCGACCTGTAG,, 30 1253,NM_003155,,20,426,CAGCCGACCTGTAGAGCACT,, 1254,NM_003155,,20,420,ACCTGTAGAGCACTGTTGAG,, 1255,NM_003155,,20,414,AGAGCACTGTTGAGGCAACG,, 1256,NM_003155,,20,408,CTGTTGAGGCAACGAACCAC,, 1257,NM_003155,,20,402,AGGCAACGAACCACTTCAGC,, 35 1258,NM_003155,,20,396,CGAACCACTTCAGCTGAGTT,, 1259,NM_003155,,20,390,ACTTCAGCTGAGTTTTGAGC,, 1260,NM_003155,,20,384,GCTGAGTTTTGAGCCGCCAC,, 1261,NM_003155,,20,378,TTTTGAGCCGCCACTCGGGA,, 1262,NM_003155,,20,372,GCCGCCACTCGGGATTTCCT,, 40 1263,NM_003155,,20,366,ACTCGGGATTTCCTGGGGCT,, 1264,NM_003155,,20,360,GATTTCCTGGGGCTCACAGA,, 1265,NM_003155,,20,354,CTGGGGCTCACAGAGTCATT,, 1266,NM_003155,,20,348,CTCACAGAGTCATTCTGCTC,, 1267,NM_003155,,20,342,GAGTCATTCTGCTCCGCCTC,, 1268,NM_003155,,20,336,TTCTGCTCCGCCTCATGGGT,, 1269,NM_003155,,20,330,TCCGCCTCATGGGTTGCAGA,, 1270,NM_003155,,20,324,TCATGGGTTGCAGAAGCACT,, 1271,NM 003155,,20,318,GTTGCAGAAGCACTGATCAC,, 1272,NM_003155,,20,312,GAAGCACTGATCACCAGCAC,, 1273,NM_003155,,20,306,CTGATCACCAGCACCAGAAG,, 50 1274,NM_003155,,20,300,ACCAGCACCAGAAGCACTGC,, 1275,NM 003155,,20,294,ACCAGAAGCACTGCTGAGTT,, 1276,NM_003155,,20,288,AGCACTGCTGAGTTTTGGAG,, 1277,NM_003155,,20,282,GCTGAGTTTTGGAGCATTCT,, 55 1278,NM_003155,,20,276,TTTTGGAGCATTCTCTGAGA,, 1279,NM_003155,,20,270,AGCATTCTCTGAGAAGTTTC,, 1280,NM_003155,,20,264,CTCTGAGAAGTTTCCGCTAA,, 1281,NM_003155,,20,258,GAAGTTTCCGCTAAGTTGTT,, 1282,NM_003155,,20,252,TCCGCTAAGTTGTTGGGTTT,, 60 1283,NM_003155,,20,246,AAGTTGTTGGGTTTTTTTTT,, 1284,NM_003155,,20,240,TTGGGTTTTTTTTTTTTCCT,, 1285,NM_003155,,20,234,TTTTTTTTTTCCTGCCCCC,, 1286,NM_003155,,20,228,TTTTTCCTGCCCCCCTTTCC, 1287,NM_003155,,20,222,CTGCCCCCCTTTCCTCTTTC,, 1288,NM_003155,,20,216,CCCTTTCCTCTTTCCCTCTC,, 1289,NM_003155,,20,210,CCTCTTTCCCTCTCCTGGCT,, 1290,NM_003155,,20,204,TCCCTCTCCTGGCTTGAGTG,, 1291,NM_003155,,20,198,TCCTGGCTTGAGTGAAGATG,, 1292,NM 003155,,20,192,CTTGAGTGAAGATGTGGATC,, 1293,NM_003155,,20,186,TGAAGATGTGGATCTGGATA,, 1294,NM_003155,,20,180,TGTGGATCTGGATACACIGA,, 70 1295,NM_003155,,20,174,TCTGGATACACTGAAAGCTT,, 1296,NM_003155,,20,168,TACACTGAAAGCTTAGGTGA,, 1297,NM_003155,,20,162,GAAAGCTTAGGTGAGGATTT,, 75 1298,NM_003155,,20,156,TTAGGTGAGGATTTGATGAG,,

1299,NM_003155,,20,150,GAGGATTTGATGAGGATTTT,, 1300,NM_003155,,20,144,TTGATGAGGATTTTTTTTTG,, 1301,NM_003155,,20,138,AGGATTTTTTTTTTTTTTGTTGTTG,, 1302,NM_003155,,20,132,TTTTTTTGTTGTTGTTGCTG,, 1303,NM_003155,,20,126,TGTTGTTGTTGCTGGTGATG, 1304,NM_003155,,20,120,TGTTGCTGGTGATGCTGCTG,, 1305,NM 003155,,20,114,TGGTGATGCTGCTGCCA,, 1306,NM_003155,,20,108,TGCTGCTGCTGCCACCGGTG,, 1307,NM_003155,20,102,TGCTGCCACCGGTGCCTCCG, 1308,NM_003155,20,96,CACCGGTGCCTCCGCTG.TG 10 1309,NM 003155,,20,90,TGCCTCCGCTGCTGCTGCTG,, 1310,NM_003155,,20,84,CGCTGCTGCTGCTGCCG,, 1311,NM_003155,,20,78,TGCTGCTGCTGCCGCCGCTG,, 1312,NM_003155,,20,72,TGCTGCCGCCGCTGCTGCTG,, 1313,NM 003155,,20,66,CGCCGCTGCTGCTGCTGCTG,, 1314,NM_003155,,20,60,TGCTGCTGCTGCCACCG,, 1315,NM_003155,,20,54,TGCTGCTGCCACCGCCGCTG,, 1316,NM_003155,,20,48,TGCCACCGCCGCTGCTGCTG, 1317,NM_003155,,20,42,CGCCGCTGCTGCTGCTGCTG, 1318,NM_003155,,20,36,TGCTGCTGCTGCTGCAG,, 20 1319,NM_003155,,20,30,TGCTGCTGCTGCAGTCGCTG, 1320,NM_003155,,20,24,TGCTGCAGTCGCTGCTTCTT,, 1321,NM_003155,,20,18,AGTCGCTGCTTCTTGCACCT,, 1322,NM_003155,,20,12,TGCTTCTTGCACCTCTGGCT,, 1323,NM_003155,,20,6,TTGCACCTCTGGCTTTTGCA,, 1324,NM_001814,,20,1819,GCAGTTATTTTTAAAACTTT,, 25 1325,NM_001814,,20,1813,ATTTTTAAAAACTTTATTTTA,, 1326,NM_001814,,20,1807,AAAACTTTATTTTAAAAATA,, 1327,NM_001814,,20,1801,TTATTTTAAAAATATGAGCA,, 1328,NM_001814,,20,1795,TAAAAATATGAGCATCTATT,, 30 1329,NM 001814,,20,1789,TATGAGCATCTATTTTAAAA,, 1330,NM_001814,,20,1783,CATCTATTTTAAAAGTTTTG,, 1331,NM_001814,,20,1777,TTTTAAAAGTTTTGATAATT,, 1332,NM_001814,,20,1771,AAGTTTTGATAATTATTGCC,, 35 1333,NM_001814,,20,1765,TGATAATTATTGCCATTATT,, 1334,NM_001814,,20,1759,TTATTGCCATTATTTTCTTG,, 1335,NM_001814,,20,1753,CCATTATTTCTTGTGATTG,, 1336,NM_001814,,20,1747,TTTTCTTGTGATTGGTACAA,, 1337,NM 001814,,20,1741,TGTGATTGGTACAATTTAAA,, 1338,NM_001814,,20,1735,TGGTACAATTTAAAAATAAG,, 40 1339,NM_001814,,20,1729,AATTTAAAAATAAGTCTATG,, 1340,NM_001814,,20,1723,AAAATAAGTCTATGTTTTCA,, 1341,NM_001814,,20,1717,AGTCTATGTTTTCACATTGA,, 1342,NM_001814,,20,1711,TGTTTTCACATTGATTTTAA,, 1343,NM_001814,,20,1705,CACATTGATTTTAAAAAATA,, 1344,NM_001814,,20,1699,GATTTTAAAAAAATATAGCAT,, 45 1345,NM_001814,,20,1693,AAAAAATATAGCATGTTTGA,, 1346,NM_001814,,20,1687,TATAGCATGTTTGAATTACA,, 1347,NM_001814,,20,1681,ATGTTTGAATTACAAATGAT,, 1348,NM_001814,,20,1675,GAATTACAAATGATTAAGCA,, 50 1349,NM_001814,,20,1669,CAAATGATTAAGCAAACTCT,, 1350,NM 001814,,20,1663,ATTAAGCAAACTCTATTACT,, 1351,NM_001814,,20,1657,CAAACTCTATTACTTCATAG,, 1352,NM_001814,,20,1651,CTATTACTTCATAGCTGACC, 1353,NM_001814,,20,1645,CTTCATAGCTGACCATCTTC,, 55 1354,NM 001814,,20,1639,AGCTGACCATCTTCCAGAAA,, 1355,NM_001814,,20,1633,CCATCTTCCAGAAAATTCCC,, 1356,NM_001814,,20,1627,TCCAGAAAATTCCCACTTAA,, 1357,NM_001814,,20,1621,AAATTCCCACTTAATTGAAT,, 1358,NM 001814,,20,1615,CCACTTAATTGAATACTTAG,, 1359,NM_001814,,20,1609,AATTGAATACTTAGAAAAAA,, 1360,NM_001814,,20,1603,ATACTTAGAAAAAAATGGCC,, 1361,NM_001814,,20,1597,AGAAAAAAATGGCCAGTGGC,, 1362,NM_001814,,20,1591,AAATGGCCAGTGGCCGATTG,, 65 1363,NM 001814,,20,1585,CCAGTGGCCGATTGAAAGGT,, 1364,NM_001814,,20,1579,GCCGATTGAAAGGTATATTA,, 1365,NM_001814,,20,1573,TGAAAGGTATATTAAAATTA,, 1366,NM 001814,,20,1567,GTATATTAAAATTAAGGGCA,, 1367,NM_001814,,20,1561,TAAAATTAAGGGCAGTTTTA,, 1368,NM_001814,,20,1555,TAAGGGCAGTTTTAATTCTG,, 1369,NM_001814,,20,1549,CAGTTTTAATTCTGAAGACA,, 70 1370,NM 001814,,20,1543,TAATTCTGAAGACAAATATC,, 1371,NM_001814,20,1537,TGAAGACAAATATCTTCATG,, 1372,NM_001814,20,1531,CAAATATCTTCATGGAAATC, 1373,NM_001814,,20,1525,TCTTCATGGAAATCTATTTG,,

1374,NM_001814,,20,1519,TGGAAATCTATTTGTAAGCT,, 1375,NM_001814,,20,1513,TCTATTTGTAAGCTTCTGAG,, 1376,NM_001814,,20,1507,TGTAAGCTTCTGAGATTGCT,, 1377,NM_001814,,20,1501,CTTCTGAGATTGCTGCTGAA,, 1378,NM_001814,,20,1495,AGATTGCTGCTGAAAGTCTA,, 1379,NM_001814,,20,1489,CTGCTGAAAGTCTACAGTCT,, 1380,NM_001814,,20,1483,AAAGTCTACAGTCTGTGAAT,, 1381,NM_001814,20,1477,TACAGTCTGTGAATATACCA,, 1382,NM_001814,20,1471,CTGTGAATATACCAATTCCC,, 10 1383,NM_001814,,20,1465,ATATACCAATTCCCCTTTAC,, 1384,NM_001814,,20,1459,CAATTCCCCTTTACAACTGA,, 1385,NM_001814,,20,1453,CCCTTTACAACTGATGCAGA,, 1386,NM_001814,,20,1447,ACAACTGATGCAGATCATTA,, 1387,NM 001814,,20,1441,GATGCAGATCATTATGAAAT,, 1388,NM_001814,,20,1435,GATCATTATGAAATACTGGA,, 1389,NM_001814,,20,1429,TATGAAATACTGGAAGGCAT,, 1390,NM_001814,,20,1423,ATACTGGAAGGCATACCCTA,, 1391,NM_001814,,20,1417,GAAGGCATACCCTACAATTT,, 1392,NM_001814,,20,1411,ATACCCTACAATTTAGGAAT,, 1393,NM_001814,,20,1405,TACAATTTAGGAATTGGTGT,, 1394,NM_001814,,20,1399,TTAGGAATTGGTGTGGCTGC,, 1395,NM_001814,,20,1393,ATTGGTGTGGCTGCCACTGC,, 1396,NM_001814,,20,1387,GTGGCTGCCACTGCTATGCT,, 1397,NM_001814,,20,1381,GCCACTGCTATGCTCTCAAT,, 25 1398,NM_001814,,20,1375,GCTATGCTCTCAATTGCACA,, 1399,NM_001814,,20,1369,CTCTCAATTGCACACTCATC,, 1400,NM_001814,,20,1363,ATTGCACACTCATCAGTTCC,, 1401,NM_001814,,20,1357,CACTCATCAGTTCCTCTGCG,, 1402,NM_001814,,20,1351,TCAGTTCCTCTGCGGATCCG,, 30 1403,NM_001814,,20,1345,CCTCTGCGGATCCGGAAGTA,, 1404,NM_001814,,20,1339,CGGATCCGGAAGTAGCCATT,, 1405,NM_001814,20,1333,CGGAAGTAGCCATTCTCACC,,1406,NM_001814,20,1327,TAGCCATTCTCACCCAGCC, 1407,NM_001814,,20,1321,TTCTCACCCCAGCCGGTGCC,, 35 1408,NM_001814,,20,1315,CCCCAGCCGGTGCCCCAGCT,, 1409,NM_001814,,20,1309,CCGGTGCCCCAGCTGTTTTT,, 1410,NM_001814,,20,1303,CCCCAGCTGTTTTTAACAAT,, 1411,NM_001814,,20,1297,CTGTTTTTAACAATCCAGTA,, 1412,NM 001814,,20,1291,TTAACAATCCAGTAATCCAT,, 1413,NM_001814,,20,1285,ATCCAGTAATCCATCCCAGA,, 1414,NM_001814,,20,1279,TAATCCATCCCAGAGGCTGA,, 40 1415,NM_001814,,20,1273,ATCCCAGAGGCTGAGTCAGT,, 1416,NM_001814,,20,1267,GAGGCTGAGTCAGTGCCATA,, 1417,NM_001814,,20,1261,GAGTCAGTGCCATAGCCCAC,, 1418,NM_001814,,20,1255,GTGCCATAGCCCACAAGCAG, 45 1419,NM_001814,,20,1249,TAGCCCACAAGCAGAACAGC,, 1420,NM_001814,,20,1243,ACAAGCAGAACAGCATGATT, 1421,NM_001814,,20,1237,AGAACAGCATGATTAGTCAG,, 1422,NM_001814,,20,1231,GCATGATTAGTCAGCTCAAA,, 1423,NM_001814,,20,1225,TTAGTCAGCTCAAAGGGGTT,, 50 1424,NM_001814,,20,1219,AGCTCAAAGGGGTTGAAAGG,, 1425,NM_001814,,20,1213,AAGGGGTTGAAAGGGTCTCT,, 1426,NM_001814,,20,1207,TTGAAAGGGTCTCTTAGACC,, 1427,NM_001814,,20,1201,GGGTCTCTTAGACCAGTGTG,, 55 1428,NM_001814,,20,1195,CTTAGACCAGTGTGGTGGTA,, 1429,NM 001814,,20,1189,CCAGTGTGGTGGTAGATCCC,, 1430,NM_001814,,20,1183,TGGTGGTAGATCCCCTTTTT,, 1431,NM_001814,,20,1177,TAGATCCCCTTTTTGTAGTG, 1432,NM_001814,,20,1171,CCCTTTTTGTAGTGGAGGAA,, 60 1433,NM_001814,,20,1165,TTGTAGTGGAGGAAGTCATC,, 1434,NM_001814,,20,1159,TGGAGGAAGTCATCATATAC,, 1435,NM_001814,,20,1153,AAGTCATCATATACTTCAAA,, 1436,NM_001814,,20,1147,TCATATACTTCAAAAGCAAC,, 1437,NM_001814,,20,1141,ACTTCAAAAGCAACTGCCAT,, 1438,NM_001814,,20,1135,AAAGCAACTGCCATGGGCCC,, 1439,NM_001814,,20,1129,ACTGCCATGGGCCCATGATG,, 65 1440,NM_001814,,20,1123,ATGGGCCCATGATGGACCAA,, 1441,NM 001814,,20,1117,CCATGATGGACCAACTCAAG,, 1442,NM_001814,,20,1111,TGGACCAACTCAAGCTTCAT,, 1443,NM_001814,,20,1105,AACTCAAGCTTCATCAGGGC,, 1444,NM_001814,,20,1099,AGCTTCATCAGGGCTTCATT,, 70 1445,NM_001814,,20,1093,ATCAGGGCTTCATTGCAGCC,, 1446,NM_001814,,20,1087,GCTTCATTGCAGCCTCCATA,, 1447,NM_001814,,20,1081,TTGCAGCCTCCATAGAAACC,, 75 1448,NM_001814,,20,1075,CCTCCATAGAAACCTCCTAC,,

1449,NM_001814,,20,1069,TAGAAACCTCCTACATAGTG,, 1450,NM_001814,,20,1063,CCTCCTACATAGTGGTACTC,, 1451,NM_001814,,20,1057,ACATAGTGGTACTCAGAGGA,, 1452,NM_001814,,20,1051,TGGTACTCAGAGGAGTAATA,, 1453,NM_001814,,20,1045,TCAGAGGAGTAATAACGAAA,, 1454,NM_001814,,20,1039,GAGTAATAACGAAAGCAGTC,, 1455,NM_001814,,20,1033,TAACGAAAGCAGTCTTCCTT,, 1456,NM_001814,,20,1027,AAGCAGTCTTCCTTCATTTT, 1457,NM_001814,,20,1021,TCTTCCTTCATTTTGCATGG, 1458,NM_001814,,20,1015,TTCATTTTGCATGGAGAATC, 10 1459,NM 001814,,20,1009,TTGCATGGAGAATCAGTGCC, 1460,NM_001814,,20,1003,GGAGAATCAGTGCCTGTGTA,, 1461,NM_001814,,20,997,TCAGTGCCTGTGTAGGGGAA,, 1462,NM_001814,,20,991,CCTGTGTAGGGGAAGCAAGC,, 15 1463,NM_001814,,20,985,TAGGGGAAGCAAGCTTCTTC,, 1464,NM_001814,,20,979,AAGCAAGCTTCTTCCACCAG,, 1465,NM_001814,,20,973,GCTTCTTCCACCAGCCCAAA,, 1466,NM_001814,,20,967,TCCACCAGCCCAAAATCTTG,, 1467,NM_001814,,20,961,AGCCCAAAATCTTGGGCGTA,, 20 1468,NM_001814,,20,955,AAATCTTGGGCGTACTTTCC,, 1469,NM_001814,,20,949,TGGGCGTACTTTCCTGCAAT,, 1470,NM_001814,,20,943,TACTTTCCTGCAATAAGGTA,, 1471,NM 001814,,20,937,CCTGCAATAAGGTATGGGAA., 1472,NM_001814,,20,931,ATAAGGTATGGGAAGCCGCC,, 25 1473,NM_001814,,20,925,TATGGGAAGCCGCCTTCACA,, 1474,NM_001814,,20,919,AAGCCGCCTTCACAGCCTTG,, 1475,NM 001814,,20,913,CCTTCACAGCCTTGAGCATA,, 1476,NM_001814,,20,907,CAGCCTTGAGCATACTGGCT,, 1477,NM_001814,,20,901,TGAGCATACTGGCTACAAGA,, 30 1478,NM_001814,,20,895,TACTGGCTACAAGACACAAC,, 1479,NM 001814,,20,889,CTACAAGACACAACCTCCTG,, 1480,NM_001814,,20,883,GACACAACCTCCTGAGGGCT,, 1481,NM_001814,,20,877,ACCTCCTGAGGGCTTAGGAT,, 1482,NM_001814,,20,871,TGAGGGCTTAGGATTGGGGT,, 35 1483,NM_001814,,20,865,CTTAGGATTGGGGTCTGAGA,, 1484,NM 001814,,20,859,ATTGGGGTCTGAGAATTGTT,, 1485,NM_001814,,20,853,GTCTGAGAATTGTTGGTTAG,, 1486,NM_001814,,20,847,GAATTGTTGGTTAGTATACG,, 1487,NM_001814,,20,841,TTGGTTAGTATACGGATTCT,, 40 1488,NM_001814,,20,835,AGTATACGGATTCTCGCTTC,, 1489,NM_001814,,20,829,CGGATTCTCGCTTCTAGCAT,, 1490,NM_001814,,20,823,CTCGCTTCTAGCATACCCAT,, 1491,NM_001814,,20,817,TCTAGCATACCCATAGAAGC,, 1492,NM_001814,,20,811,ATACCCATAGAAGCAAATGA,, 1493,NM_001814,,20,805,ATAGAAGCAAATGAGTAGCA,, 1494,NM_001814,,20,799,GCAAATGAGTAGCAGCTGCC,, 1495,NM_001814,,20,793,GAGTAGCAGCTGCCACAGGA,, 1496,NM_001814,,20,787,CAGCTGCCACAGGATGCTTG,, 1497,NM_001814,,20,781,CCACAGGATGCTTGGTTTCG,, 1498,NM_001814,,20,775,GATGCTTGGTTTCGAACAGG,, 50 1499,NM_001814,,20,769,TGGTTTCGAACAGGACTGAC,, 1500,NM_001814,,20,763,CGAACAGGACTGACAAAATT,, 1501,NM_001814,,20,757,GGACTGACAAAATTGATACC,, 1502,NM_001814,,20,751,ACAAAATTGATACCATGAAC,, 55 1503,NM_001814,,20,745,TTGATACCATGAACATTTCT,, 1504,NM_001814,,20,739,CCATGAACATTTCTCCAGTC,, 1505,NM_001814,,20,733,ACATTTCTCCAGTCCCAAGA,, 1506,NM_001814,,20,727,CTCCAGTCCCAAGATGTTGG,, 1507,NM_001814,,20,721,TCCCAAGATGTTGGCAAATG,, 1508,NM_001814,,20,715,GATGTTGGCAAATGCAAAAT,, 1509,NM_001814,,20,709,GGCAAATGCAAAATCTTTTG,, 1510,NM_001814,,20,703,TGCAAAATCTTTTGCTGTAT,, 1511,NM_001814,,20,697,ATCTTTTGCTGTATTTCAGC,, 1512,NM_001814,,20,691,TGCTGTATTTCAGCAGTCAG,, 1513,NM_001814,,20,685,ATTTCAGCAGTCAGTGGTGC,, 1514,NM_001814,,20,679,GCAGTCAGTGGTGCAGGTTT,, 1515,NM_001814,,20,673,AGTGGTGCAGGTTTGGGCCT,, 1516,NM_001814,,20,667,GCAGGTTTGGGCCTTGGGAT,, 1517,NM_001814,,20,661,TTGGGCCTTGGGATTTTTCG,, 1518,NM_001814,,20,655,CTTGGGATTTTTCGACTGTG,, 1519,NM_001814,,20,649,ATTTTTCGACTGTGGCCACC,, 1520,NM_001814,,20,643,CGACTGTGGCCACCACTTCT,, 1521,NM_001814,,20,637,TGGCCACCACTTCTCCTAAT,, 1522,NM_001814,,20,631,CCACTTCTCCTAATCATATC,, 1523,NM_001814,,20,625,CTCCTAATCATATCTCCCAG,, 75

1524,NM_001814,,20,619,ATCATATCTCCCAGGGTAAG,, 1525,NM_001814,,20,613,TCTCCCAGGGTAAGAGTCTC,, 1526,NM_001814,,20,607,AGGGTAAGAGTCTCATATTC, 1527,NM_001814,,20,601,AGAGTCTCATATTCCATGTA,, 1528,NM_001814,,20,595,TCATATTCCATGTATGTAGT,, 1529,NM_001814,,20,589,TCCATGTATGTAGTTGCAGT,, 1530,NM_001814,,20,583,TATGTAGTTGCAGTCCAAGA,, 1531,NM_001814,,20,577,GTTGCAGTCCAAGACTTCTG,, 1532,NM_001814,,20,571,GTCCAAGACTTCTGAATGGC,, 10 1533,NM_001814,,20,565,GACTTCTGAATGGCATTGAT,, 1534,NM_001814,,20,559,TGAATGGCATTGATAGCTTT,, 1535,NM_001814,,20,553,GCATTGATAGCTTTCACAAA,, 1536,NM_001814,,20,547,ATAGCTTTCACAAAGTTGTG,, 1537,NM_001814,,20,541,TTCACAAAGTTGTGATCATA,, 15 1538,NM_001814,,20,535,AAGTTGTGATCATACTTGTA,, 1539,NM_001814,,20,529,TGATCATACTTGTAGAGCCT,, 1540,NM 001814,,20,523,TACTTGTAGAGCCTATTAGA,, 1541,NM_001814,,20,517,TAGAGCCTATTAGAATACTT,, 1542,NM_001814,,20,511,CTATTAGAATACTTTTCCTG,, 20 1543,NM_001814,,20,505,GAATACTTTTCCTGAGAATT,, 1544,NM_001814,,20,499,TTTTCCTGAGAATTCTTAAG,, 1545,NM_001814,,20,493,TGAGAATTCTTAAGGTGTGC,, 1546,NM_001814,,20,487,TTCTTAAGGTGTGCTGTGTT,, 1547,NM_001814,20,481,AGGTGTGTGTGTTGACATA, 25 1548,NM_001814,,20,475,GCTGTGTTGACATACACATT,, 1549,NM_001814,,20,469,TTGACATACACATTCTCAGA,, 1550,NM_001814,,20,463,TACACATTCTCAGAGGCAGT,, 1551,NM_001814,,20,457,TTCTCAGAGGCAGTTCCCAC,, 1552,NM_001814,,20,451,GAGGCAGTTCCCACCTTCTT,, 1553,NM_001814,20,445,GTTCCCACCTTCTTTCCGGT,, 1554,NM_001814,20,439,ACCTTCTTTCCGGTGAAACA,, 30 1555,NM_001814,,20,433,TTTCCGGTGAAACAAGCCCA,, 1556,NM_001814,,20,427,GTGAAACAAGCCCAGTTCCG,, 1557,NM_001814,,20,421,CAAGCCCAGTTCCGGCCCAA,, 35 1558,NM_001814,,20,415,CAGTTCCGGCCCAACACATC,, 1559,NM_001814,,20,409,CGGCCCAACACATCATGCAC,, 1560,NM_001814,,20,403,AACACATCATGCACCCACCC,, 1561,NM_001814,,20,397,TCATGCACCCACCCAGTCAT,, 1562,NM_001814,,20,391,ACCCACCCAGTCATTGTCTC,, 1563,NM_001814,,20,385,CCAGTCATTGTCTCGTTGCA,, 40 1564,NM_001814,,20,379,ATTGTCTCGTTGCAGTAAGT,, 1565,NM_001814,,20,373,TCGTTGCAGTAAGTGGTCAC,, 1566,NM_001814,,20,367,CAGTAAGTGGTCACCTTGCT,, 1567,NM_001814,,20,361,GTGGTCACCTTGCTGCCCTC,, 45 1568,NM_001814,,20,355,ACCTTGCTGCCCTCTTCTTT,, 1569,NM 001814,,20,349,CTGCCCTCTTCTTTATACTT,, 1570,NM_001814,,20,343,TCTTCTTTATACTTAAAAAA,, 1571,NM_001814,,20,337,TTATACTTAAAAAAAGGCAAA,, 1572,NM_001814,,20,331,TTAAAAAAGGCAAACCACTT,, 50 1573,NM_001814,,20,325,AAGGCAAACCACTTGTAGTC,, 1574,NM_001814,,20,319,AACCACTTGTAGTCATTCAA,, 1575,NM_001814,,20,313,TTGTAGTCATTCAACACAAT,, 1576,NM_001814,,20,307,TCATTCAACACAATCTCAAA,, 1577,NM_001814,,20,301,AACACAATCTCAAAGCCTTG,, 1578,NM_001814,,20,295,ATCTCAAAGCCTTGGTTGTA,, 55 1579,NM_001814,,20,289,AAGCCTTGGTTGTAAATGAT,, 1580,NM_001814,,20,283,TGGTTGTAAATGATGGTGAA,, 1581,NM_001814,,20,277,TAAATGATGGTGAAATGGCC,, 1582,NM_001814,,20,271,ATGGTGAAATGGCCAGAATT,, 1583,NM_001814,,20,265,AAATGGCCAGAATTGCCAAG,, 1584,NM_001814,,20,259,CCAGAATTGCCAAGGTCATC,, 1585,NM_001814,,20,253,TTGCCAAGGTCATCATATGC,, 1586,NM_001814,,20,247,AGGTCATCATATGCTGTATC,, 1587,NM_001814,,20,241,TCATATGCTGTATCCAGCTT,, 1588,NM_001814,,20,235,GCTGTATCCAGCTTCTGAAG,, 65 1589,NM_001814,,20,229,TCCAGCTTCTGAAGGTACAC,, 1590,NM_001814,,20,223,TTCTGAAGGTACACCACTAC,, 1591,NM_001814,,20,217,AGGTACACCACTACTTTTTT,, 1592,NM_001814,,20,211,ACCACTACTTTTTTTCTTG,, 70 1593,NM_001814,,20,205,ACTTTTTTTTTTTTGTGGTCC,, 1594,NM_001814,,20,199,TTTTCTTGTGGTCCCATAAC,, 1595,NM_001814,,20,193,TGTGGTCCCATAACCGAGCA,, 1596,NM_001814,,20,187,CCCATAACCGAGCAGTTGAC,, 1597,NM_001814,,20,181,ACCGAGCAGTTGACATCGCG,, 1598,NM_001814,,20,175,CAGTTGACATCGCGCTGGGA,,

ŧ,

1599,NM_001814,,20,169,ACATCGCGCTGGGAACCGCT,, 1600,NM_001814,,20,163,CGCTGGGAACCGCTGGAGCC,, 1601,NM_001814,,20,157,GAACCGCTGGAGCCCACCTG,, 1602,NM 001814,,20,151,CTGGAGCCCACCTGGAAGAC,, 1603,NM_001814,,20,145,CCCACCTGGAAGACCCAGGT,, 1604,NM_001814,,20,139,TGGAAGACCCAGGTGCCCAG,, 1605,NM_001814,,20,133,ACCCAGGTGCCCAGCAGGTC,, 1606,NM_001814,,20,127,GTGCCCAGCAGGTCAAGATA,, 1607,NM_001814,,20,121,AGCAGGTCAAGATAGGTGCA,, 1608,NM_001814,,20,115,TCAAGATAGGTGCAGTTGGC,, 10 1609,NM_001814,,20,109,TAGGTGCAGTTGGCAGGTGT,, 1610,NM_001814,,20,103,CAGTTGGCAGGTGTGTCGCA,, 1611,NM_001814,,20,97,GCAGGTGTGTCGCAGCGCAC,, 1612,NM_001814,,20,91,GTGTCGCAGCGCACGGCGCC,, 1613,NM_001814,,20,85,CAGCGCACGGCGCCGTCGCC, 15 1614,NM 001814,,20,79,ACGGCGCCGTCGCCGGAGAG,, 1615,NM_001814,,20,73,CCGTCGCCGGAGAGAAGCAG,, 1616,NM_001814,,20,67,CCGGAGAGAAGCAGCAGGAG,, 1617,NM_001814,,20,61,AGAAGCAGCAGGAGGGCGGC,, 20 1618,NM_001814,,20,55,AGCAGGAGGGCGGCGAGCAG,, 1619,NM_001814,,20,49,AGGGCGGCGAGCAGCAAGGA,, 1620,NM_001814,,20,43,GCGAGCAGCAAGGAGGGCCC,, 1621,NM_001814,,20,37,AGCAAGGAGGGCCCAGCACC,, 1622,NM_001814,,20,31,GAGGGCCCAGCACCCATGCT,, 1623,NM_001814,,20,25,CCAGCACCCATGCTGCAGGG,, 25 1624,NM_001814,,20,19,CCCATGCTGCAGGGAGCTGA,, 1625,NM_001814,,20,13,CTGCAGGGAGCTGAGAAAAG,, 1626,NM_001814,,20,7,GGAGCTGAGAAAAGAGGTGA,, 1627,NM_001814,,20,1,GAGAAAAGAGGTGAAGAATT,, 1628,NM_012334,,20,7768,AGCTAGTATCTTTTATTGTC... 30 1629,NM_012334,,20,7762,TATCTTTTATTGTCAGAACT,, 1630,NM 012334,,20,7756,TTATTGTCAGAACTTCTGTG,, 1631,NM_012334,,20,7750,TCAGAACTTCTGTGAGCCAA,, 1632,NM_012334,,20,7744,CTTCTGTGAGCCAACAAACA,, 1633,NM_012334,,20,7738,TGAGCCAACAAACAGTTTTG,, 35 1634,NM_012334,,20,7732,AACAAACAGTTTTGCATGGT,, 1635,NM 012334,,20,7726,CAGTTTTGCATGGTTGTACA,, 1636,NM_012334,,20,7720,TGCATGGTTGTACACAAAGG,, 1637,NM_012334,,20,7714,GTTGTACACAAAGGGACAAG,, 40 1638,NM_012334,,20,7708,CACAAAGGGACAAGGCAAAT,, 1639,NM_012334,,20,7702,GGGACAAGGCAAATTTCTTT,, 1640,NM_012334,,20,7696,AGGCAAATTTCTTTTTCGT,, 1641,NM_012334,,20,7690,ATTTCTTTTTTCGTGTGGGT,, 1642,NM_012334,,20,7684,TTTTTCGTGTGGGTAGACTT,, 45 1643,NM_012334,,20,7678,GTGTGGGTAGACTTAGTTGG,, 1644,NM_012334,,20,7672,GTAGACTTAGTTGGCCCAAG,, 1645,NM_012334,,20,7666,TTAGTTGGCCCAAGTCCTTA,, 1646,NM_012334,,20,7660,GGCCCAAGTCCTTAAAACTT,, 1647,NM_012334,,20,7654,AGTCCTTAAAACTTTTCCAT,, 50 1648,NM 012334,,20,7648,TAAAACTTTTCCATATAAAA,, 1649,NM_012334,,20,7642,TTTTCCATATAAAAATAAAA,, 1650,NM_012334,,20,7636,ATATAAAAATAAAAAGTCCA,, 1651,NM_012334,,20,7630,AAATAAAAAGTCCAAGACCA,, 1652,NM 012334,,20,7624,AAAGTCCAAGACCAGATTAT,, 1653,NM_012334,,20,7618,CAAGACCAGATTATTTTCT,, 55 1654,NM_012334,,20,7612,CAGATTATTTTTCTTCTGGT,, 1655,NM_012334,,20,7606,ATTTTTCTTCTGGTCATAAA,, 1656,NM 012334,,20,7600,CTTCTGGTCATAAATGCTGA,, 1657,NM_012334,,20,7594,GTCATAAATGCTGATTTATT,, 60 1658,NM_012334,,20,7588,AATGCTGATTTATTTACAGG,, 1659,NM_012334,,20,7582,GATTTATTTACAGGTGCCTT,, 1660,NM 012334,,20,7576,TTTACAGGTGCCTTGTTCAG,, 1661,NM_012334,,20,7570,GGTGCCTTGTTCAGACCACC,, 1662,NM_012334,,20,7564,TTGTTCAGACCACCATTATA,, 65 1663,NM_012334,,20,7558,AGACCACCATTATAAACTTG,, 1664,NM_012334,,20,7552,CCATTATAAACTTGGGATAA,, 1665,NM_012334,,20,7546,TAAACTTGGGATAAAATATG,, 1666,NM_012334,,20,7540,TGGGATAAAATATGTGTGTA,, 1667,NM_012334,,20,7534,AAAATATGTGTGTATTAAAG,, 70 1668,NM 012334,,20,7528,TGTGTGTATTAAAGCCTCAG,, 1669,NM_012334,,20,7522,TATTAAAGCCTCAGCATTTA,, 1670,NM_012334,,20,7516,AGCCTCAGCATTTAATGTCA,, 1671,NM_012334,,20,7510,AGCATTTAATGTCAGGGTCC,, 1672,NM 012334,,20,7504,TAATGTCAGGGTCCTTTGAA,, 75 1673,NM_012334,,20,7498,CAGGGTCCTTTGAAGATTCA,,

1674,NM 012334,,20,7492,CCTTTGAAGATTCACTCAAG,, 1675,NM 012334,,20,7486,AAGATTCACTCAAGTGTTAA,, 1676,NM_012334,,20,7480,CACTCAAGTGTTAAGACGTT,, 1677,NM 012334,,20,7474,AGTGTTAAGACGTTTCTGGA,, 1678,NM_012334,,20,7468,AAGACGTTTCTGGAATGCAG,, 1679,NM_012334,,20,7462,TTTCTGGAATGCAGCGTCTC,, 1680,NM_012334,,20,7456,GAATGCAGCGTCTCTCCCCC,, 1681,NM_012334,,20,7450,AGCGTCTCTCCCCCATAGTC,, 1682,NM 012334,20,7444,TCTCCCCCATAGTCAACATG, 10 1683,NM_012334,,20,7438,CCATAGTCAACATGGTTATT,, 1684,NM_012334,,20,7432,TCAACATGGTTATTATATCT,, 1685,NM_012334,,20,7426,TGGTTATTATATCTGTAATC,, 1686,NM 012334,,20,7420,TTATATCTGTAATCTATCCA,, 1687,NM_012334,,20,7414,CTGTAATCTATCCAGAATGA,, 15 1688,NM_012334,,20,7408,TCTATCCAGAATGATAGAAG,, 1689,NM 012334,,20,7402,CAGAATGATAGAAGCTAACC,, 1690,NM_012334,,20,7396,GATAGAAGCTAACCTTCCAA,, 1691,NM_012334,,20,7390,AGCTAACCTTCCAAGTAACA,, 1692,NM_012334,,20,7384,CCTTCCAAGTAACACTTTGT,, 20 1693,NM 012334,,20,7378,AAGTAACACTTTGTTTTTAA,, 1694,NM_012334,,20,7372,CACTTTGTTTTTAACTTAAA,, 1695,NM_012334,,20,7366,GTTTTTAACTTAAATCTTTT,, 1696,NM_012334,,20,7360,AACTTAAATCTTTTAGACAT,, 1697,NM_012334,,20,7354,AATCTTTTAGACATGAAAGA,, 1698,NM_012334,,20,7348,TTAGACATGAAAGACTCCAA,, 1699,NM_012334,,20,7342,ATGAAAGACTCCAAAATGAC,, 1700,NM_012334,,20,7336,GACTCCAAAATGACTTCATT,, 1701,NM_012334,,20,7330,AAAATGACTTCATTCTTGTT,, 1702,NM_012334,,20,7324,ACTTCATTCTTGTTCTAAAA,, 30 1703,NM_012334,,20,7318,TTCTTGTTCTAAAACCAGCA,, 1704,NM_012334,,20,7312,TTCTAAAACCAGCACTGGAG,, 1705,NM 012334,,20,7306,AACCAGCACTGGAGCCAGCT, 1706,NM_012334,,20,7300,CACTGGAGCCAGCTGTTGAA,, 1707,NM_012334,,20,7294,AGCCAGCTGTTGAAGAGTGG,, 35 1708,NM_012334,,20,7288,CTGTTGAAGAGTGGTTTATA,, 1709,NM 012334,,20,7282,AAGAGTGGTTTATAAATACA,, 1710,NM_012334,,20,7276,GGTTTATAAATACAGTTATC,, 1711,NM_012334,,20,7270,TAAATACAGTTATCTTGTAG,, 1712,NM_012334,,20,7264,CAGTTATCTTGTAGGCTGCT,, 40 1713,NM_012334,,20,7258,TCTTGTAGGCTGCTTATCTG,, 1714,NM_012334,,20,7252,AGGCTGCTTATCTGTTTATA,, 1715,NM_012334,,20,7246,CTTATCTGTTTATAATACAG,, 1716,NM_012334,,20,7240,TGTTTATAATACAGCAGACA,, 1717,NM_012334,,20,7234,TAATACAGCAGACACAGATG,, 45 1718,NM_012334,,20,7228,AGCAGACAGATGGCAGAC,, 1719,NM_012334,,20,7222,CACAGATGGCAGACTTTGCT,,1720,NM_012334,,20,7216,TGGCAGACTTTGCTACATGT, 1721,NM_012334,,20,7210,ACTTTGCTACATGTAAAACA,, 1722,NM 012334,,20,7204,CTACATGTAAAACAATGGAG,, 1723,MM_012334,,20,7198,GTAAAACAATGGAGTCAACA,, 1724,NM_012334,,20,7192,CAATGGAGTCAACACGTGTT,, 1725,NM_012334,,20,7186,AGTCAACACGTGTTTTTCAA,, 1726,NM_012334,,20,7180,CACGTGTTTTTCAAAATACA,, 1727,NM_012334,,20,7174,TTTTTCAAAATACAGCAAAG,, 1728,NM_012334,,20,7168,AAAATACAGCAAAGACAGGA,, 55 1729,NM_012334,,20,7162,CAGCAAAGACAGGAAAATCC,, 1730,NM_012334,,20,7156,AGACAGGAAAATCCAGGATT,, 1731,NM_012334,,20,7150,GAAAATCCAGGATTTGGGTT,, 1732,NM_012334,,20,7144,CCAGGATTTGGGTTTGTTAA,, 1733,NM_012334,,20,7138,TTTGGGTTTGTTAATAAAAC,, 60 1734,NM 012334,,20,7132,TTTGTTAATAAAACCACCTT, 1735,NM_012334,,20,7126,AATAAAACCACCTTATAAAG,, 1736,NM_012334,,20,7120,ACCACCTTATAAAGTAACAA,, 1737,NM_012334,,20,7114,TTATAAAGTAACAATTGAGA,, 65 1738,NM 012334,,20,7108,AGTAACAATTGAGACTATAG,, 1739,NM_012334,,20,7102,AATTGAGACTATAGCTCTGC,, 1740,NM_012334,,20,7096,GACTATAGCTCTGCATTATT,, 1741,NM_012334,,20,7090,AGCTCTGCATTATTAAAATA,, 1742,NM_012334,,20,7084,GCATTATTAAAATATACAGA,, 1743,NM_012334,,20,7078,TTAAAATATACAGACTGTGT,, 1744,NM_012334,,20,7072,TATACAGACTGTGTACACCA,, 1745,NM_012334,,20,7066,GACTGTGTACACCATTACAC,, 1746,NM_012334,,20,7060,GTACACCATTACACATCCTT,, 1747 NM_012334,,20,7054,CATTACACATCCTTTTTCCC,, 1748.NM_012334,,20,7048,ACATCCTTTTTCCCTTTGCT,, 75

1749,NM_012334,,20,7042,TTTTTCCCTTTGCTTTTTAA., 1750,NM_012334,,20,7036,CCTTTGCTTTTTAATGCTCA,, 1751,NM_012334,,20,7030,CTTTTTAATGCTCATGAAAC,, 1752,NM_012334,,20,7024,AATGCTCATGAAACCATGAT,, 1753,NM_012334,,20,7018,CATGAAACCATGATTAAAGT,, 1754,NM_012334,,20,7012,ACCATGATTAAAGTGTTGAG,, 1755,NM_012334,,20,7006,ATTAAAGTGTTGAGTTTATG,, 1756,NM_012334,,20,7000,GTGTTGAGTTTATGAACACA,, 1757,NM_012334,,20,6994,AGTTTATGAACACATGCACG,, 10 1758,NM_012334,,20,6988,TGAACACATGCACGAACAGG,, 1759,NM_012334,,20,6982,CATGCACGAACAGGCAAGCA,, 1760,NM_012334,,20,6976,CGAACAGGCAAGCACGTACA,, 1761,NM_012334,,20,6970,GGCAAGCACGTACACTTAAA,, 1762,NM_012334,,20,6964,CACGTACACTTAAAAGATGA,, 15 1763,NM_012334,,20,6958,CACTTAAAAGATGAAACAAA,, 1764,NM 012334,,20,6952,AAAGATGAAACAAAGAAAAA,, 1765,NM_012334,,20,6946,GAAACAAAGAAAAAAGTTGA,, 1766,NM_012334,,20,6940,AAGAAAAAAGTTGATTCATG,, 1767,NM_012334,,20,6934,AAAGTTGATTCATGTCATTC,, 20 1768,NM_012334,,20,6928,GATTCATGTCATTCCATGAG,, 1769,NM_012334,,20,6922,TGTCATTCCATGAGAAAGGC,, 1770,NM_012334,,20,6916,TCCATGAGAAAGGCTGCCCG,, 1771,NM_012334,,20,6910,AGAAAGGCTGCCCGCAGCAC,, 1772,NM_012334,,20,6904,GCTGCCGCAGCACTCCAGC,, 1773,NM_012334,,20,6898,CGCAGCACTCCAGCTCAAAC,, 25 1774,NM_012334,,20,6892,ACTCCAGCTCAAACACACTG,, 1775,NM_012334,,20,6886,GCTCAAACACACTGTCCCCT,, 1776,NM_012334,,20,6880,ACACACTGTCCCCTCGAGCT,, 1777,NM_012334,,20,6874,TGTCCCCTCGAGCTCTCCAT, 30 1778,NM_012334,,20,6868,CTCGAGCTCTCCATCCCCCT,, 1779,NM_012334,,20,6862,CTCTCCATCCCCTTCCCAC,, 1780,NM_012334,,20,6856,ATCCCCCTTCCCACTCCCTC,, 1781,NM_012334,,20,6850,CTTCCCACTCCCTCACCTTC,, 1782,NM_012334,,20,6844,ACTCCCTCACCTTCCCTCAG,, 35 1783,NM_012334,,20,6838,TCACCTTCCCTCAGATTCGG,, 1784,NM_012334,,20,6832,TCCCTCAGATTCGGGGAAAT,, 1785,NM_012334,,20,6826,AGATTCGGGGAAATCAGGTT,, 1786,NM_012334,,20,6820,GGGGAAATCAGGTTGGGAGG,, 1787,NM_012334,,20,6814,ATCAGGTTGGGAGGTTAGTG,, 40 1788,NM_012334,,20,6808,TTGGGAGGTTAGTGCATCAT,, 1789,NM_012334,,20,6802,GGTTAGTGCATCATTGACAG,, 1790,NM_012334,,20,6796,TGCATCATTGACAGAGAATG,, 1791,NM_012334,,20,6790,ATTGACAGAGAATGCCCCCC,, 1792,NM_012334,,20,6784,AGAGAATGCCCCCCTTCCAC,, 1793,NM_012334,,20,6778,TGCCCCCCTTCCACGCTCTG,,1794,NM_012334,,20,6772,CCTTCCACGCTCTGTTAAGT,, 45 1795,NM_012334,,20,6766,ACGCTCTGTTAAGTCTCCCC,, 1796,NM_012334,,20,6760,TGTTAAGTCTCCCCCAGAAG,, 1797,NM_012334,,20,6754,GTCTCCCCAGAAGGGGGAA.. 1798,NM_012334,,20,6748,CCCAGAAGGGGGAAAGGCAG,, 50 1799,NM_012334,,20,6742,AGGGGGAAAGGCAGTTCCCT,, 1800,NM_012334,,20,6736,AAAGGCAGTTCCCTTCAGTA,, 1801,NM_012334,,20,6730,AGTTCCCTTCAGTAGCACAG,, 1802,NM_012334,,20,6724,CTTCAGTAGCACAGTTACGG,, 1803,NM_012334,,20,6718,TAGCACAGTTACGGTCGATT,, 55 1804,NM_012334,,20,6712,AGTTACGGTCGATTAGTGTT,, 1805,NM_012334,,20,6706,GGTCGATTAGTGTTGGTTCC,, 1806,NM_012334,,20,6700,TTAGTGTTGGTTCCACAAGT,, 1807,NM_012334,,20,6694,TTGGTTCCACAAGTTAAGGC,, 60 1808,NM_012334,,20,6688,CCACAAGTTAAGGCACTTCC,, 1809,NM_012334,,20,6682,GTTAAGGCACTTCCGGCTGC,, 1810,NM_012334,,20,6676,GCACTTCCGGCTGCTTTGGT, 1811,NM_012334,,20,6670,CCGGCTGCTTTGGTGGCAGC,, 1812,NM_012334,,20,6664,GCTTTGGTGGCAGCGTGGTT,, 1813,NM_012334",20,6658,GTGGCAGCGTGGTTCCTCCC, 1814,NM_012334",20,6652,GCGTGGTTCCTCCCCTCCTT, 1815,NM_012334",20,6646,TTCCTCCCCTCCTTTTTAA" 65 1816,NM_012334,,20,6640,CCCTCCTTTTTTAAGGCATG,, 1817,NM_012334,,20,6634,TTTTTTAAGGCATGTGTCCT,, 1818,NM_012334,,20,6628,AAGGCATGTGTCCTCTAAGA,, 1819,NM_012334,,20,6622,TGTGTCCTCTAAGAGTAGTA,, 70 1820,NM_012334,,20,6616,CTCTAAGAGTAGTAAAGCTT,, 1821,NM_012334,,20,6610,GAGTAGTAAAGCTTTGGAAA,, 1822,NM_012334,,20,6604,TAAAGCTTTGGAAACTGTGC,, 75 1823,NM_012334,,20,6598,TTTGGAAACTGTGCAGACTG,,

1824,NM_012334,,20,6592,AACTGTGCAGACTGTTAAAG,, 1825,NM_012334,,20,6586,GCAGACTGTTAAAGTTGACA,, 1826,NM_012334,,20,6580,TGTTAAAGTTGACAGCTTAA,, 1827,NM_012334,,20,6574,AGTTGACAGCTTAATACAGG,, 1828,NM_012334,,20,6568,CAGCTTAATACAGGATCAAT,, 1829,NM_012334,,20,6562,AATACAGGATCAATGAAGGC,, 1830,NM_012334,,20,6556,GGATCAATGAAGGCGGCAGG., 1831,NM_012334,,20,6550,ATGAAGGCGGCAGGCAAAAG,, 1832,NM_012334,,20,6544,GCGGCAGGCAAAAGGATCCT,, 10 1833,NM_012334,,20,6538,GGCAAAAGGATCCTCGGAGA,, 1834,NM_012334,,20,6532,AGGATCCTCGGAGACACCTC,, 1835,NM_012334,,20,6526,CTCGGAGACACCTCCCTCAG,, 1836,NM_012334,,20,6520,GACACCTCCCTCAGACCAGA,, 1837,NM_012334,,20,6514,TCCCTCAGACCAGAAGCTTC,, 15 1838,NM_012334,,20,6508,AGACCAGAAGCTTCCAGAAA,, 1839,NM_012334,,20,6502,GAAGCTTCCAGAAAGCCTGG,, 1840,NM_012334,,20,6496,TCCAGAAAGCCTGGGCAGCT,, 1841,NM_012334,,20,6490,AAGCCTGGGCAGCTCTGTGT, 1842,NM_012334,,20,6484,GGGCAGCTCTGTGTTTGTTT,, 20 1843,NM_012334,,20,6478,CTCTGTGTTTGTTTTGGCTG,, 1844,NM_012334,,20,6472,GTTTGTTTTGGCTGGGCATG,, 1845,NM_012334,,20,6466,TTTGGCTGGGCATGGCACAC,, 1846,NM_012334,,20,6460,TGGGCATGGCACACTGGAGC,, 1847,NM_012334,,20,6454,TGGCACACTGGAGCCAGCCT,, 25 1848,NM_012334,,20,6448,ACTGGAGCCAGCCTAGGCCA,, 1849,NM_012334,,20,6442,GCCAGCCTAGGCCAGAGGGT,, 1850,NM_012334,,20,6436,CTAGGCCAGAGGGTGGTGCG, 1851,NM_012334,,20,6430,CAGAGGGTGGTGCGTTCAGG,, 1852,NM_012334,,20,6424,GTGGTGCGTTCAGGTAGCAA,, 30 1853,NM_012334,,20,6418,CGTTCAGGTAGCAAAGACAG,, 1854,NM_012334,,20,6412,GGTAGCAAAGACAGGTGGGC,, 1855,NM_012334,,20,6406,AAAGACAGGTGGGCTCTGTC,, 1856,NM_012334,,20,6400,AGGTGGGCTCTGTCCCGCCT,, 1857,NM_012334,,20,6394,GCTCTGTCCCGCCTTCACCT,, 35 1858,NM_012334,,20,6388,TCCCGCCTTCACCTGGAGCT,, 1859,NM_012334,,20,6382,CTTCACCTGGAGCTGCCCTG, 1860,NM_012334,,20,6376,CTGGAGCTGCCCTGGCTGCT, 1861,NM_012334,,20,6370,CTGCCCTGGCTGCTGGCGGA,, 1862,NM_012334,,20,6364,TGGCTGCTGGCGGAGCGTGT,, 40 1863,NM_012334,,20,6358,CTGGCGGAGCGTGTCGTGCT,, 1864,NM_012334,,20,6352,GAGCGTGTCGTGCTGTAGCG,, 1865,NM_012334,,20,6346,GTCGTGCTGTAGCGCTTCTT,, 1866,NM_012334,,20,6340,CTGTAGCGCTTCTTCACGAT,, 1867,NM_012334,,20,6334,CGCTTCTTCACGATCATGCT,, 1868,NM_012334,,20,6328,TTCACGATCATGCTGATGTA,, 1869,NM_012334,,20,6322,ATCATGCTGATGTAGGCTTT,, 1870,NM_012334,,20,6316,CTGATGTAGGCTTTCATGAG,, 1871,NM_012334,,20,6310,TAGGCTTTCATGAGCTTGGC,, 1872,NM_012334,,20,6304,TTCATGAGCTTGGCCACATC,, 1873,NM_012334,,20,6298,AGCTTGGCCACATCCACCAC, 50 1874,NM_012334,,20,6292,GCCACATCCACCACCTCACT,, 1875,NM_012334,,20,6286,TCCACCACCTCACTGGTTTC,, 1876,NM_012334,,20,6280,ACCTCACTGGTTTCAAAGAG,, 1877,NM_012334,,20,6274,CTGGTTTCAAAGAGCAGCTC,, 1878,NM_012334,,20,6268,TCAAAGAGCAGCTCCCTCTC,, 55 1879,NM_012334,,20,6262,AGCAGCTCCCTCTCATCGAC,, 1880,NM_012334,,20,6256,TCCCTCTCATCGACCACGAT,, 1881,NM_012334,,20,6250,TCATCGACCACGATCTTATA,, 1882,NM_012334,,20,6244,ACCACGATCTTATACGTATT,, 60 1883,NM_012334,,20,6238,ATCTTATACGTATTCGCCAG,, 1884,NM_012334,,20,6232,TACGTATTCGCCAGGGGTGC,, 1885,NM_012334,,20,6226,TTCGCCAGGGGTGCCCCAAA,, 1886,NM_012334,,20,6220,AGGGGTGCCCCAAAAGAGAG,, 1887,NM_012334,,20,6214,GCCCCAAAAGAGAGGATGTG,, 1888,NM_012334,,20,6208,AAAGAGAGGATGTGTTCATA,, 1889,NM_012334,,20,6202,AGGATGTGTTCATACTGGAA,, 1890,NM_012334,,20,6196,TGTTCATACTGGAAGACTTC, 1891,NM_012334,,20,6190,TACTGGAAGACTTCCAGTGG., 1892,NM_012334,,20,6184,AAGACTTCCAGTGGTCTTCC,, 1893,NM_012334,,20,6178,TCCAGTGGTCTTCCCTCTCC,, 1894,NM_012334,,20,6172,GGTCTTCCCTCTCCACGCTT,, 70 1895,NM_012334,,20,6166,CCCTCTCCACGCTTGTAGAC, 1896,NM_012334,,20,6160,CCACGCTTGTAGACGGAGAC,, 1897,NM_012334,,20,6154,TTGTAGACGGAGACGGCGTC,, 1898,NM_012334,,20,6148,ACGGAGACGGCGTCCGCGCT,, 75

1899,NM_012334,,20,6142,ACGGCGTCCGCGCTGACACC,, 1900,NM_012334,,20,6136,TCCGCGCTGACACCCAACCA,, 1901,NM_012334,,20,6130,CTGACACCCAACCAGAGTTC,, 1902,NM_012334,,20,6124,CCCAACCAGAGTTCCTGAGG,, 1903,NM_012334,,20,6118,CAGAGTTCCTGAGGGAAGCC,, 1904,NM_012334,,20,6112,TCCTGAGGGAAGCCACCTTC,, 1905,NM_012334,,20,6106,GGGAAGCCACCTTCCTTGCA,,1906,NM_012334,,20,6100,CCACCTTCCTTGCACTCCAC, 1907,NM_012334,,20,6094,TCCTTGCACTCCACATCAAA,, 1908,NM_012334,,20,6088,CACTCCACATCAAACAGCGT,, 1909,NM_012334,,20,6082,ACATCAAACAGCGTCGAGCC,, 10 1910,NM_012334,,20,6076,AACAGCGTCGAGCCATAGCC,, 1911,NM_012334,,20,6070,GTCGAGCCATAGCCAGGCCA,, 1912,NM_012334,,20,6064,CCATAGCCAGGCCACTCCTT,, 15 1913,NM_012334,,20,6058,CCAGGCCACTCCTTGATCAA,, 1914,NM_012334,,20,6052,CACTCCTTGATCAAGGCCAT,, 1915,NM_012334,,20,6046,TTGATCAAGGCCATGTACTT,, 1916,NM_012334,,20,6040,AAGGCCATGTACTTGGCCAT,, 1917,NM_012334,,20,6034,ATGTACTTGGCCATGGCCTG,, 1918,NM_012334,,20,6028,TTGGCCATGGCCTGTTCCTG, 20 1919,NM_012334,,20,6022,ATGGCCTGTTCCTGGTTCAT,, 1920,NM_012334,,20,6016,TGTTCCTGGTTCATTCCCTG,, 1921,NM_012334,,20,6010,TGGTTCATTCCCTGAAATTT,, 1922,NM_012334,,20,6004,ATTCCCTGAAATTTCCTCCA,, 25 1923,NM_012334,,20,5998,TGAAATTTCCTCCACTTGTC,, 1924,NM 012334,,20,5992,TTCCTCCACTTGTCAATGAT,, 1925,NM_012334,,20,5986,CACTTGTCAATGATACTGGC,, 1926,NM_012334,,20,5980,TCAATGATACTGGCTCGAGC,, 1927,NM_012334,,20,5974,ATACTGGCTCGAGCAGAGGA,, 30 1928,NM_012334,,20,5968,GCTCGAGCAGAGGAGACTTC,, 1929,NM_012334,,20,5962,GCAGAGGAGACTTCTTCCTT,, 1930,NM_012334,,20,5956,GAGACTTCTTCCTTAATCCA, 1931,NM_012334,,20,5950,TCTTCCTTAATCCACATGTC,, 1932,NM 012334,,20,5944,TTAATCCACATGTCCAGCAT,, 1933,NM_012334,,20,5938,CACATGTCCAGCATCTGCTC,, 1934,NM_012334,,20,5932,TCCAGCATCTGCTCCTCTC, 1935,NM_012334,,20,5926,ATCTGCTCCTCGACCTT,, 1936,NM_012334,,20,5920,TCCTCCTCGACCTTCTGCCG,, 1937,NM_012334,,20,5914,TCGACCTTCTGCCGGACCAC,, 40 1938,NM_012334,,20,5908,TTCTGCCGGACCACGGATCC,, 1939,NM_012334,,20,5902,CGGACCACGGATCCTGTCCG,, 1940,NM_012334,,20,5896,ACGGATCCTGTCCGGAAGCT,, 1941,NM_012334,,20,5890,CCTGTCCGGAAGCTCCGCCT,, 1942,NM_012334,,20,5884,CGGAAGCTCCGCCTCAGGGT,, 1943,NM_012334,,20,5878,CTCCGCCTCAGGGTCCCCTC, 45 1944,NM 012334,,20,5872,CTCAGGGTCCCCTCTAGGAA,, 1945,NM_012334,,20,5866,GTCCCCTCTAGGAAGCTCGT,, 1946,NM_012334,,20,5860,TCTAGGAAGCTCGTCCGCCT,, 1947,NM_012334,,20,5854,AAGCTCGTCCGCCTCTTCTC,, 50 1948,NM_012334,,20,5848,GTCCGCCTCTTCTCCAGCCG,, 1949,NM 012334,,20,5842,CTCTTCTCCAGCCGTTCACA,, 1950,NM_012334,,20,5836,TCCAGCCGTTCACAAGGGGT,, 1951,NM_012334,,20,5830,CGTTCACAAGGGGTGAAGGT,, 1952,NM_012334,,20,5824,CAAGGGGTGAAGGTTTTGGT,, 1953,NM_012334,,20,5818,GTGAAGGTTTTGGTTGACTG,, 1954,NM_012334,,20,5812,GTTTTGGTTGACTGGCTGAT,, 1955,NM_012334,,20,5806,GTTGACTGGCTGATGCGGGC,, 1956,NM_012334,,20,5800,TGGCTGATGCGGGCCTTGAG,, 1957,NM 012334,,20,5794,ATGCGGGCCTTGAGTCTCTG, 1958,NM_012334,,20,5788,GCCTTGAGTCTCTGCAGGGA,, 1959,NM_012334,,20,5782,AGTCTCTGCAGGGAATAAAC,, 1960,NM_012334,,20,5776,TGCAGGGAATAAACCTCTTC,, 1961,NM_012334,,20,5770,GAATAAACCTCTTCGAGAGG,, 1962,NM_012334,,20,5764,ACCTCTTCGAGAGGTGGGAT,, 1963,NM_012334,,20,5758,TCGAGAGGTGGGATGGCAGC,,1964,NM_012334,,20,5752,GGTGGGATGGCAGCGTGCAG, 65 1965,NM_012334,,20,5746,ATGGCAGCGTGCAGAGTATA,, 1966,NM_012334,,20,5740,GCGTGCAGAGTATAATCCCC,, 1967,NM_012334,,20,5734,AGAGTATAAATCCCCCTGCAG,, 1968,NM_012334,,20,5728,TAATCCCCCTGCAGATACTG,, 1969,NM_012334,,20,5722,CCCTGCAGATACTGGAGTCG,, 70 1970,NM_012334,,20,5716,AGATACTGGAGTCGCAGGGC,,
1971,NM_012334,,20,5710,TGGAGTCGCAGGGCAGCAAG,, 1972,NM_012334,,20,5704,CGCAGGGCAGCAAGAACCTG,, 75 1973,NM_012334,,20,5698,GCAGCAAGAACCTGGAGGTT,,

1974,NM_012334,,20,5692,AGAACCTGGAGGTTTTCTTC,, 1975,NM 012334,,20,5686,TGGAGGTTTTCTTCCGGGGC,, 1976,NM_012334,,20,5680,TTTTCTTCCGGGGCTGGATG,, 1977,NM_012334,,20,5674,TCCGGGGCTGGATGGTGGCC,, 1978,NM_012334,,20,5668,GCTGGATGGTGGCCATGGAT,, 1979,NM_012334,,20,5662,TGGTGGCCATGGATAACCGC,, 1980,NM_012334,,20,5656,CCATGGATAACCGCTTCGTG,, 1981,NM_012334,,20,5650,ATAACCGCTTCGTGGGCCTG,, 1982,NM 012334,,20,5644,GCTTCGTGGGCCTGTTCAAA,, 1983,NM_012334,,20,5638,TGGGCCTGTTCAAACATAAA,, 1984,NM_012334,,20,5632,TGTTCAAACATAAATGCAAA,, 1985,NM_012334,,20,5626,AACATAAATGCAAACTCCAC,, 1986,NM_012334,,20,5620,AATGCAAACTCCACACTGTC,, 1987,NM_012334,,20,5614,AACTCCACACTGTCTTTTGG,, 15 1988,NM_012334,,20,5608,ACACTGTCTTTTGGCACGTT,, 1989,NM_012334,,20,5602,TCTTTTGGCACGTTGTCTGT,, 1990,NM_012334,,20,5596,GGCACGTTGTCTGTCCAG,, 1991,NM_012334,,20,5590,TTGTCTGTGTCCAGGAAGCA,, 1992,NM_012334,,20,5584,GTGTCCAGGAAGCAGTAAAG,, -1993,NM_012334,,20,5578,AGGAAGCAGTAAAGTTTGAA,, 1994,NM_012334,,20,5572,CAGTAAAGTTTGAAGTAGAA,, 1995,NM_012334,,20,5566,AGTTTGAAGTAGAATTTCCA,, 1996,NM_012334,,20,5560,AAGTAGAATTTCCATGGCAG,, 1997,NM_012334,,20,5554,AATTTCCATGGCAGGTCCCC,, 1998,NM_012334,,20,5548,CATGGCAGGTCCCCAACCTC,, 1999,NM_012334,,20,5542,AGGTCCCCAACCTCGGATGT,, 25 2000,NM_012334,,20,5536,CCAACCTCGGATGTGGCAGC,, 2001,NM_012334,,20,5530,TCGGATGTGGCAGCCAGCTT,, 2002,NM_012334,,20,5524,GTGGCAGCCAGCTTTTCAAA,, 2003,NM_012334,,20,5518,GCCAGCTTTTCAAACTTGGC,, 2004,NM_012334,,20,5512,TTTTCAAACTTGGCTAAGAC,, 2005,NM_012334,,20,5506,AACTTGGCTAAGACATCAGC,, 2006,NM_012334,,20,5500,GCTAAGACATCAGCTACGAC,, 2007,NM_012334,,20,5494,ACATCAGCTACGACGGTTCG... 35 2008,NM_012334,,20,5488,GCTACGACGGTTCGACTTTC,, 2009,NM_012334,,20,5482,ACGGTTCGACTTTCAATGGC,, 2010,NM_012334,,20,5476,CGACTTTCAATGGCTTTGTC,, 2011,NM_012334,,20,5470,TCAATGGCTTTGTCGACGTG,, 2012,NM_012334,,20,5464,GCTTTGTCGACGTGGCCGTT,, 40 2013,NM_012334,,20,5458,TCGACGTGGCCGTTGTATTC,, 2014,NM_012334,,20,5452,TGGCCGTTGTATTCAAACAA,, 2015,NM_012334,,20,5446,TTGTATTCAAACAAAGCAAA,, 2016,NM_012334,,20,5440,TCAAACAAAGCAAACATGTT,, 2017,NM_012334,,20,5434,AAAGCAAACATGTTCCTGCT,, 45 2018,NM_012334,,20,5428,AACATGTTCCTGCTGTCCTC,, 2019,NM_012334,,20,5422,TTCCTGCTGTCCTCCATGGC,, 2020,NM_012334,,20,5416,CTGTCCTCCATGGCCAGGCC,, 2021,NM_012334,,20,5410,TCCATGGCCAGGCCTCGGAT,, 2022,NM_012334,,20,5404,GCCAGGCCTCGGATCAGCTT,, 50 2023,NM_012334,,20,5398,CCTCGGATCAGCTTCTCCAC,, 2024,NM_012334,,20,5392,ATCAGCTTCTCCACCACCTC,, 2025,NM_012334,,20,5386,TTCTCCACCACCTCCCCAGC,, 2026,NM_012334,,20,5380,ACCACCTCCCCAGCAGTGGT,, 2027,NM_012334,,20,5374,TCCCCAGCAGTGGTGTGGGA,, 55 2028,NM_012334,,20,5368,GCAGTGGTGTGGGAGTTGAT,, 2029,NM_012334,,20,5362,GTGTGGGAGTTGATGGTGAT,, 2030,NM_012334,,20,5356,GAGTTGATGGTGATCTTGCA,, 2031,NM_012334,,20,5350,ATGGTGATCTTGCAGGAGCC,, 2032,NM_012334,,20,5344,ATCTTGCAGGAGCCGCCGCC, 2033,NM_012334,,20,5338,CAGGAGCCGCCGCCATGGCA,, 60 2034,NM_012334,,20,5332,CCGCCGCCATGGCAATAGAC,, 2035,NM_012334,,20,5326,CCATGGCAATAGACCGTGGA,, 2036,NM_012334,,20,5320,CAATAGACCGTGGATGTCAT,, 2037,NM_012334,,20,5314,ACCGTGGATGTCATTTCCTG,, 65 2038,NM_012334,,20,5308,GATGTCATTTCCTGCCTGTG,, 2039,NM_012334,,20,5302,ATTTCCTGCCTGTGGATCAG,, 2040,NM_012334,,20,5296,TGCCTGTGGATCAGAGCTTC,, 2041,NM_012334,,20,5290,TGGATCAGAGCTTCTATTTC,, 2042,NM_012334,,20,5284,AGAGCTTCTATTTCATCTCG,, 70 2043,NM_012334,,20,5278,TCTATTTCATCTCGGGAAGG,, 2044,NM_012334,,20,5272,TCATCTCGGGAAGGCACAAA,, 2045,NM_012334,,20,5266,CGGGAAGGCACAAACTCTCG,, 2046,NM_012334,,20,5260,GGCACAAACTCTCGGCATTT,, 2047,NM_012334,,20,5254,AACTCTCGGCATTTGGTTTT,, 75 2048,NM_012334,,20,5248,CGGCATTTGGTTTTCTTAAG,,

2049,NM 012334,,20,5242,TTGGTTTTCTTAAGAGATTC,, 2050,NM_012334,,20,5236,TTCTTAAGAGATTCGTAAGT,, 2051,NM_012334,,20,5230,AGAGATTCGTAAGTGAAGAG,, 2052,NM_012334,,20,5224,TCGTAAGTGAAGAGAGCGTA,, 2053,NM_012334,,20,5218,GTGAAGAGAGCGTATTTTTC,, 2054,NM_012334,,20,5212,AGAGCGTATTTTTCCATCTC,, 2055,NM_012334,,20,5206,TATTTTTCCATCTCGGTTCC,, 2056,NM 012334,,20,5200,TCCATCTCGGTTCCTGGAAA,, 2057,NM_012334,,20,5194,TCGGTTCCTGGAAACTGTTC,, 2058,NM_012334,,20,5188,CCTGGAAACTGTTCCCGTAT,, 2059,NM_012334,,20,5182,AACTGTTCCCGTATCCTTTT,, 2060,NM_012334,,20,5176,TCCCGTATCCTTTTCAGATG,, 2061,NM_012334,,20,5170,ATCCTTTTCAGATGGAACTT,, 2062,NM_012334,,20,5164,TTCAGATGGAACTTGAGATA,, 2063,NM_012334,,20,5158,TGGAACTTGAGATACTTGAG,, 2064,NM_012334,,20,5152,TTGAGATACTTGAGAATCCC,, 2065,NM_012334,,20,5146,TACTTGAGAATCCCTCGACT,, 2066,NM_012334,,20,5140,AGAATCCCTCGACTCGGCAG,, 2067,NM_012334,,20,5134,CCTCGACTCGGCAGGAAGGT,, 2068,NM_012334,,20,5128,CTCGGCAGGAAGGTGCAGCT,, 2069,NM_012334,,20,5122,AGGAAGGTGCAGCTCAGGCA,, 2070,NM_012334,,20,5116,GTGCAGCTCAGGCATGTCAG, 2071,NM_012334,,20,5110,CTCAGGCATGTCAGGATCTG,, 2072,NM 012334,,20,5104,CATGTCAGGATCTGCCAGCT,, 2073,NM_012334,,20,5098,AGGATCTGCCAGCTGTACAG,, 2074,NM_012334,,20,5092,TGCCAGCTGTACAGGTTGCC,, 2075,NM_012334,,20,5086,CTGTACAGGTTGCCCACACT,, 2076,NM_012334,,20,5080,AGGTTGCCCACACTGCCGGG,, 2077,NM_012334,,20,5074,CCCACACTGCCGGGGTGGGG, 2078,NM_012334,,20,5068,CTGCCGGGGTGGGGCACTTT,, 2079,NM_012334,,20,5062,GGGTGGGGCACTTTGTTGGT,, 2080,NM_012334,,20,5056,GGCACTTTGTTGGTCTGTTT,, 2081,NM_012334,,20,5050,TTGTTGGTCTGTTTGATAAG,, 2082,NM_012334,,20,5044,GTCTGTTTGATAAGCTGGCA,, 35 2083,NM_012334,,20,5038,TTGATAAGCTGGCAGTACAG,, 2084,NM_012334,,20,5032,AGCTGGCAGTACAGCTCGTC,, 2085,NM_012334,,20,5026,CAGTACAGCTCGTCCCGCAG,, 2086,NM_012334,,20,5020,AGCTCGTCCCGCAGAGGTCG,, 2087,NM_012334,,20,5014,TCCCGCAGAGGTCGCAGGTC,, 40 2088,NM_012334,,20,5008,AGAGGTCGCAGGTCATGCCC,, 2089,NM_012334,,20,5002,CGCAGGTCATGCCCTGTCTG,, 2090,NM_012334,,20,4996,TCATGCCCTGTCTGTAGGAT,, 2091,NM_012334,,20,4990,CCTGTCTGTAGGATGCCCTG,, 2092,NM_012334,,20,4984,TGTAGGATGCCCTGGATTAT,, 2093,NM_012334,,20,4978,ATGCCCTGGATTATTGGAAT,, 2094,NM_012334,,20,4972,TGGATTATTGGAATTGGGTC,, 2095,NM_012334,,20,4966,ATTGGAATTGGGTCAGACAT,, 2096,NM_012334,,20,4960,ATTGGGTCAGACATGGACTC,, 2097,NM_012334,,20,4954,TCAGACATGGACTCCAGTTG,, 2098,NM_012334,,20,4948,ATGGACTCCAGTTGCTGCAG,, 2099,NM_012334,,20,4942,TCCAGTTGCTGCAGGGAATT,, 2100,NM_012334,,20,4936,TGCTGCAGGGAATTGAATAT,, 2101,NM 012334,,20,4930,AGGGAATTGAATATCTTGAT,, 2102,NM_012334,,20,4924,TTGAATATCTTGATGGCCTC,, 2103,NM_012334,,20,4918,ATCTTGATGGCCTCATCCTG,, 2104,NM_012334,,20,4912,ATGGCCTCATCCTGAAGGGT,, 2105,NM 012334,,20,4906,TCATCCTGAAGGGTGGTATA,, 2106,NM_012334,,20,4900,TGAAGGGTGGTATAGCCTTT,, 2107,NM_012334,,20,4894,GTGGTATAGCCTTTGTCTTT,, 2108,NM_012334,,20,4888,TAGCCTTTGTCTTTGAGCAA,, 2109,NM_012334,,20,4882,TTGTCTTTGAGCAAGTTGAG,, 2110,NM_012334,,20,4876,TTGAGCAAGTTGAGATTTAT,, 2111,NM_012334,,20,4870,AAGTTGAGATTTATGTCCCC,, 2112,NM_012334,,20,4864,AGATTTATGTCCCCATACGG,, 2113,NM_012334,,20,4858,ATGTCCCCATACGGAAGGGG, 2114,NM 012334,,20,4852,CCATACGGAAGGGGCAGGAG,, 2115,NM_012334,,20,4846,GGAAGGGGCAGGAGCGGGGA,, 2116,NM_012334,,20,4840,GGCAGGAGCGGGGAGTGCAA,, 2117,NM_012334,,20,4834,AGCGGGGAGTGCAAGGGGTG,, 2118,NM_012334,,20,4828,GAGTGCAAGGGGTGATGGGT, 2119,NM_012334,,20,4822,AAGGGGTGATGGGTGTATCG,, 2120,NM_012334,,20,4816,TGATGGGTGTATCGAAGGAT,, 2121,NM_012334,,20,4810,GTGTATCGAAGGATCGGGTT,, 2122,NM_012334,,20,4804,CGAAGGATCGGGTTCCGCTT,, 2123,NM_012334,,20,4798,ATCGGGTTCCGCTTGTAAAT,,

2124,NM_012334,,20,4792,TTCCGCTTGTAAATCTGTTC... 2125,NM_012334,,20,4786,TTGTAAATCTGTTCCACCAC,, 2126,NM 012334,20,4780,ATCTGTTCCACCACATCCGA, 2127,NM_012334,,20,4774,TCCACCACATCCGAGTTCAG,, 2128,NM_012334,,20,4768,ACATCCGAGTTCAGGCAGTT, 2129,NM_012334,,20,4762,GAGTTCAGGCAGTTCTCCTT,, 2130,NM_012334,,20,4756,AGGCAGTTCTCCTTGATATC,, 2131,NM_012334,,20,4750,TTCTCCTTGATATCTTGAAT,, 2132,NM_012334,,20,4744,TTGATATCTTGAATCAGCTG,, 2133,NM 012334,,20,4738,TCTTGAATCAGCTGCTGGGT,, 2134,NM_012334,,20,4732,ATCAGCTGCTGGGTGGGGGT,, 2135,NM_012334,,20,4726,TGCTGGGTGGGGGTGTCGAT,, 2136,NM_012334,,20,4720,GTGGGGGTGTCGATCGGGGC,, 2137,NM_012334,,20,4714,GTGTCGATCGGGGCCTTGGT, 2138,NM_012334,,20,4708,ATCGGGGCCTTGGTGTCAGT,, 2139,NM_012334,,20,4702,GCCTTGGTGTCAGTCACGTT,, 2140,NM_012334,,20,4696,GTGTCAGTCACGTTTTGAAT,, 2141,NM_012334,,20,4690,GTCACGTTTTGAATGGCACT,, 2142,NM_012334,,20,4684,TTTTGAATGGCACTGGACCA,, 20 2143,NM_012334,,20,4678,ATGGCACTGGACCACCGGGT,, 2144,NM_012334,,20,4672,CTGGACCACCGGGTGGCCTC,, 2145,NM_012334,,20,4666,CACCGGGTGGCCTCGTTGAG,, 2146,NM_012334,,20,4660,GTGGCCTCGTTGAGCAGCTT,, 2147,NM_012334,,20,4654,TCGTTGAGCAGCTTGGTGTA,, 25 2148,NM_012334,,20,4648,AGCAGCTTGGTGTAGAGCCG,, 2149,NM_012334,,20,4642,TTGGTGTAGAGCCGGTAACA,, 2150,NM_012334,,20,4636,TAGAGCCGGTAACAGTGCTT,, 2151,NM_012334,,20,4630,CGGTAACAGTGCTTGCGCCC,, 2152,NM_012334,,20,4624,CAGTGCTTGCGCCCGTACAC,, 30 2153,NM_012334,,20,4618,TTGCGCCCGTACACGGTGAC,, 2154,NM_012334,,20,4612,CCGTACACGGTGACGTTCCA,, 2155,NM_012334,,20,4606,ACGGTGACGTTCCAGTAGCC,, 2156,NM_012334,,20,4600,ACGTTCCAGTAGCCTGTCTC,, 2157,NM_012334,,20,4594,CAGTAGCCTGTCTCTTTGAA,, 2158,NM_012334,,20,4588,CCTGTCTCTTTGAATATCTT,, 2159,NM_012334,,20,4582,TCTTTGAATATCTTCTCATC,, 2160,NM_012334,,20,4576,AATATCTTCTCATCTGGGGG,, 2161,NM_012334,,20,4570,TTCTCATCTGGGGGGACGAC,, 2162,NM_012334,,20,4564,TCTGGGGGGACGACAGAGCA, 2163,NM_012334,,20,4558,GGGACGACAGAGCAGAGGCT,, 2164,NM_012334,,20,4552,ACAGAGCAGAGGCTGTTGAG,, 2165,NM_012334,,20,4546,CAGAGGCTGTTGAGGACCAG,, 2166,NM_012334,,20,4540,CTGTTGAGGACCAGGGTCCC,, 2167,NM_012334,,20,4534,AGGACCAGGGTCCCCAGTTT,, 2168,NM_012334,,20,4528,AGGGTCCCCAGTTTGAGCGC,, 2169,NM_012334,,20,4522,CCCAGTTTGAGCGCGTTCTT,, 2170,NM_012334,,20,4516,TTGAGCGCGTTCTTCTCTGA,, 2171,NM_012334,,20,4510,GCGTTCTTCTCTGAACTCTT,, 2172,NM_012334,,20,4504,TTCTCTGAACTCTTGTAGTA,, 50 2173,NM_012334,,20,4498,GAACTCTTGTAGTAATCCAG,, 2174,NM_012334,,20,4492,TTGTAGTAATCCAGGGAATT,, 2175,NM_012334,,20,4486,TAATCCAGGGAATTGTGGGT,, 2176,NM_012334,,20,4480,AGGGAATTGTGGGTGAGTAC,, 2177,NM 012334,,20,4474,TTGTGGGTGAGTACAAACCA,, 2178,NM_012334,,20,4468,GTGAGTACAAACCACCGTTT,, 2179,NM_012334,,20,4462,ACAAACCACCGTTTCTTCAG,, 2180,NM_012334,,20,4456,CACCGTTTCTTCAGTTTCAG,, 2181,NM_012334,,20,4450,TTCTTCAGTTTCAGTGAAGA,, 2182,NM_012334,,20,4444,AGTTTCAGTGAAGACATCTT,, 60 2183,NM_012334,,20,4438,AGTGAAGACATCTTCGGACT,, 2184,NM_012334,,20,4432,GACATCTTCGGACTGTTCTT,, 2185,NM_012334,,20,4426,TTCGGACTGTTCTTCACCTC,, 2186,NM_012334,,20,4420,CTGTTCTTCACCTCTTTGTG,, 2187,NM_012334,,20,4414,TTCACCTCTTTGTGCAACCA,, 2188,NM_012334,,20,4408,TCTTTGTGCAACCATCCTCT,, 2189,NM_012334,,20,4402,TGCAACCATCCTCTCACGAT,, 2190,NM_012334,,20,4396,CATCCTCTCACGATGAATTC,, 2191,NM_012334,,20,4390,CTCACGATGAATTCCTGGCC,, 2192,NM_012334,,20,4384,ATGAATTCCTGGCCCTCCAC,, 2193,NM_012334,,20,4378,TCCTGGCCCTCCACTCTGGT,, 2194,NM_012334,,20,4372,CCTCCACTCTGGTGTCCCC, 2195,NM_012334,,20,4366,ACTCTGGTGTCCCCTTTGGA,, 2196,NM_012334,,20,4360,GTGTCCCCTTTGGACCTCTG,, 2197,NM 012334,,20,4354,CCTTTGGACCTCTGCAGCAG,, 75 2198,NM_012334,,20,4348,GACCTCTGCAGCAGGGTTAT,

2199,NM 012334,,20,4342,TGCAGCAGGGTTATCCAGTG,, 2200,NM_012334,,20,4336,AGGGTTATCCAGTGGTGCAT,, 2201,NM_012334,,20,4330,ATCCAGTGGTGCATCTCCTC,, 2202,NM_012334,,20,4324,TGGTGCATCTCCTCCGGCGT,, 2203,NM_012334,,20,4318,ATCTCCTCCGGCGTGTCGGC,, 2204,NM_012334,,20,4312,TCCGGCGTGTCGGCGTTGCA,, 2205,NM_012334,,20,4306,GTGTCGGCGTTGCAGTGCAG,, 2206,NM 012334,,20,4300,GCGTTGCAGTGCAGCACCCG,, 2207,NM_012334,,20,4294,CAGTGCAGCACCCGGTTGGC,, 10 2208,NM_012334,,20,4288,AGCACCCGGTTGGCCGTGAT,, 2209,NM_012334,,20,4282,CGGTTGGCCGTGATGATCAC,, 2210,NM_012334,,20,4276,GCCGTGATGATCACAAACGA,, 2211,NM_012334,,20,4270,ATGATCACAAACGAGTTGGG,, 2212,NM_012334,,20,4264,ACAAACGAGTTGGGTCTATC,, 15 2213,NM_012334,,20,4258,GAGTTGGGTCTATCAGGGCT,, 2214,NM_012334,,20,4252,GGTCTATCAGGGCTGTCAGA,, 2215,NM_012334,,20,4246,TCAGGGCTGTCAGAGGCACA,, 2216,NM_012334,,20,4240,CTGTCAGAGGCACACACAGA,, 2217,NM_012334,,20,4234,GAGGCACACACAGAATCAAT,, 2218,NM_012334,,20,4228,CACACAGAATCAATCAGCCC,, 2219,NM_012334,,20,4222,GAATCAATCAGCCCCACATC,, 2220,NM_012334,,20,4216,ATCAGCCCCACATCCAAGGT,, 2221,NM_012334,,20,4210,CCCACATCCAAGGTGCCCAC,, 2222,NM_012334,,20,4204,TCCAAGGTGCCCACAGCATT,, 25 2223,NM_012334,,20,4198,GTGCCCACAGCATICTGTGG,, 2224,NM_012334,,20,4192,ACAGCATTCTGTGGGTTTGC,, 2225,NM_012334,,20,4186,TTCTGTGGGTTTGCCTGCTC,, 2226,NM_012334,,20,4180,GGGTTTGCCTGCTCATCATG,, 2227,NM_012334,,20,4174,GCCTGCTCATCATGCATCTC,, 30 2228,NM_012334,,20,4168,TCATCATGCATCTCCTGGAT,, 2229,NM_012334,,20,4162,TGCATCTCCTGGATCTCCTG,, 2230,NM 012334,,20,4156,TCCTGGATCTCCTGGTCCGT,, 2231,NM_012334,,20,4150,ATCTCCTGGTCCGTGGACGC,, 2232,NM_012334,,20,4144,TGGTCCGTGGACGCGTGGAC,, 35 2233,NM_012334,,20,4138,GTGGACGCGTGGACCTGACT,, 2234,NM 012334,,20,4132,GCGTGGACCTGACTCAGCAC,, 2235,NM_012334,,20,4126,ACCTGACTCAGCACGCTGAA,, 2236,NM_012334,,20,4120,CTCAGCACGCTGAACCACTG,, 2237,NM_012334,,20,4114,ACGCTGAACCACTGGCTGGC,, 2238,NM_012334,,20,4108,AACCACTGGCTGGCATCTTC,, 2239,NM_012334,,20,4102,TGGCTGGCATCTTCTGGGGA,, 2240,NM_012334,,20,4096,GCATCTTCTGGGGACTCTGC,, 2241,NM_012334,,20,4090,TCTGGGGACTCTGCAATCAG,, 2242,NM_012334,,20,4084,GACTCTGCAATCAGGTGGAA,, 2243,NM_012334,,20,4078,GCAATCAGGTGGAAAGTCCT,, 2244,NM_012334,,20,4072,AGGTGGAAAGTCCTATCGGC,, 2245,NM_012334,,20,4066,AAAGTCCTATCGGCCATAAT,, 2246,NM_012334,,20,4060,CTATCGGCCATAATGATGTC,, 2247,NM_012334,,20,4054,GCCATAATGATGTCGATCCC,, 2248,NM_012334,,20,4048,ATGATGTCGATCCCATTCTC,, 2249,NM_012334,,20,4042,TCGATCCCATTCTCCTTGGT,, 2250,NM_012334,,20,4036,CCATTCTCCTTGGTGGTGTT,, 2251,NM_012334,,20,4030,TCCTTGGTGGTGTTATCTAT,, 2252,NM_012334,,20,4024,GTGGTGTTATCTATGATCTC,, 2253,NM_012334,,20,4018,TTATCTATGATCTCTTTTGC,, 55 2254,NM_012334,,20,4012,ATGATCTCTTTTGCCGTTCG,, 2255,NM_012334,,20,4006,TCTTTTGCCGTTCGCACTTC,, 2256,NM_012334,,20,4000,GCCGTTCGCACTTCTACGGT, 2257,NM_012334,,20,3994,CGCACTTCTACGGTGCCCTT,, 2258,NM_012334,,20,3988,TCTACGGTGCCCTTGAGCTT,, 2259,NM 012334,,20,3982,GTGCCCTTGAGCTTCTCCTC., 2260,NM_012334,,20,3976,TTGAGCTTCTCCTCGCTGTC,, 2261,NM_012334,,20,3970,TTCTCCTCGCTGTCGTTTTC,, 2262,NM_012334,,20,3964,TCGCTGTCGTTTTCAAAGTA,, 2263,NM_012334,,20,3958,TCGTTTTCAAAGTACATCAG,, 2264,NM_012334,,20,3952,TCAAAGTACATCAGCTTGGA,, 2265,NM_012334,,20,3946,TACATCAGCTTGGACTGGCG,, 2266,NM_012334,,20,3940,AGCTTGGACTGGCGGAGGAC,, 2267,NM_012334,,20,3934,GACTGGCGGAGGACAAACCA,, 2268,NM_012334,,20,3928,CGGAGGACAAACCAGCGCTT,, 2269,NM_012334,,20,3922,ACAAACCAGCGCTTCTTCCA,, 2270,NM_012334,,20,3916,CAGCGCTTCTTCCAATTTCT,, 2271,NM_012334,,20,3910,TTCTTCCAATTTCTCCTGGA,, 2272.NM_012334,,20,3904,CAATTTCTCCTGGACAGCGT,, 2273,NM_012334,,20,3898,CTCCTGGACAGCGTGGAGGA,, 75

2274,NM 012334,,20,3892,GACAGCGTGGAGGAGCCCCC,, 2275,NM_012334,,20,3886,GTGGAGGAGCCCCCCCTTT,, 2276,NM_012334,,20,3880,GAGCCCCCCCTTTTTTGTG,, 2277,NM_012334,,20,3874,CCCCCTTTTTTGTGGAGCCA,, 2278,NM_012334,,20,3868,TTTTTGTGGAGCCAGCCTTG,, 2279,NM_012334,,20,3862,TGGAGCCAGCCTTGCTTGAG,, 2280,NM_012334,,20,3856,CAGCCTTGCTTGAGGGCCTC,, 2281,NM_012334,,20,3850,TGCTTGAGGGCCTCCTGCTT,, 2282,NM_012334,,20,3844,AGGGCCTCCTGCTTGGAGCG,, 10 2283,NM_012334,,20,3838,TCCTGCTTGGAGCGGAACCA,, 2284,NM_012334,,20,3832,TTGGAGCGGAACCACAAGAA,, 2285,NM_012334,,20,3826,CGGAACCACAAGAAGGTTTC,, 2286,NM_012334,,20,3820,CACAAGAAGGTTTCATCCTT,, 2287,NM_012334,,20,3814,AAGGTTTCATCCTTGAGGAC,, 15 2288,NM_012334,,20,3808,TCATCCTTGAGGACGCACCA,, 2289,NM_012334,,20,3802,TTGAGGACGCACCAGCGGCG,, 2290,NM_012334,20,3796,ACGCACCAGCGGCGTTTCCA,, 2291,NM_012334,20,3790,CAGCGGCGTTTCCAAGAGTT, 2292,NM_012334,,20,3784,CGTTTCCAAGAGTTCATCAG,, 20 2293,NM_012334,,20,3778,CAAGAGTTCATCAGGCCACC,, 2294,NM_012334,,20,3772,TTCATCAGGCCACCTTTCAT,, 2295,NM_012334,,20,3766,AGGCCACCTTTCATGTACAG,, 2296,NM_012334,,20,3760,CCTTTCATGTACAGAAAGCT,, 2297,NM_012334,,20,3754,ATGTACAGAAAGCTGTGGAA,, 25 2298,NM_012334,,20,3748,AGAAAGCTGTGGAAATACGG,, 2299,NM_012334,,20,3742,CTGTGGAAATACGGCAGAGT,, 2300,NM_012334,,20,3736,AAATACGGCAGAGTGACACA,, 2301,NM_012334,20,3730,GGCAGAGTGACACAGCTGTA,, 2302,NM_012334,20,3724,GTGACACAGCTGTACACAGA,, 30 2303,NM_012334,,20,3718,CAGCTGTACACAGAGTCACG,, 2304,NM_012334,,20,3712,TACACAGAGTCACGCCGGTA,, 2305,NM_012334,,20,3706,GAGTCACGCCGGTATGAAAG,, 2306,NM_012334,,20,3700,CGCCGGTATGAAAGCTCATC,, 2307,NM_012334,,20,3694,TATGAAAGCTCATCATCTGT,, 35 2308,NM_012334,,20,3688,AGCTCATCATCTGTATCAAA,, 2309,NM 012334,,20,3682,TCATCTGTATCAAACCTGGA,, 2310,NM_012334,,20,3676,GTATCAAACCTGGAATCAAA,, 2311,NM_012334,,20,3670,AACCTGGAATCAAAGTCCTC,, 2312,NM_012334,,20,3664,GAATCAAAGTCCTCTTCACT,, 40 2313,NM_012334,,20,3658,AAGTCCTCTTCACTATCTTC,, 2314,NM_012334,,20,3652,TCTTCACTATCTTCAAACGA,, 2315,NM_012334,,20,3646,CTATCTTCAAACGAGGACTG,, 2316,NM_012334,,20,3640,TCAAACGAGGACTGCGCCCC,, 2317,NM_012334,,20,3634,GAGGACTGCGCCCCTCAGA,, 2318,NM_012334,,20,3628,TGCGCCCCCTCAGAGCTGAA,, 2319,NM_012334,,20,3622,CCCTCAGAGCTGAACCGGTA,, 45 2320,NM_012334,,20,3616,GAGCTGAACCGGTAGGCACC,, 2321,NM_012334,,20,3610,AACCGGTAGGCACCCGAGCT,, 2322,NM_012334,,20,3604,TAGGCACCCGAGCTGTTGTA,, 2323,NM_012334,,20,3598,CCCGAGCTGTTGTAGGTCCC,, 50 2324,NM_012334,,20,3592,CTGTTGTAGGTCCCCACAGA,, 2325,NM 012334,,20,3586,TAGGTCCCCACAGAGCAGCG,, 2326,NM_012334,,20,3580,CCCACAGAGCAGCGGTAGTC., 2327,NM_012334,,20,3574,GAGCAGCGGTAGTCGGGGGA., 2328,NM_012334,,20,3568,CGGTAGTCGGGGGACCACTG,, 55 2329,NM_012334,,20,3562,TCGGGGGACCACTGGCTGCC,, 2330,NM_012334,,20,3556,GACCACTGGCTGCCGTAGGA,, 2331,NM_012334,,20,3550,TGGCTGCCGTAGGAGTTGGA,, 2332,NM_012334,,20,3544,CCGTAGGAGTTGGAGAAGGT,, 2333,NM_012334,,20,3538,GAGTTGGAGAAGGTCACGCT,, 60 2334,NM_012334,,20,3532,GAGAAGGTCACGCTGCTGCC, 2335,NM_012334,,20,3526,GTCACGCTGCTGCCGGAAGT,, 2336,NM_012334,,20,3520,CTGCTGCCGGAAGTGATGGC,, 2337,NM_012334,,20,3514,CCGGAAGTGATGGCACCGTC,, 2338,NM_012334,,20,3508,GTGATGGCACCGTCCTCATA,, 2339,NM_012334,,20,3502,GCACCGTCCTCATAGTCATC,, 2340,NM_012334,,20,3496,TCCTCATAGTCATCCTGGTC,, 2341,NM_012334,,20,3490,TAGTCATCCTGGTCGTAGTC,, 2342,NM_012334,,20,3484,TCCTGGTCGTAGTCGTAGTC,, 2343,NM_012334,20,3478,TCGTAGTCGTAGTCGCCGTC, 2344,NM_012334,20,3472,TCGTAGTCGCCGTCTGGGGA, 2345,NM_012334,,20,3466,TCGCCGTCTGGGGAGGGCAA,, 2346,NM_012334,,20,3460,TCTGGGGAGGGCAAGTCCCC,, 2347,NM_012334,,20,3454,GAGGGCAAGTCCCCAGCGTT,, 75 2348,NM_012334,,20,3448,AAGTCCCCAGCGTTCTGGGG,

2349,NM_012334,,20,3442,CCAGCGTTCTGGGGCATGCA,, 2350,NM 012334,,20,3436,TTCTGGGGCATGCAGTAGGT, 2351,NM_012334,,20,3430,GGCATGCAGTAGGTGGACTC,, 2352,NM_012334,,20,3424,CAGTAGGTGGACTCGCCGCT,, 2353,NM 012334,,20,3418,GTGGACTCGCCGCTGGAGGA,, 2354,NM_012334,,20,3412,TCGCCGCTGGAGGAGTTGTG,, 2355,NM_012334,,20,3406,CTGGAGGAGTTGTGTAGGCT,, 2356,NM_012334,,20,3400,GAGTTGTGTAGGCTCCCGGA,, 2357,NM 012334,,20,3394,TGTAGGCTCCCGGAGTCCTG,, 2358,NM_012334,,20,3388,CTCCCGGAGTCCTGCACTGA,, 2359,NM_012334,,20,3382,GAGTCCTGCACTGATGGGGC,, 2360,NM_012334,,20,3376,TGCACTGATGGGGCGAGCAG,, 2361,NM 012334,,20,3370,GATGGGGCGAGCACCGT,, 2362,NM_012334,,20,3364,GCGAGCAGCACCGTGCTGTC,, 2363,NM_012334,,20,3358,AGCACCGTGCTGTCCGCACT,, 15 2364,NM_012334,,20,3352,GTGCTGTCCGCACTGGGGCT, 2365,NM_012334,,20,3346,TCCGCACTGGGGCTGGTGGG,, 2366,NM_012334,,20,3340,CTGGGGCTGGTGGGCACCAC,, 2367,NM_012334,,20,3334,CTGGTGGGCACCACCGTGTC,, 20 2368,NM_012334,,20,3328,GGCACCACCGTGTCGTTCAT,, 2369,NM_012334,,20,3322,ACCGTGTCGTTCATGTATGG,, 2370,NM_012334,,20,3316,TCGTTCATGTATGGGTCCTC,, 2371,NM_012334,,20,3310,ATGTATGGGTCCTCTCTGA,, 2372,NM_012334,,20,3304,GGGTCCTCCTCTGAAGAGTC,, 25 2373,NM_012334,,20,3298,TCCTCTGAAGAGTCATCGCT,, 2374,NM_012334,,20,3292,GAAGAGTCATCGCTGGTCCG,, 2375,NM_012334,,20,3286,TCATCGCTGGTCCGGATGCC,, 2376,NM_012334,,20,3280,CTGGTCCGGATGCCACTTGT,, 2377,NM_012334,,20,3274,CGGATGCCACTTGTTCGCTG,, 2378,NM_012334,,20,3268,CCACTTGTTCGCTGGTCTGA,, 2379,NM_012334,,20,3262,GTTCGCTGGTCTGAGTGGCC,, 2380,NM_012334,,20,3256,TGGTCTGAGTGGCCGTGCTC,, 2381,NM_012334,,20,3250,GAGTGGCCGTGCTCGCTGGG,, 2382,NM_012334,,20,3244,CCGTGCTCGCTGGGGTTGGG,, 35 2383,NM_012334,,20,3238,TCGCTGGGGGTTGGGGGAGTC,, 2384,NM_012334,,20,3232,GGGTTGGGGGAGTCCTTGAA,, 2385,NM_012334,,20,3226,GGGGAGTCCTTGAAGGCGTC,, 2386,NM_012334,,20,3220,TCCTTGAAGGCGTCGTCGTC,, 2387,NM_012334,,20,3214,AAGGCGTCGTCGTCGCCTTC,, 40 2388,NM_012334,,20,3208,TCGTCGTCGGCTTCGAAGCC,, 2389,NM_012334,,20,3202,TCGGCTTCGAAGCCCTCATC,, 2390,NM_012334,,20,3196,TCGAAGCCCTCATCGACCTC,, 2391,NM_012334,,20,3190,CCCTCATCGACCTCCTCCTC, 2392,NM_012334,,20,3184,TCGACCTCCTCCTCTGGGTA,, 45 2393,NM 012334,,20,3178,TCCTCCTCTGGGTAGGGCTG,, 2394,NM_012334,,20,3172,TCTGGGTAGGGCTGGCTGAA,, 2395,NM_012334,,20,3166,TAGGGCTGGCTGAAGTTGAA,, 2396,NM_012334,,20,3160,TGGCTGAAGTTGAAGTTGGG,, 2397,NM_012334,,20,3154,AAGTTGAAGTTGGGCTTCTC,, 50 2398,NM_012334,,20,3148,AAGTTGGGCTTCTCCTCGCA,, 2399,NM_012334,,20,3142,GGCTTCTCCTCGCATGCGCT,, 2400,NM_012334,,20,3136,TCCTCGCATGCGCTCTCAGC,, 2401,NM_012334,,20,3130,CATGCGCTCTCAGCCAGCTC,, 2402,NM_012334,,20,3124,CTCTCAGCCAGCTCGCTGGA,, 2403,NM_012334,,20,3118,GCCAGCTCGCTGGAAAATTC,, 2404,NM_012334,,20,3112,TCGCTGGAAAATTCGCTTCC,, 2405,NM_012334,,20,3106,GAAAATTCGCTTCCCACCGA,, 2406,NM_012334,,20,3100,TCGCTTCCCACCGACAGGGA,, 2407,NM_012334,,20,3094,CCCACCGACAGGGACCGCTC,, 60 2408,NM_012334,,20,3088,GACAGGGACCGCTCGATATT,, 2409,NM_012334,,20,3082,GACCGCTCGATATTCCGGAC,, 2410,NM_012334,,20,3076,TCGATATTCCGGACACACTC,, 2411,NM_012334,,20,3070,TTCCGGACACACTCGTCGAT,, 2412,NM_012334,,20,3064,ACACACTCGTCGATCTCGTC,, 65 2413,NM_012334,,20,3058,TCGTCGATCTCGTCGAAATT,, 2414,NM_012334,,20,3052,ATCTCGTCGAAATTGAGGGA,, 2415,NM_012334,,20,3046,TCGAAATTGAGGGACTCGAG,, 2416,NM_012334,,20,3040,TTGAGGGACTCGAGGAACTC,, 2417,NM_012334,,20,3034,GACTCGAGGAACTCCTGGGC,, 70 2418,NM_012334,,20,3028,AGGAACTCCTGGGCCGCCCT,, 2419,NM_012334,,20,3022,TCCTGGGCCGCCCTGCACGC,, 2420,NM_012334,,20,3016,GCCGCCCTGCACGCTTCCTC,, 2421,NM_012334,,20,3010,CTGCACGCTTCCTCCAG,, 2422,NM_012334,,20,3004,GCTTCCTCCTCCAGCCTGCO,, 2423,NM_012334,,20,2998,TCCTCCAGCCTGCGGAGCTC,

2424,NM_012334,,20,2992,AGCCTGCGGAGCTCCTGGTC,, 2425,NM 012334,,20,2986,CGGAGCTCCTGGTCCCGCCG,, 2426,NM_012334,,20,2980,TCCTGGTCCCGCCGCTCCTG,, 2427,NM_012334,,20,2974,TCCCGCCGCTCCTGCAGCTT,, 2428,NM_012334,,20,2968,CGCTCCTGCAGCTTCTGCAG,, 2429,NM 012334,,20,2962,TGCAGCTTCTGCAGGGAAGC,, 2430,NM_012334,,20,2956,TTCTGCAGGGAAGCCTCGGT,, 2431,NM_012334,,20,2950,AGGGAAGCCTCGGTCAGCGA,, 2432,NM_012334,,20,2944,GCCTCGGTCAGCGACAGCTC,, 2433,NM 012334,,20,2938,GTCAGCGACAGCTCCTGCTG,, 2434,NM_012334,,20,2932,GACAGCTCCTGCTGCTCCTT,, 2435,NM_012334,,20,2926,TCCTGCTGCTCCTTCATGCG,, 2436,NM_012334,,20,2920,TGCTCCTTCATGCGCTGCAG,, 2437,NM_012334,,20,2914,TTCATGCGCTGCAGGTCCTC,, 2438,NM_012334,,20,2908,CGCTGCAGGTCCTCGATTTC,, 2439,NM_012334,,20,2902,AGGTCCTCGATTTCTTTCTC, 15 2440,NM_012334,,20,2896,TCGATTTCTTTCTCCAGACG,, 2441,NM_012334,,20,2890,TCTTTCTCCAGACGGAGGAT,, 2442,NM_012334,,20,2884,TCCAGACGGAGGATCTCTTC,, 2443,NM_012334,,20,2878,CGGAGGATCTCTTCCACCTG,, 20 2444,NM_012334,,20,2872,ATCTCTTCCACCTGCTTATT,, 2445,NM_012334,,20,2866,TCCACCTGCTTATTTTCCTT,, 2446,NM_012334,,20,2860,TGCTTATTTTCCTTCTGTTT,, 2447,NM_012334,,20,2854,TTTTCCTTCTGTTTCTCCAG,, 25 2448,NM_012334,,20,2848,TTCTGTTTCTCCAGTTCACG,, 2449,NM_012334,,20,2842,TTCTCCAGTTCACGGGTCAG,, 2450,NM_012334,,20,2836,AGTTCACGGGTCAGTTCAGC,, 2451,NM_012334,,20,2830,CGGGTCAGTTCAGCTTCCTT,, 2452,NM_012334,,20,2824,AGTTCAGCTTCCTTCTGGCT,, 30 2453,NM_012334,,20,2818,GCTTCCTTCTGGCTCTTCTG,, 2454,NM_012334,,20,2812,TTCTGGCTCTTCTGCAAGGC,, 2455,NM_012334,,20,2806,CTCTTCTGCAAGGCTTCGAG,, 2456,NM_012334,,20,2800,TGCAAGGCTTCGAGTTCTTG,, 2457,NM_012334,,20,2794,GCTTCGAGTTCTTGCTGCTT,, 2458,NM_012334,,20,2788,AGTTCTTGCTGCTTCCTCGT,, 2459,NM_012334,,20,2782,TGCTGCTTCCTCGTTTCTTC, 2460,NM_012334,,20,2776,TTCCTCGTTTCTTCTTCCTG,, 2461,NM 012334,,20,2770,GTTTCTTCTTCCTGCTGGGC, 2462,NM_012334,,20,2764,TCTTCCTGCTGGGCGCGGAG,, 2463,NM_012334,,20,2758,TGCTGGGCGCGGAGCTCGGC,, 2464,NM_012334,,20,2752,GCGCGGAGCTCGGCTTCTCT,, 2465,NM 012334,,20,2746,AGCTCGGCTTCTCTCGCTC,, 2466,NM_012334,,20,2740,GCTTCTCTCTCTCTCTC, 2467,NM_012334,,20,2734,CTTCGCTCTCTCTCTCTTTC, 2468,NM_012334,,20,2728,TCTCTCTCTCTTTTCTCTTTC,, 2469,NM_012334,,20,2722,TCTCTTTCTCTTTCTTCTTC,, 2470,NM_012334,,20,2716,TCTCTTTCTTCTTCCTCCCG,, 2471,NM_012334,,20,2710,TCTTCTTCCTCCCGTTTCTT,, 2472,NM_012334,,20,2704,TCCTCCCGTTTCTTCTTTC,, 50 2473,NM_012334,,20,2698,CGTTTCTTCTTTCTTCCTC,, 2474,NM 012334,,20,2692,TTCTTTTCTTCCTCTTCCTG,, 2475,NM_012334,,20,2686,TCTTCCTCTTCCTGTTTCTT,, 2476,NM_012334,,20,2680,TCTTCCTGTTTCTTCTTTC,, 2477,NM 012334,,20,2674,TGTTTCTTCTTCTTCTTG,, 2478,NM 012334,,20,2668,TTCTTTTCTTCTTGCTCCCT,, 2479,NM_012334,,20,2662,TCTTCTTGCTCCCTTTTCTC,, 2480,NM_012334,,20,2656,TGCTCCCTTTTCTCTGCCAG,, 2481,NM_012334,,20,2650,CTTTTCTCTGCCAGCAATTG,, 2482,NM 012334,,20,2644,TCTGCCAGCAATTGTCTGTA,, 2483,NM_012334,,20,2638,AGCAATTGTCTGTAAACTCT,, 2484,NM_012334,,20,2632,TGTCTGTAAACTCTCCGAGC,, 2485,NM_012334,,20,2626,TAAACTCTCCGAGCAATCTG,, 2486,NM 012334,,20,2620,CTCCGAGCAATCTGACCTCT., 2487,NM_012334,,20,2614,GCAATCTGACCTCTGAGTTG,, 2488,NM_012334,,20,2608,TGACCTCTGAGTTGCTTCTG,, 65 2489,NM_012334,,20,2602,CTGAGTTGCTTCTGGAAAAC,, 2490,NM 012334,,20,2596,TGCTTCTGGAAAACTATGGC., 2491,NM_012334,,20,2590,TGGAAAACTATGGCTGCCTT,, 2492,NM_012334,,20,2584,ACTATGGCTGCCTTTTTCAG,, 2493,NM_012334,,20,2578,GCTGCCTTTTTCAGGTGCAA, 70 2494,NM 012334,,20,2572,TTTTTCAGGTGCAAAAATCT,, 2495,NM 012334,,20,2566,AGGTGCAAAAATCTCCTCCT,, 2496,NM_012334,,20,2560,AAAAATCTCCTCCTCAGAAG,, 2497,NM_012334,,20,2554,CTCCTCCTCAGAAGGAATGC,, 2498,NM_012334,,20,2548,CTCAGAAGGAATGCTCTGTA,,

2499,NM_012334,,20,2542,AGGAATGCTCTGTAATTCTT,, 2500,NM_012334,,20,2536,GCTCTGTAATTCTTCTGTAT,, 2501,NM 012334,,20,2530,TAATTCTTCTGTATTATCAC,, 2502,NM_012334,,20,2524,TTCTGTATTATCACCACACA,, 2503,NM_012334,,20,2518,ATTATCACCACACAATAAAG,, 2504,NM_012334,,20,2512,ACCACACAATAAAGGACCTT,, 2505,NM_012334,,20,2506,CAATAAAGGACCTTTCTGTA,, 2506,NM_012334,,20,2500,AGGACCTTTCTGTATTGTTT,, 2507,NM_012334,,20,2494,TTTCTGTATTGTTTTCGTGC,, 2508,NM_012334,,20,2488,TATTGTTTTCGTGCTAAGAA,, 2509,NM_012334,,20,2482,TTTCGTGCTAAGAAGCCCAA,, 2510,NM_012334,,20,2476,GCTAAGAAGCCCAAGACATG,, 2511,NM_012334,,20,2470,AAGCCCAAGACATGGGCCCG,, 2512,NM_012334,,20,2464,AAGACATGGGCCCGAATCAC,, 15 2513,NM_012334,,20,2458,TGGGCCCGAATCACCATGGC,, 2514,NM_012334,,20,2452,CGAATCACCATGGCCGCGTG,, 2515,NM 012334,,20,2446,ACCATGGCCGCGTGGCTCAC,, 2516,NM_012334,,20,2440,GCCGCGTGGCTCACTTCCTC,, 2517,NM_012334,,20,2434,TGGCTCACTTCCTCTTCCCT,, 20 2518,NM_012334,,20,2428,ACTTCCTCTCCCTCCGCTT,, 2519,NM 012334,,20,2422,TCTTCCCTCCGCTTCTCCAG,, 2520,NM_012334,,20,2416,CTCCGCTTCTCCAGTTTCTG,, 2521,NM_012334,,20,2410,TTCTCCAGTTTCTGTTCCAA,, 2522,NM_012334,,20,2404,AGTTTCTGTTCCAAGGATTC,, 2523,NM 012334,,20,2398,TGTTCCAAGGATTCTCGAAG,, 2524,NM_012334,,20,2392,AAGGATTCTCGAAGAAGAC,, 2525,NM_012334,,20,2386,TCTCGAAGAAAGACCTTGGT,, 2526,NM_012334,,20,2380,AGAAAGACCTTGGTCTTCCC,, 2527,NM_012334,,20,2374,ACCTTGGTCTTCCCCAGCTG,, 30 2528,NM_012334,,20,2368,GTCTTCCCCAGCTGCCACTC,, 2529,NM_012334,,20,2362,CCCAGCTGCCACTCGCTGTT,, 2530,NM_012334,,20,2356,TGCCACTCGCTGTTGGAGGC,, 2531,NM_012334,,20,2350,TCGCTGTTGGAGGCATCATA,, 2532,NM_012334,,20,2344,TTGGAGGCATCATAGAGCTG,, 2533,NM_012334,,20,2338,GCATCATAGAGCTGCAGCAG, 35 2534,NM_012334,,20,2332,TAGAGCTGCAGCAGGCTCGT,, 2535,NM 012334,,20,2326,TGCAGCAGGCTCGTGCACTT,, 2536,NM_012334,,20,2320,AGGCTCGTGCACTTCCCTCG,, 2537,NM_012334,,20,2314,GTGCACTTCCCTCGGACGTC,, 40 2538,NM_012334,,20,2308,TTCCCTCGGACGTCCTCAGG,, 2539,NM_012334,,20,2302,CGGACGTCCTCAGGCAGAGC,, 2540,NM_012334,,20,2296,TCCTCAGGCAGAGCCAGATT,, 2541,NM_012334,,20,2290,GGCAGAGCCAGATTCCTCAT,, 2542,NM_012334,,20,2284,GCCAGATTCCTCATCAGCAC,, 45 2543,NM_012334,,20,2278,TTCCTCATCAGCACTTTATA,, 2544,NM 012334,,20,2272,ATCAGCACTTTATACCTTTT,, 2545,NM_012334,,20,2266,ACTTTATACCTTTTGTAAAA,, 2546,NM_012334,,20,2260,TACCTTTTGTAAAAGTCCTG,, 2547,NM_012334,,20,2254,TTGTAAAAGTCCTGAAAGGG,, 2548,NM_012334,,20,2248,AAGTCCTGAAAGGGTCTTCG,, 50 2549,NM_012334,,20,2242,TGAAAGGGTCTTCGGACCGC,, 2550,NM_012334,,20,2236,GGTCTTCGGACCGCATACCC,, 2551,NM_012334,,20,2230,CGGACCGCATACCCAGCTTT,, 2552,NM_012334,,20,2224,GCATACCCAGCTTTGCGGAT,, 55 2553,NM_012334,,20,2218,CCAGCTTTGCGGATTCTCAC,, 2554,NM_012334,,20,2212,TTGCGGATTCTCACAGTCTC,, 2555,NM_012334,,20,2206,ATTCTCACAGTCTCCAGCAT,, 2556,NM_012334,,20,2200,ACAGTCTCCAGCATCCCTGA,, 2557,NM_012334,,20,2194,TCCAGCATCCCTGAGTACCG,, 60 2558,NM_012334,,20,2188,ATCCCTGAGTACCGCAGCTG,, 2559,NM_012334,,20,2182,GAGTACCGCAGCTGGTTCAG,, 2560,NM 012334,,20,2176,CGCAGCTGGTTCAGCACAAC,, 2561,NM_012334,,20,2170,TGGTTCAGCACAACCGCCTG,, 2562,NM_012334,,20,2164,AGCACAACCGCCTGGTCAAA,, 65 2563,NM_012334,,20,2158,ACCGCCTGGTCAAACTGGTC,, 2564,NM_012334,,20,2152,TGGTCAAACTGGTCTGGCAT,, 2565,NM_012334,,20,2146,AACTGGTCTGGCATCTTCTG,, 2566,NM_012334,,20,2140,TCTGGCATCTTCTGCATGTT, 2567,NM_012334,,20,2134,ATCTTCTGCATGTTTGGCTT,, 70 2568,NM_012334,,20,2128,TGCATGTTTGGCTTGATACA,, 2569,NM_012334,,20,2122,TTTGGCTTGATACAGCGAAC,, 2570,NM_012334,,20,2116,TTGATACAGCGAACAAAGAA,, 2571,NM_012334,,20,2110,CAGCGAACAAAGAAAGGATT,, 2572,NM_012334,,20,2104,ACAAAGAAAGGATTAGAGGA,, 75 2573,NM_012334,,20,2098,AAAGGATTAGAGGAGCTTAG,,

2574,NM 012334,,20,2092,TTAGAGGAGCTTAGCGTTGC., 2575,NM_012334,,20,2086,GAGCTTAGCGTTGCCATTAA,, 2576,NM_012334,,20,2080,AGCGTTGCCATTAAGGAATG,, 2577,NM_012334,,20,2074,GCCATTAAGGAATGCAGTGA,, 2578,NM_012334,,20,2068,AAGGAATGCAGTGAGTCCTT,, 2579,NM_012334,,20,2062,TGCAGTGAGTCCTTGAACTG, 2580,NM_012334,,20,2056,GAGTCCTTGAACTGTGAGCT,, 2581,NM 012334,,20,2050,TTGAACTGTGAGCTGACTGT,, 2582,NM_012334,,20,2044,TGTGAGCTGACTGTAGGCCG,, 2583,NM_012334,,20,2038,CTGACTGTAGGCCGCCGATG,, 2584,NM_012334,,20,2032,GTAGGCCGCCGATGTTTGCT,, 2585,NM 012334,,20,2026,CGCCGATGTTTGCTTCCACA,, 2586,NM_012334,,20,2020,TGTTTGCTTCCACATTTCAA,, 2587,NM_012334,,20,2014,CTTCCACATTTCAAGGTATC,, 15 2588,NM_012334,,20,2008,CATTTCAAGGTATCCTGGTT,, 2589,NM_012334,,20,2002,AAGGTATCCTGGTTGTTGCG,, 2590,NM_012334,,20,1996,TCCTGGTTGTTGCGGCTTGA,, 2591,NM_012334,,20,1990,TTGTTGCGGCTTGAAACATG,, 2592,NM_012334,,20,1984,CGGCTTGAAACATGTTCAAA,, 20 2593,NM_012334,,20,1978,GAAACATGTTCAAAAAGATC,, 2594,NM_012334,,20,1972,TGTTCAAAAAGATCGTAGAT,, 2595,NM_012334,,20,1966,AAAAGATCGTAGATAAAGTC,, 2596,NM_012334,,20,1960,TCGTAGATAAAGTCAAATCG,, 2597,NM_012334,,20,1954,ATAAAGTCAAATCGGCTTTC,, 2598,NM_012334,,20,1948,TCAAATCGGCTTTCTCTTAG,, 2599,NM_012334,,20,1942,CGGCTTTCTCTTAGCAAATT,, 25 2600,NM_012334,,20,1936,TCTCTTAGCAAATTGAGAAG,, 2601,NM_012334,,20,1930,AGCAAATTGAGAAGGTCATC,, 2602,NM_012334,,20,1924,TTGAGAAGGTCATCTCGAAA,, 2603,NM_012334,,20,1918,AGGTCATCTCGAAATGTATC,, 30 2604,NM_012334,,20,1912,TCTCGAAATGTATCTCTGTT,, 2605,NM_012334,,20,1906,AATGTATCTCTGTTCTTCTC,, 2606,NM_012334,,20,1900,TCTCTGTTCTTCTCCAAGAT,, 2607,NM_012334,,20,1894,TTCTTCTCCAAGATACCTCG,, 35 2608,NM_012334,,20,1888,TCCAAGATACCTCGGACATC,, 2609,NM_012334,,20,1882,ATACCTCGGACATCATATTG,, 2610,NM_012334,,20,1876,CGGACATCATATTGCACCTC,, 2611,NM_012334,,20,1870,TCATATTGCACCTCTCCAGC,, 2612,NM_012334,,20,1864,TGCACCTCTCCAGCATAGTG,, 40 2613,NM 012334,,20,1858,TCTCCAGCATAGTGCTTCAC,, 2614,NM_012334,,20,1852,GCATAGTGCTTCACTCCAAA,, 2615,NM_012334,,20,1846,TGCTTCACTCCAAAATTGTT,, 2616,NM_012334,,20,1840,ACTCCAAAATTGTTAACTGC,, 2617,NM_012334,,20,1834,AAATTGTTAACTGCAACTCT,, 2618,NM_012334,,20,1828,TTAACTGCAACTCTGGGCTT,, 45 2619,NM_012334,,20,1822,GCAACTCTGGGCTTCACATA,, 2620,NM_012334,,20,1816,CTGGGCTTCACATAAAAGTG,, 2621,NM_012334,,20,1810,TTCACATAAAAGTGGTTATT,, 2622,NM_012334,,20,1804,TAAAAGTGGTTATTCGCATG,, 2623,NM_012334,,20,1798,TGGTTATTCGCATGCTGACT, 2624,NM_012334,,20,1792,TTCGCATGCTGACTGTGTAG,, 2625,NM_012334,,20,1786,TGCTGACTGTGTAGCTTCTC,, 2626,NM_012334,,20,1780,CTGTGTAGCTTCTCCAATAA,, 2627,NM_012334,,20,1774,AGCTTCTCCAATAAGGTGCT, 55 2628,NM_012334,,20,1768,TCCAATAAGGTGCTGTCTGT,, 2629,NM_012334,,20,1762,AAGGTGCTGTCTGTGGCTTG,, 2630,NM_012334,,20,1756,CTGTCTGTGGCTTGAGGAAA,, 2631,NM_012334,,20,1750,GTGGCTTGAGGAAAATGGCT, 2632,NM_012334,,20,1744,TGAGGAAAATGGCTTTCTTC, 60 2633,NM_012334,,20,1738,AAATGGCTTTCTTCATTGAT,, 2634,NM_012334,,20,1732,CTTTCTTCATTGATAAGGGC,, 2635,NM_012334,,20,1726,TCATTGATAAGGGCTAGGAG,, 2636,NM_012334,,20,1720,ATAAGGGCTAGGAGGCCAAG,, 2637,NM_012334,,20,1714,GCTAGGAGGCCAAGTTTCTT,, 2638,NM_012334,,20,1708,AGGCCAAGTTTCTTCTCAAT,, 2639,NM_012334,,20,1702,AGTTTCTTCTCAATCAAGTC,, 2640,NM_012334,,20,1696,TTCTCAATCAAGTCCAGGCA,, 2641,NM_012334,,20,1690,ATCAAGTCCAGGCATTCTCC,, 2642,NM 012334,,20,1684,TCCAGGCATTCTCCATTGTC,, 2643,NM 012334,,20,1678,CATTCTCATTCTCATTCAT, 2644,NM 012334,,20,1672,CCATTGTCTATCCAGTCAAT, 2645,NM 012334,,20,1666,TCTATCCAGTCAATATCTTC, 2646,NM 012334,,20,1660,CAGTCAATATCTTCCCACAC,, 2647,NM_012334,,20,1654,ATATCTTCCCACACTAATCC,, 75 2648,NM 012334,,20,1648,TCCCACACTAATCCTTCCCG,,

2649,NM_012334,,20,1642,ACTAATCCTTCCCGGCTATA,, 2650,NM 012334,,20,1636,CCTTCCCGGCTATATTCTAG,, 2651,NM_012334,,20,1630,CGGCTATATTCTAGTTGTTC,, 2652,NM_012334,,20,1624,TATTCTAGTTGTTCTAAAGA,, 2653,NM_012334,,20,1618,AGTTGTTCTAAAGAAAAAT,, 2654,NM 012334,,20,1612,TCTAAAGAAAAAATATGCTT,, 2655,NM_012334,,20,1606,GAAAAAATATGCTTGTTGAA,, 2656,NM_012334,,20,1600,ATATGCTTGTTGAAGTACTC,, 2657,NM_012334,,20,1594,TTGTTGAAGTACTCCTGAAG,, 2658,NM_012334,,20,1588,AAGTACTCCTGAAGTTTCTC,, 2659,NM_012334,,20,1582,TCCTGAAGTTTCTCGTTTGC,, 2660,NM_012334,,20,1576,AGTTTCTCGTTTGCATAGTT,, 2661,NM_012334,,20,1570,TCGTTTGCATAGTTTATATT,, 2662,NM_012334,,20,1564,GCATAGTTTATATTGAACTG,, 2663,NM_012334,,20,1558,TTTATATTGAACTGTTCAAA,, 2664,NM_012334,,20,1552,TTGAACTGTTCAAAGTGATT,, 2665,NM_012334,,20,1546,TGTTCAAAGTGATTAACCTC,, 2666,NM_012334,,20,1540,AAGTGATTAACCTCAAAGTT,, 2667,NM_012334,,20,1534,TTAACCTCAAAGTTTTCAAA,, 20 2668,NM_012334,,20,1528,TCAAAGTTTTCAAATCCAAA,, 2669,NM_012334,,20,1522,TTTTCAAATCCAAAGATGTC,, 2670,NM_012334,,20,1516,AATCCAAAGATGTCGAGGAT,, 2671,NM_012334,,20,1510,AAGATGTCGAGGATGCCAAT,, 2672,NM_012334,,20,1504,TCGAGGATGCCAATAGACTT,, 25 2673,NM_012334,,20,1498,ATGCCAATAGACTTGAAGTC,, 2674,NM_012334,,20,1492,ATAGACTTGAAGTCCTCATT,, 2675,NM_012334,,20,1486,TTGAAGTCCTCATTGCCTTT,, 2676,NM_012334,,20,1480,TCCTCATTGCCTTTGATCCT,, 2677,NM_012334,,20,1474,TTGCCTTTGATCCTGCTGTT,, 30 2678,NM_012334,,20,1468,TTGATCCTGCTGTTGATCTT,, 2679,NM_012334,,20,1462,CTGCTGTTGATCTTCTTGAT,, 2680,NM_012334,,20,1456,TTGATCTTCTTGATTACCCA,, 2681,NM_012334,,20,1450,TTCTTGATTACCCACTCAAA,, 2682,NM_012334,,20,1444,ATTACCCACTCAAAGCAGCA,, 35 2683,NM_012334,,20,1438,CACTCAAAGCAGCACGCATA,, 2684,NM_012334,,20,1432,AAGCAGCACGCATACAGAGC,, 2685,NM_012334,,20,1426,CACGCATACAGAGCCATGGC,, 2686,NM_012334,,20,1420,TACAGAGCCATGGCCAGGGA,, 2687,NM_012334,,20,1414,GCCATGGCCAGGGAGTCCCT,, 2688,NM_012334,,20,1408,GCCAGGGAGTCCCTGCTGTC,, 2689,NM_012334,,20,1402,GAGTCCCTGCTGTCTACTGC,, 2690,NM_012334,,20,1396,CTGCTGTCTACTGCCTGTTG,, 2691,NM_012334,,20,1390,TCTACTGCCTGTTGAACATT,, 2692,NM_012334,,20,1384,GCCTGTTGAACATTGAGAGG,, 45 2693,NM_012334,,20,1378,TGAACATTGAGAGGCGTGAG,, 2694,NM_012334,,20,1372,TTGAGAGGCGTGAGGATCTC,, 2695,NM_012334,,20,1366,GGCGTGAGGATCTCTTCTCC,, 2696,NM_012334,,20,1360,AGGATCTCTTCTCCCCTGAG,, 2697,NM_012334,,20,1354,TCTTCTCCCCTGAGGAACAT,, 50 2698,NM_012334,,20,1348,CCCCTGAGGAACATTGATCT,, 2699,NM_012334,,20,1342,AGGAACATTGATCTCTGGGT,, 2700,NM_012334,,20,1336,ATTGATCTCTGGGTCAAAGC,, 2701,NM_012334,,20,1330,CTCTGGGTCAAAGCATCTGT,, 2702,NM_012334,,20,1324,GTCAAAGCATCTGTGAGCTG, 55 2703,NM_012334,,20,1318,GCATCTGTGAGCTGTGTTGG,, 2704,NM_012334,,20,1312,GTGAGCTGTGTTGGGTCCAG,, 2705,NM_012334,,20,1306,TGTGTTGGGTCCAGCCCAAG,, 2706,NM_012334,,20,1300,GGGTCCAGCCCAAGTAACTC,, 2707,NM_012334,,20,1294,AGCCCAAGTAACTCCGCAGA,, 2708,NM_012334,,20,1288,AGTAACTCCGCAGATCTGCC,, 60 2709,NM_012334,,20,1282,TCCGCAGATCTGCCCAAAGC,, 2710,NM_012334,,20,1276,GATCTGCCCAAAGCTGTTTT,, 2711,NM_012334,,20,1270,CCCAAAGCTGTTTTGAAGGA... 2712,NM_012334,,20,1264,GCTGTTTTGAAGGAAACCTG,, 2713,NM_012334,,20,1258,TTGAAGGAAACCTGTGCCCC,, 2714,NM_012334,,20,1252,GAAACCTGTGCCCCACCAGC,, 2715,NM_012334,,20,1246,TGTGCCCCACCAGCAGTGAT,, 2716,NM_012334,,20,1240,CCACCAGCAGTGATAAATTC,, 2717,NM_012334,20,1234,GCAGTGATAAATTCTATGTT,, 2718,NM_012334,20,1228,ATAAATTCTATGTTCCCAAG,, 2719,NM_012334,20,1222,TCTATGTTCCCAAGATGCAG, 2720,NM_012334,,20,1216,TTCCCAAGATGCAGTATACC,, 2721,NM_012334,,20,1210,AGATGCAGTATACCAGCAAG,, .2722,NM_012334,,20,1204,AGTATACCAGCAAGCAGCCT,, 2723,NM_012334,,20,1198,CCAGCAAGCAGCCTCGACAC,,

2724,NM_012334,,20,1192,AGCAGCCTCGACACTTCCCG,, 2725,NM_012334,,20,1186,CTCGACACTTCCCGAACTTC,, 2726,NM_012334,,20,1180,ACTTCCCGAACTTCCTCTT,, 2727,NM_012334,,20,1174,CGAACTTCCTCCTTGCTGAA,, 2728,NM_012334,,20,1168,TCCTCCTTGCTGAACTGCAT,, 2729,NM_012334,,20,1162,TTGCTGAACTGCATCACGTC,, 2730,NM 012334,,20,1156,AACTGCATCACGTCCATTGC,, 2731,NM_012334,,20,1150,ATCACGTCCATTGCCGTAAT,, 2732,NM_012334,,20,1144,TCCATTGCCGTAATAACTTC,, 10 2733,NM_012334,,20,1138,GCCGTAATAACTTCCCTAAA,, 2734,NM_012334,,20,1132,ATAACTTCCCTAAAGGATTC,, 2735,NM_012334,,20,1126,TCCCTAAAGGATTCCTGGTC,, 2736,NM_012334,,20,1120,AAGGATTCCTGGTCACTGAT,, 2737,NM_012334,,20,1114,TCCTGGTCACTGATTGTCTT,, 15 2738,NM 012334,,20,1108,TCACTGATTGTCTTGTCTTC,, 2739,NM_012334,,20,1102,ATTGTCTTGTCTTCTACACA,, 2740,NM_012334,,20,1096,TTGTCTTCTACACATCCAGA,, 2741,NM_012334,,20,1090,TCTACACATCCAGACTGATT,, 2742,NM_012334,,20,1084,CATCCAGACTGATTCAAGTA,, 2743,NM_012334,,20,1078,GACTGATTCAAGTAGTGGTA,, 2744,NM_012334,,20,1072,TTCAAGTAGTGGTAGTTTTC,, 2745,NM_012334,,20,1066,TAGTGGTAGTTTTCTGGCGT,, 2746,NM 012334,,20,1060,TAGTTTTCTGGCGTAGATAA,, 2747,NM_012334,,20,1054,TCTGGCGTAGATAAATAAAA,, 25 2748,NM_012334,,20,1048,GTAGATAAATAAAATTCTTC,, 2749,NM_012334,,20,1042,AAATAAAATTCTTCTCTTTC,, 2750,NM 012334,,20,1036,AATTCTTCTCTTTCTTCATG,, 2751,NM_012334,,20,1030,TCTCTTTCTTCATGTTCCAG,, 2752,NM_012334,,20,1024,TCTTCATGTTCCAGCCCTGC, 30 2753,NM_012334,,20,1018,TGTTCCAGCCCTGCCAGCAG,, 2754,NM_012334,,20,1012,AGCCCTGCCAGCAGTGCATA,, 2755,NM_012334,,20,1006,GCCAGCAGTGCATAAAATAT,, 2756,NM_012334,,20,1000,AGTGCATAAAATATGTGATA,, 2757,NM_012334,,20,994,TAAAATATGTGATAATTCCT,, 35 2758,NM_012334,,20,988,ATGTGATAATTCCTTTCCCC,, 2759,NM_012334,,20,982,TAATTCCTTTCCCCGGGATT,, 2760,NM_012334,,20,976,CTTTCCCCGGGATTTTGCCT,, 2761,NM_012334,,20,970,CCGGGATTTTGCCTTACTAC,, 2762,NM_012334,,20,964,TTTTGCCTTACTACTCGGTT,, 40 2763,NM 012334,,20,958,CTTACTACTCGGTTTTTTTC,, 2764,NM_012334,,20,952,ACTCGGTTTTTTTCTAATAA,, 2765,NM_012334,,20,946,TTTTTTCTAATAAATAATC,, 2766,NM_012334,,20,940,TCTAATAAATAATCTACAAT,, 2767,NM_012334,,20,934,AAATAATCTACAATTCTCCC,, 2768,NM_012334,,20,928,TCTACAATTCTCCCGCCCTG,, 2769,NM_012334,,20,922,ATTCTCCCGCCCTGAATATT,, 2770,NM_012334,,20,916,CCGCCCTGAATATTTCCTTT,, 2771,NM 012334,,20,910,TGAATATTTCCTTTCTGACA,, 2772,NM_012334,,20,904,TTTCCTTTCTGACAGATGTT,, 50 2773,NM_012334,,20,898,TTCTGACAGATGTTCAGCTG,, 2774,NM_012334,,20,892,CAGATGTTCAGCTGAACAAA,, 2775,NM 012334,,20,886,TTCAGCTGAACAAACTTCCC,, 2776,NM_012334,,20,880,TGAACAAACTTCCCAAAGCG,, 2777,NM_012334,,20,874,AACTTCCCAAAGCGACTAGA,, 55 2778,NM_012334,,20,868,CCAAAGCGACTAGAGTTGTT,, 2779,NM_012334,,20,862,CGACTAGAGTTGTTGTTGTA,, 2780,NM_012334,,20,856,GAGTTGTTGTTGTACACGGT,, 2781,NM_012334,,20,850,TTGTTGTACACGGTCTTCGC, 2782,NM_012334,,20,844,TACACGGTCTTCGCATTGCC,, 60 2783,NM_012334,,20,838,GTCTTCGCATTGCCGAAAGC,, 2784,NM_012334,,20,832,GCATTGCCGAAAGCTTCCAT,, 2785,NM_012334,,20,826,CCGAAAGCTTCCATGATGGG,, 2786,NM_012334,,20,820,GCTTCCATGATGGGGCTGCT,, 2787,NM_012334,,20,814,ATGATGGGGCTGCTTTCAAG,, 2788,NM_012334,,20,808,GGGCTGCTTTCAAGAATAGC,, 2789,NM 012334,,20,802,CTTTCAAGAATAGCTCGTTC,, 2790,NM_012334,,20,796,AGAATAGCTCGTTCAACACA,, 2791,NM_012334,,20,790,GCTCGTTCAACACAGGATGT,, 2792,NM 012334,,20,784,TCAACACAGGATGTCTTCTC,, 2793,NM_012334,,20,778,CAGGATGTCTTCTCCTTTAA,, 2794,NM_012334,,20,772,GTCTTCTCCTTTAAGGACAA,, 2795,NM_012334,,20,766,TCCTTTAAGGACAATTCCAA,, 2796,NM_012334,,20,760,AAGGACAATTCCAAAGACTG,, 2797,NM_012334,,20,754,AATTCCAAAGACTGTTGACT,, 75 2798,NM_012334,,20,748,AAAGACTGTTGACTGATGAC,,

2799,NM_012334,,20,742,TGTTGACTGATGACTGACAG,, 2800,NM_012334,,20,736,CTGATGACTGACAGAAACTT,, 2801,NM_012334,,20,730,ACTGACAGAAACTTGAGGAT,, 2802,NM_012334,,20,724,AGAAACTTGAGGATCAATTT,, 2803,NM_012334,,20,718,TTGAGGATCAATTTAGTGCT,, 2804,NM_012334,,20,712,ATCAATTTAGTGCTTTCGGT,, 2805,NM_012334,,20,706,TTAGTGCTTTCGGTTTTACC,, 2806,NM_012334,,20,700,CTTTCGGTTTTACCTGCCCC,, 2807,NM_012334,,20,694,GTTTTACCTGCCCCACTTTC,, 10 2808,NM_012334,,20,688,CCTGCCCCACTTTCACCACT,, 2809,NM_012334,,20,682,CCACTTTCACCACTGATGAG,, 2810,NM_012334,,20,676,TCACCACTGATGAGGATGCA,, 2811,NM_012334,,20,670,CTGATGAGGATGCACTGGTT,, 2812,NM 012334,20,664,AGGATGCACTGGTTGTCGTA, 2813,NM_012334,,20,658,CACTGGTTGTCGTAGCGCTT., 2814,NM_012334,20,652,TTGTCGTAGCGCTTCCACAG,, 2815,NM_012334,,20,646,TAGCGCTTCCACAGGCAGCG,, 2816,NM_012334,,20,640,TTCCACAGGCAGCGGTAGCA,, 2817,NM_012334,,20,634,AGGCAGCGGTAGCACTCGTT,, 2818,NM_012334,,20,628,CGGTAGCACTCGTTGGCGAT,, 20 2819,NM_012334,,20,622,CACTCGTTGGCGATGGCGAA,, 2820,NM_012334,,20,616,TTGGCGATGGCGAAGATGTG,, 2821,NM_012334,,20,610,ATGGCGAAGATGTGCGGGGG,, 2822,NM_012334,,20,604,AAGATGTGCGGGGGCAGCTC,, 25 2823,NM_012334,,20,598,TGCGGGGGCAGCTCGCCCAG,, 2824,NM_012334,,20,592,GGCAGCTCGCCCAGGTGGCG,, 2825,NM_012334,,20,586,TCGCCCAGGTGGCGCCGGCT,, 2826,NM_012334,,20,580,AGGTGGCGCCGGCTGTACTG,, 2827,NM_012334,,20,574,CGCCGGCTGTACTGCTCCAT,, 30 2828,NM_012334,,20,568,CTGTACTGCTCCATGGTGGC,, 2829,NM_012334,,20,562,TGCTCCATGGTGGCAGGCTC,, 2830,NM_012334,,20,556,ATGGTGGCAGGCTCGTACAG,, 2831,NM_012334,,20,550,GCAGGCTCGTACAGCCCGGC,, 2832,NM_012334,,20,544,TCGTACAGCCCGGCGATGGG, 35 2833,NM_012334,,20,538,AGCCCGGCGATGGGCTGGTA,, 2834,NM_012334,,20,532,GCGATGGGCTGGTAGGGGTT,, 2835,NM_012334,,20,526,GGCTGGTAGGGGTTCACGGA,, 2836,NM_012334,,20,520,TAGGGGTTCACGGAGGCCAG,, 2837,NM 012334,,20,514,TTCACGGAGGCCAGGATGGA,, 2838,NM_012334,,20,508,GAGGCCAGGATGGAGCCGAT,, 2839,NM_012334,,20,502,AGGATGGAGCCGATGTAGGT,, 2840,NM_012334,,20,496,GAGCCGATGTAGGTATATAT,, 2841,NM_012334,,20,490,ATGTAGGTATATATTTGATT,, 2842,NM_012334,,20,484,GTATATATTTGATTTCTCTT,, 2843,NM_012334,,20,478,ATTTGATTTCTCTTATACCG,, 2844,NM_012334,,20,472,TTTCTCTTATACCGCTGGAA,, 2845,NM_012334,,20,466,TTATACCGCTGGAATAAGTT,, 2846,NM 012334,,20,460,CGCTGGAATAAGTTATACAT., 2847,NM_012334,,20,454,AATAAGTTATACATGATGGA,, 2848,NM_012334,,20,448,TTATACATGATGGAGCCGCC,, 50 2849,NM_012334,,20,442,ATGATGGAGCCGCCATGGAG,, 2850,NM 012334,,20,436,GAGCCGCCATGGAGCTCTGT,, 2851,NM_012334,,20,430,CCATGGAGCTCTGTCAAGGA,, 2852,NM_012334,,20,424,AGCTCTGTCAAGGACGCCAT,, 55 2853,NM_012334,,20,418,GTCAAGGACGCCATGTCATC,, 2854,NM_012334,,20,412,GACGCCATGTCATCCACGCC,, 2855,NM_012334,,20,406,ATGTCATCCACGCCCTCCTC,, 2856,NM_012334,,20,400,TCCACGCCCTCCTCGTTCGT,, 2857,NM_012334,,20,394,CCCTCCTCGTTCGTGGGGTG,, 2858,NM_012334,,20,388,TCGTTCGTGGGGTGCATAGC,, 2859,NM_012334,,20,382,GTGGGGTGCATAGCAGTCAC,, 2860,NM_012334,,20,376,TGCATAGCAGTCACCTTCTG,, 2861,NM_012334,,20,370,GCAGTCACCTTCTGGTGGGT,, 2862,NM_012334,,20,364,ACCTTCTGGTGGGTAATTGT,, 2863,NM_012334,,20,358,TGGTGGGTAATTGTGCTCTG,, 2864,NM_012334,,20,352,GTAATTGTGCTCTGCTTGTA,, 2865,NM_012334,,20,346,GTGCTCTGCTTGTAAGTGAA,, 2866,NM_012334,,20,340,TGCTTGTAAGTGAATACCTG,, 2867,NM_012334,,20,334,TAAGTGAATACCTGACCATA,, 2868,NM_012334,,20,328,AATACCTGACCATAGTCTGT,, 2869,NM_012334,,20,322,TGACCATAGTCTGTCCGGAA,, 2870,NM_012334,,20,316,TAGTCTGTCCGGAAGACGAC,, 2871.NM_012334,,20,310,GTCCGGAAGACGACGATGCC,, 2872.NM 012334,,20,304,AAGACGACGATGCCTTCTGC,, 75 2873,NM_012334,,20,298,ACGATGCCTTCTGCACAGGA,

2874,NM_012334,,20,292,CCTTCTGCACAGGAATTTAC,, 2875,NM_012334,,20,286,GCACAGGAATTTACAGTACT,, 2876,NM_012334,,20,280,GAATTTACAGTACTTGGAAA,, 2877,NM_012334,,20,274,ACAGTACTTGGAAAATGCTG,, 2878,NM_012334,,20,268,CTTGGAAAATGCTGGCCATT,, 2879,NM_012334,,20,262,AAATGCTGGCCATTTTCTCT,, 2880,NM_012334,,20,256,TGGCCATTTTCTCTCAGCCA,, 2881,NM 012334,,20,250,TTTTCTCTCAGCCAGACCCG,, 2882,NM_012334,,20,244,CTCAGCCAGACCCGTGTTCC,, 2883,NM_012334,,20,238,CAGACCCGTGTTCCCTCGGT,, 2884,NM_012334,,20,232,CGTGTTCCCTCGGTGAAGAA,, 2885,NM 012334,,20,226,CCCTCGGTGAAGAAGTTATC,, 2886,NM_012334,,20,220,GTGAAGAAGTTATCCATTGT,, 2887,NM_012334,,20,214,AAGTTATCCATTGTTCCAGC,, 15 2888,NM_012334,,20,208,TCCATTGTTCCAGCGCAGTC,, 2889,NM_012334,,20,202,GTTCCAGCGCAGTCCCGGAC,, 2890,NM_012334,,20,196,GCGCAGTCCCGGACTCGCCG,, 2891,NM_012334,,20,190,TCCCGGACTCGCCGAGTGCC, 2892,NM_012334,,20,184,ACTCGCCGAGTGCCGCTCCG,, 20 2893,NM_012334,,20,178,CGAGTGCCGCTCCGACTCGC,, 2894,NM_012334,,20,172,CCGCTCCGACTCGCGGAAGT,, 2895,NM_012334,,20,166,CGACTCGCGGAAGTCAGCGC,, 2896,NM_012334,,20,160,GCGGAAGTCAGCGCCGCCGC,, 2897,NM 012334,,20,154,GTCAGCGCCGCCGCGGGTCC,, 2898,NM_012334,,20,148,GCCGCCGCGGGTCCGGGGAA,, 2899,NM_012334,,20,142,GCGGGTCCGGGGAAACCATG,, 2900,NM_012334,,20,136,CCGGGGAAACCATGCGTGTC,, 2901,NM_012334,,20,130,AAACCATGCGTGTCACGGCG,, 2902,NM_012334,,20,124,TGCGTGTCACGGCGCCACTC,, 2903,NM_012334,,20,118,TCACGGCGCCACTCCCGAGG,, 30 2904,NM_012334,,20,112,CGCCACTCCCGAGGACGCGC,, 2905,NM_012334,,20,106,TCCCGAGGACGCGCCCCGC,, 2906,NM_012334,,20,100,GGACGCGCGCCCGCGGGGCT,, 2907,NM_012334,,20,94,GCGCCCGCGGGGCTCCCCTG,, 2908,NM_012334,,20,88,GCGGGGCTCCCCTGCTGCCA, 35 2909,NM_012334,,20,82,CTCCCCTGCTGCCATCGCCC,, 2910,NM_012334,,20,76,TGCTGCCATCGCCCGGTCCC,, 2911,NM_012334,,20,70,CATCGCCCGGTCCCTTCTTG,, 2912,NM_012334,,20,64,CCGGTCCCTTCTTGTCCTTC, 40 2913,NM_012334,,20,58,CCTTCTTGTCCTTCTCACCT,, 2914,NM_012334,,20,52,TGTCCTTCTCACCTTTTGTT,, 2915,NM_012334,,20,46,TCTCACCTTTTGTTCGCCCA,, 2916,NM_012334,,20,40,CTTTTGTTCGCCCAAACCCA,, 2917,NM_012334,,20,34,TTCGCCCAAACCCAAGTCCC,, 45 2918,NM_012334,,20,28,CAAACCCAAGTCCCTAACTC,, 2919,NM 012334,,20,22,CAAGTCCCTAACTCGCCCGT,, 2920,NM_012334,,20,16,CCTAACTCGCCCGTCCCGAC,, 2921,NM_012334,,20,10,TCGCCCGTCCCGACGGCAGC,, 2922,NM_012334,,20,4,GTCCCGACGCCAGCCTTTGT,, 50 2923,NM_001743,,20,2171,TTTTTTTTTTTTTTTTTTTC,, 2924,NM_001743,,20,2165,TTTTTTTTTTTTTCAGGTAG,, 2925,NM_001743,,20,2159,TTTTTTTCAGGTAGTCACTG,, 2926,NM_001743,,20,2153,TCAGGTAGTCACTGTATTTT,, 2927,NM_001743,,20,2147,AGTCACTGTATTTTATTGGA,, 2928,NM_001743,,20,2141,TGTATTTTATTGGAAAACAT,, 2929,NM_001743,,20,2135,TTATTGGAAAACATTGATAT,, 2930,NM_001743,,20,2129,GAAAACATTGATATATTT,, 2931,NM_001743,,20,2123,ATTGATATATATTTTCTTC,, 2932,NM_001743,,20,2117,ATATATTTTTCTTCACAGCT,,2933,NM_001743,,20,2111,TTTCTTCACAGCTTGAACT, 60 2934,NM_001743,,20,2105,TCACAGCTTGAACTGAACAC,, 2935,NM_001743,,20,2099,CTTGAACTGAACACAATATT,, 2936,NM_001743,,20,2093,CTGAACACAATATTGCCCGG,, 2937,NM_001743,,20,2087,ACAATATTGCCCGGTTTAAA,, 2938,NM_001743,,20,2081,TTGCCCGGTTTAAAAAAAAC,, 65 2939,NM_001743,,20,2075,GGTTTAAAAAAAAAAAAACAAAACC,, 2941,NM_001743,,20,2063,ACAAAACATTCCGA,, 2942,NM_001743,,20,2057,CCAAAACATTCCGAAAATGT,, 2943,NM_001743,,20,2051,CATTCCGAAAATGTCCACAG,, 70 2944,NM_001743,,20,2045,GAAAATGTCCACAGCCTCAC,, 2945,NM_001743,,20,2039,GTCCACAGCCTCACGCCTAC,, 2946,NM_001743,,20,2033,AGCCTCACGCCTACCTGACC,, 2947,NM_001743,,20,2027,ACGCCTACCTGACCTTACCC,, 2948,NM 001743,,20,2021,ACCTGACCTTACCCTCAGCT,,

2949,NM_001743,,20,2015,CCTTACCCTCAGCTCTTGGC,, 2950,NM 001743,,20,2009,CCTCAGCTCTTGGCTGGGTC,, 2951,NM_001743,,20,2003,CTCTTGGCTGGGTCTCCCAC,, 2952,NM_001743,,20,1997,GCTGGGTCTCCCACTATGCC,, 2953,NM 001743,,20,1991,TCTCCCACTATGCCCCATCC,, 2954,NM_001743,,20,1985,ACTATGCCCCATCCCTCCTT,, 2955,NM_001743,,20,1979,CCCCATCCCTCCTTCCCTCA,, 2956,NM 001743,,20,1973,CCCTCCTTCCCTCAGAGGCT,, 2957,NM 001743,,20,1967,TTCCCTCAGAGGCTGGGTGC,, 2958,NM_001743,,20,1961,CAGAGGCTGGGTGCCAGAGG,, 2959,NM_001743,,20,1955,CTGGGTGCCAGAGGGTGGAT,, 2960,NM_001743,,20,1949,GCCAGAGGGTGGATGAGAAG,, 2961,NM_001743,,20,1943,GGGTGGATGAGAAGAGATTC,, 2962,NM_001743,,20,1937,ATGAGAAGAGATTCTCAAAG,, 15 2963,NM_001743,,20,1931,AGAGATTCTCAAAGCTGGGC,, 2964,NM_001743,,20,1925,TCTCAAAGCTGGGCAGGTCC,, 2965,NM_001743,,20,1919,AGCTGGGCAGGTCCCAGGAA,, 2966,NM_001743,,20,1913,GCAGGTCCCAGGAAAAGCCA., 2967,NM_001743,,20,1907,CCCAGGAAAAGCCACTTGAT,, 20 2968,NM_001743,,20,1901,AAAAGCCACTTGATCGACCT,, 2969,NM_001743,,20,1895,CACTTGATCGACCTGGGCAG,, 2970,NM_001743,,20,1889,ATCGACCTGGGCAGTGAGGG,, 2971,NM_001743,,20,1883,CTGGGCAGTGAGGGGAAGCA,, 2972,NM 001743,,20,1877,AGTGAGGGGAAGCAGGGGGT,, 2973,NM 001743,,20,1871,GGGAAGCAGGGGGTGGGGGG, 2974,NM_001743,,20,1865,CAGGGGGTGGGGGTGGGGT., 2975,NM_001743,,20,1859,GTGGGGGGTGGGGTGGGAG,, 2976,NM_001743,,20,1853,GGTGGGGTGGGGAGGTGGTG,, 2977,NM 001743,,20,1847,GTGGGGAGGTGGTGGGGGGA,, 30 2978,NM_001743,,20,1841,AGGTGGTGGGGGGAGCCAGA,, 2979,NM_001743,,20,1835,TGGGGGGGGGCCAGATGAAAT,, 2980,NM_001743,,20,1829,GAGCCAGATGAAATGAACAG,, 2981,NM_001743,,20,1823,GATGAAATGAACAGAAAAGG,, 2982,NM_001743,,20,1817,ATGAACAGAAAAGGGGAAAA,, 2983,NM_001743,,20,1811,AGAAAAGGGGAAAAAACCCA,, 35 2984,NM_001743,,20,1805,GGGGAAAAAACCCAGACGAC,, 2985,NM 001743,,20,1799,AAAACCCAGACGACTGAACT,, 2986,NM_001743,,20,1793,CAGACGACTGAACTGCCCAC,, _2987,NM_001743,,20,1787,ACTGAACTGCCCACATTGAC,, 40 2988,NM_001743,,20,1781,CTGCCCACATTGACTTACTT,, 2989,NM_001743,,20,1775,ACATTGACTTACTTGTCCCA,, 2990,NM_001743,,20,1769,ACTTACTTGTCCCAGAGGCG,, 2991,NM_001743,,20,1763,TTGTCCCAGAGGCGAAAGTC,, 2992,NM_001743,,20,1757,CAGAGGCGAAAGTCAGAAGC, 45 2993,NM_001743,,20,1751,CGAAAGTCAGAAGCAAGGGC,, 2994,NM 001743,,20,1745,TCAGAAGCAAGGGCACGGAT,, 2995,NM_001743,,20,1739,GCAAGGGCACGGATCATGCT,, 2996,NM_001743,,20,1733,GCACGGATCATGCTCTCCGC,, 2997,NM_001743,,20,1727,ATCATGCTCTCCGCTGGGGG,, 50 2998,NM_001743,,20,1721,CTCTCCGCTGGGGGAGTATG,, 2999,NM_001743,,20,1715,GCTGGGGGAGTATGGGGGCA,, 3000,NM_001743,,20,1709,GGAGTATGGGGGCAGGCAGG, 3001,NM_001743,,20,1703,TGGGGGCAGGCAGGTGGGCG,, 3002,NM_001743,,20,1697,CAGGCAGGTGGGCGAGGGAA,, 3003,NM_001743,,20,1691,GGTGGGCGAGGGAAGAGGCA,, 3004,NM_001743,,20,1685,CGAGGGAAGAGGCAGGGAAG, 3005,NM_001743,,20,1679,AAGAGGCAGGGAAGAGGGCA,, 3006,NM_001743,,20,1673,CAGGGAAGAGGGCACGGAGC,, 3007,NM_001743,,20,1667,AGAGGGCACGGAGCACAGAT,, 3008,NM_001743,,20,1661,CACGGAGCACAGATGTGAGG,, 60 3009,NM_001743,,20,1655,GCACAGATGTGAGGAAGCGG,, 3010,NM_001743,,20,1649,ATGTGAGGAAGCGGCGCCAA,, 3011,NM_001743,,20,1643,GGAAGCGGCGCCAAGTCACC,, 3012,NM_001743,,20,1637,GGCGCCAAGTCACCACGGAG,, 3013,NM_001743,,20,1631,AAGTCACCACGGAGAAGCGG, 3014,NM_001743,,20,1625,CCACGGAGAAGCGGGAGGTG,, 3015,NM_001743,,20,1619,AGAAGCGGGAGGTGCTGGCG,, 3016,NM_001743,,20,1613,GGGAGGTGCTGGCGGACCAG,, 3017,NM_001743,,20,1607,TGCTGGCGGACCAGGACGCA,, 3018,NM_001743,,20,1601,CGGACCAGGACGCAGAGGCT,, 3019,NM_001743,,20,1595,AGGACGCAGAGGCTGCTGTA,, 3020,NM_001743,,20,1589,CAGAGGCTGCTGTAGCTGCC,, 3021,NM_001743,,20,1583,CTGCTGTAGCTGCCGTCCCC,, 3022,NM_001743,,20,1577,TAGCTGCCGTCCCCTGGGCA,, 3023,NM_001743,,20,1571,CCGTCCCCTGGGCAGCTGGC,

3024,NM_001743,,20,1565,CCTGGGCAGCTGGCCGACAA,, 3025,NM_001743,,20,1559,CAGCTGGCCGACAAGACTGT,, 3026,NM_001743,,20,1553,GCCGACAAGACTGTTTTATT,, 3027,NM_001743,,20,1547,AAGACTGTTTTATTGCAGGT,, 3028,NM_001743,,20,1541,GTTTTATTGCAGGTGCGTTC,, 3029,NM_001743,,20,1535,TTGCAGGTGCGTTCTCTTGA,, 3030,NM_001743,,20,1529,GTGCGTTCTCTTGAGAGCGT,, 3031,NM_001743,,20,1523,TCTCTTGAGAGCGTGGTGGG,, 3032,NM_001743,,20,1517,GAGAGCGTGGTGGGGCCCAT,, 10 3033,NM_001743,,20,1511,GTGGTGGGGCCCATCTTCCC,, 3034,NM 001743,,20,1505,GGGCCCATCTTCCCTCTCCC,, 3035,NM_001743,,20,1499,ATCTTCCCTCTCCCACCCT,, 3036,NM_001743,,20,1493,CCTCTCCCCACCCTTTAGCT,, 3037,NM_001743,,20,1487,CCCACCCTTTAGCTAGCCCA,, 15 3038,NM 001743,,20,1481,CTTTAGCTAGCCCAGCATGG,, 3039,NM_001743,,20,1475,CTAGCCCAGCATGGTTCTGA,, 3040,NM_001743,,20,1469,CAGCATGGTTCTGAACAAAA,, 3041,NM_001743,,20,1463,GGTTCTGAACAAAATGAAAG,, 3042,NM_001743,,20,1457,GAACAAAATGAAAGTCTTAA,, 20 3043,NM_001743,,20,1451,AATGAAAGTCTTAAGGGCCA,, 3044,NM_001743,,20,1445,AGTCTTAAGGGCCATAGAGG,, 3045,NM_001743,,20,1439,AAGGGCCATAGAGGGGAAAG,, 3046,NM 001743,,20,1433,CATAGAGGGGAAAGAAAAA,, 3047,NM_001743,,20,1427,GGGGAAAGAAAAAAAAAGAG,, 25 3048,NM_001743,,20,1421,AGAAAAAAAAAAAGAGAACCAG,, 3049,NM_001743,,20,1415,AAAAAGAGAACCAGCACATT,, 3050,NM 001743,,20,1409,AGAACCAGCACATTACAAAG,, 3051,NM_001743,,20,1403,AGCACATTACAAAGCGACCA,, 3052,NM_001743,,20,1397,TTACAAAGCGACCATCCCCA,, 30 3053,NM_001743,,20,1391,AGCGACCATCCCACATCCA,, 3054,NM_001743,,20,1385,CATCCCCACATCCATTCCTA,, 3055,NM_001743,,20,1379,CACATCCATTCCTAGGACGG,, 3056,NM_001743,,20,1373,CATTCCTAGGACGGCCCTC,, 3057,NM_001743,,20,1367,TAGGACGGCCCTCAGGGCG, 35 3058,NM_001743,,20,1361,GGGCCCTCAGGGCGGTGGGT,, 3059,NM_001743,,20,1355,TCAGGGCGGTGGGTGCATCG,, 3060,NM_001743,,20,1349,CGGTGGGTGCATCGTGAGGA,, 3061,NM_001743,,20,1343,GTGCATCGTGAGGAGGGAGC,, 3062,NM_001743,,20,1337,CGTGAGGAGGGAGCGGCATG,, 40 3063,NM_001743,,20,1331,GAGGGAGCGGCATGGGATGT,, 3064,NM_001743,,20,1325,GCGGCATGGGATGTTAGCAC,, 3065,NM_001743,,20,1319,TGGGATGTTAGCACCAGGTA,, 3066,NM_001743,,20,1313,GTTAGCACCAGGTATTTACA,, 3067,NM_001743,,20,1307,ACCAGGTATTTACAGAACAG,, 45 3068,NM_001743,,20,1301,TATTTACAGAACAGCTCGAG,, 3069,NM_001743,,20,1295,CAGAACAGCTCGAGAGCGCT,, 3070,NM_001743,,20,1289,AGCTCGAGAGCGCTTCAGGA,, 3071,NM 001743,,20,1283,AGAGCGCTTCAGGAACGCGG,, 3072,NM_001743,,20,1277,CTTCAGGAACGCGGGCAAGT,, 3073,NM_001743,,20,1271,GAACGCGGGCAAGTCCAATC,, 50 3074,NM_001743,,20,1265,GGGCAAGTCCAATCTGCAGA,, 3075,NM_001743,,20,1259,GTCCAATCTGCAGAGTGGCC,, 3076,NM_001743,,20,1253,TCTGCAGAGTGGCCAAATGA,, 3077,NM_001743,,20,1247,GAGTGGCCAAATGAGCAGTC,, 55 3078,NM_001743,,20,1241,CCAAATGAGCAGTCCCCACC,, 3079,NM 001743,,20,1235,GAGCAGTCCCCACCCAGCCA,, 3080,NM_001743,,20,1229,TCCCCACCCAGCCAAACCTC,, 3081,NM_001743,,20,1223,CCCAGCCAAACCTCAGAAAG,, 3082,NM_001743,,20,1217,CAAACCTCAGAAAGCCAATC,, 60 3083,NM_001743,,20,1211,TCAGAAAGCCAATCAGATGG,, 3084,NM_001743,,20,1205,AGCCAATCAGATGGTTTCAG,, 3085,NM_001743,,20,1199,TCAGATGGTTTCAGAACAGC,, 3086,NM_001743,,20,1193,GGTTTCAGAACAGCAGCCAG,, 3087,NM_001743,,20,1187,AGAACAGCAGCCAGTGGGAT,, 3088,NM_001743,,20,1181,GCAGCCAGTGGGATGTGAGT,, 65 3089,NM_001743,,20,1175,AGTGGGATGTGAGTGTTGCC,, 3090,NM_001743,,20,1169,ATGTGAGTGTTGCCCACTGT,, 3091,NM_001743,,20,1163,GTGTTGCCCACTGTCAGTCC,, 3092,NM_001743,,20,1157,CCCACTGTCAGTCCCCTTCT,, 3093,NM_001743,20,1151,GTCAGTCCCCTTCTGTGAGT,, 3094,NM_001743,20,1145,CCCCTTCTGTGAGTTGGCCC,, 70 3095,NM_001743,,20,1139,CTGTGAGTTGGCCCCCTCGA,, 3096,NM_001743,,20,1133,GTTGGCCCCTCGACCCCCT,, 3097,NM_001743,,20,1127,CCCTCGACCCCCTCCTGGG,, 75 3098,NM_001743,,20,1121,GACCCCCTCCTGGGCCACAT,,

3099,NM_001743,,20,1115,CTCCTGGGCCACATCCAGTC,, 3100,NM_001743,,20,1109,GGCCACATCCAGTCAACGCC,, 3101,NM_001743,,20,1103,ATCCAGTCAACGCCACAATT,, 3102,NM_001743,,20,1097,TCAACGCCACAATTCCTCAA,, 3103,NM_001743,,20,1091,CCACAATTCCTCAACGCCCC,, 3104,NM_001743,,20,1085,TTCCTCAACGCCCCTCAGT,, 3105,NM_001743,,20,1079,AACGCCCCTCAGTCCTTCT,, 3106,NM 001743,,20,1073,CCCTCAGTCCTTCTGGAATG,, 3107,NM_001743,,20,1067,GTCCTTCTGGAATGCCTCTC,, 10 3108,NM_001743,,20,1061,CTGGAATGCCTCTCTTGGCA,, 3109,NM_001743,,20,1055,TGCCTCTCTTGGCACCCCTG,, 3110,NM_001743,,20,1049,TCTTGGCACCCCTGCCCAA,, 3111,NM_001743,,20,1043,CACCCCTGCCCCAACAGGCT,, 3112,NM_001743,,20,1037,TGCCCCAACAGGCTGCTGGG,, 15 3113,NM_001743,,20,1031,AACAGGCTGCTGGGATCTGC,, 3114,NM 001743,,20,1025,CTGCTGGGATCTGCACGTGG,, 3115,NM_001743,,20,1019,GGATCTGCACGTGGAATCAC,, 3116,NM_001743,,20,1013,GCACGTGGAATCACAGGGCT,, 3117,NM_001743,,20,1007,GGAATCACAGGGCTGGTTGC,, 20 3118,NM 001743,,20,1001,ACAGGGCTGGTTGCATGCAA,, 3119,NM_001743,,20,995,CTGGTTGCATGCAACGGCAA,, 3120,NM_001743,,20,989,GCATGCAACGGCAAAGGGCA,, 3121,NM_001743,,20,983,AACGGCAAAGGGCATGCTCT,, 3122,NM_001743,,20,977,AAAGGGCATGCTCTTCTGCC,, 25 3123,NM_001743,,20,971,CATGCTCTTCTGCCTGGGGG, 3124,NM_001743,,20,965,CTTCTGCCTGGGGGAGGGCC,, 3125,NM_001743,,20,959,CCTGGGGGAGGGCCTCTTGT,, 3126,NM_001743,,20,953,GGAGGGCCTCTTGTCCCTCC,, 3127,NM_001743,,20,947,CCTCTTGTCCCTCCCAGCAG,, 3128,NM_001743,,20,941,GTCCCTCCCAGCAGGTCCCG,, 30 3129,NM_001743,,20,935,CCCAGCAGGTCCCGGGACAG,, 3130,NM 001743,,20,929,AGGTCCCGGGACAGGGCTGG,, 3131,NM_001743,,20,923,CGGGACAGGGCTGGCAGCCA,,3132,NM_001743,,20,917,AGGGCTGGCAGCCACCCCAG, 35 3133,NM_001743,,20,911,GGCAGCCACCCCAGCACCCA,, 3134,NM 001743,,20,905,CACCCCAGCACCCAAAATAA,, 3135,NM_001743,,20,899,AGCACCCAAAATAAGATGAC., 3136,NM_001743,,20,893,CAAAATAAGATGACAAACAA, 3137,NM_001743,,20,887,AAGATGACAAACAAGAGGAA,, 40 3138,NM_001743,,20,881,ACAAACAAGAGGAAACAAAC,, 3139,NM_001743,,20,875,AAGAGGAAACAAACCAAAAT,, 3140,NM_001743,,20,869,AAACAAACCAAAATGGAGGA,, 3141,NM_001743,,20,863,ACCAAAATGGAGGAGAGCCA,, 3142,NM_001743,,20,857,ATGGAGGAGAGCCATCCGGG,, 3143,NM 001743,,20,851,GAGAGCCATCCGGGCTGGAG, 3144,NM_001743,,20,845,CATCCGGGCTGGAGGAGGGC,, 3145,NM_001743,,20,839,GGCTGGAGGAGGGCAGAGGC,, 3146,NM_001743,,20,833,AGGAGGGCAGAGGCTCCCCA,, 3147,NM_001743,,20,827,GCAGAGGCTCCCCAAGGGGA,, 3148,NM_001743,,20,821,GCTCCCCAAGGGGATCTGGG,, 3149,NM_001743,,20,815,CAAGGGGATCTGGGGAGGGC,, 3150,NM_001743,,20,809,GATCTGGGGAGGGCTTCAAC,, 3151,NM 001743,,20,803,GGGAGGGCTTCAACTTATGA,, 3152,NM_001743,,20,797,GCITCAACTTATGAATGCAT,, 3153,NM_001743,,20,791,ACTTATGAATGCATCAGGCC,, 55 3154,NM_001743,,20,785,GAATGCATCAGGCCTTGGAA,, 3155,NM_001743,,20,779,ATCAGGCCTTGGAAGACATG,, 3156,NM_001743,,20,773,CCTTGGAAGACATGGATGGA,, 3157,NM_001743,,20,767,AAGACATGGATGGAAGAGGC,, 60 3158,NM_001743,,20,761,TGGATGGAAGAGGCGAGGGC,, 3159,NM 001743,,20,755,GAAGAGGCGAGGGCAAAAGG,, 3160,NM_001743,,20,749,GCGAGGGCAAAAGGAAGAGA,, 3161,NM_001743,,20,743,GCAAAAGGAAGAGATGAGGG,, 3162,NM_001743,,20,737,GGAAGAGATGAGGGGCATGG,, 3163,NM 001743,,20,731,GATGAGGGGCATGGAGAGAG,, 3164,NM_001743,,20,725,GGGCATGGAGAGAGACTCAG,, 3165,NM_001743,,20,719,GGAGAGAGACTCAGGGAAGA,, 3166,NM_001743,,20,713,AGACTCAGGGAAGAAGGAGA,, 3167,NM_001743,,20,707,AGGGAAGAAGGAGAAAGAGC,, 3168,NM_001743,,20,701,GAAGGAGAAAGAGCAATCAT,, 3169,NM_001743,,20,695,GAAAGAGCAATCATGCAGCT,, 3170,NM_001743,,20,689,GCAATCATGCAGCTTGGGAC,, 3171,NM_001743,,20,683,ATGCAGCTTGGGACAAATCT,, 3172,NM 001743,,20,677,CTTGGGACAAATCTTTTGTT,, 75 3173,NM_001743,,20,671,ACAAATCTTTTGTTGCTTTA,,

3174,NM_001743,,20,665,CTTTTGTTGCTTTATCAGAT,, 3175,NM_001743,,20,659,TTGCTTTATCAGATTCTCAG,, 3176,NM_001743,,20,653,TATCAGATTCTCAGTCAATC,, 3177,NM_001743,,20,647,ATTCTCAGTCAATCAATTGG,, 3178,NM 001743,,20,641,AGTCAATCAATTGGTGTTTG,, 3179,NM_001743,,20,635,TCAATTGGTGTTTGCTAGAA,, 3180,NM_001743,,20,629,GGTGTTTGCTAGAACCGGGG,, 3181,NM_001743,,20,623,TGCTAGAACCGGGGTACGCA,, 3182,NM_001743,,20,617,AACCGGGGTACGCAGGGGAG,,3183,NM_001743,,20,611,GGTACGCAGGGGAGTGTTGA, 3184,NM_001743,,20,605,CAGGGGAGTGTTGAAGAGAG,, 3185,NM_001743,,20,599,AGTGTTGAAGAGAGAGTGCG,, 3186,NM_001743,,20,593,GAAGAGAGAGTGCGCGCGCG,, 3189,NM_001743,,20,575,CGAGAAGAGAGAGATCAAGA,, 3190,NM 001743,,20,569,GAGAGAGATCAAGAGAACGG,, 3191,NM_001743,,20,563,GATCAAGAGAACGGGCATCG,, 3192,NM_001743,,20,557,GAGAACGGGCATCGCCAGCT,, 20 3193,NM_001743,,20,551,GGGCATCGCCAGCTGCCCGG,, 3194,NM_001743,,20,545,CGCCAGCTGCCCGGGGGGCC,, 3195,NM_001743,,20,539,CTGCCCGGGGGGCCTTCACT,, 3196,NM_001743,,20,533,GGGGGGCCTTCACTTTGCAG,, 3197,NM_001743,,20,527,CCTTCACTTTGCAGTCATCA,, 25 3198,NM 001743,,20,521,CTTTGCAGTCATCATCTGTA,, 3199,NM_001743,,20,515,AGTCATCATCTGTACAAACT,, 3200,NM_001743,,20,509,CATCTGTACAAACTCTTCAT, 3201,NM_001743,,20,503,TACAAACTCTTCATAATTGA,, 3202,NM_001743,,20,497,CTCTTCATAATTGACCTGGC,, 30 3203,NM_001743,,20,491,ATAATTGACCTGGCCATCTC,, 3204,NM_001743,,20,485,GACCTGGCCATCTCCATCGA,, 3205,NM_001743,,20,479,GCCATCTCCATCGATGTCAG,, 3206,NM_001743,,20,473,TCCATCGATGTCAGCCTCCC,, 3207,NM_001743,,20,467,GATGTCAGCCTCCCTGATCA,, 3208,NM_001743,,20,461,AGCCTCCCTGATCATCTCAT,, 3209,NM_001743,,20,455,CCTGATCATCTCATCCACCT,, 3210,NM_001743,,20,449,CATCTCATCCACCTCCTCAT,, 3211,NM 001743,,20,443,ATCCACCTCCTCATCGGTCA,, 3212,NM_001743,,20,437,CTCCTCATCGGTCAGCTTCT,, 40 3213,NM_001743,,20,431,ATCGGTCAGCTTCTCCCCCA,, 3214,NM_001743,,20,425,CAGCTTCTCCCCCAGGTTCG,, 3215,NM_001743,,20,419,CTCCCCCAGGTTCGTCATTA,, 3216,NM_001743,,20,413,CAGGTTCGTCATTACGTGAC, 3217,NM_001743,,20,407,CGTCATTACGTGACGCAGCT,, 45 3218,NM_001743,,20,401,TACGTGACGCAGCTCTGCGG,, 3219,NM 001743,,20,395,ACGCAGCTCTGCGGCGCTGA,, 3220,NM_001743,,20,389,CTCTGCGGCGCTGATGTAGC,, 3221,NM_001743,,20,383,GGCGCTGATGTAGCCATTCC,, 3222,NM_001743,,20,377,GATGTAGCCATTCCCATCCT,, 50 3223,NM_001743,,20,371,GCCATTCCCATCCTTGTCAA,, 3224,NM_001743,,20,365,CCCATCCTTGTCAAAGACAC,, 3225,NM_001743,,20,359,CTTGTCAAAGACACGGAACG,, 3226,NM_001743,,20,353,AAAGACACGGAACGCCTCTC,, 3227,NM_001743,,20,347,ACGGAACGCCTCTCGGATCT,, 55 3228,NM_001743,,20,341,CGCCTCTCGGATCTCCTCCT,, 3229,NM_001743,,20,335,TCGGATCTCCTCACTGT,, 3230,NM_001743,,20,329,CTCCTCCTCACTGTCTGTGT, 3231,NM_001743,,20,323,CTCACTGTCTGTGTCCTTCA,, 3232,NM_001743,,20,317,GTCTGTGTCCTTCATCTTTC,, 3233,NM_001743,,20,311,GTCCTTCATCTTCTGGCCA,, 3234,NM_001743,,20,305,CATCTTTCTGGCCATCATGG, 3235,NM_001743,,20,299,TCTGGCCATCATGGTCAGGA,, 3236,NM 001743,,20,293,CATCATGGTCAGGAACTCCG,, 3237,NM_001743,,20,287,GGTCAGGAACTCCGGGAAGT,, 3238,NM_001743,,20,281,GAACTCCGGGAAGTCAATGG,, 3239,NM_001743,,20,275,CGGGAAGTCAATGGTCCCGT,, 3240,NM 001743,,20,269,GTCAATGGTCCCGTTCCCAT, 3241,NM_001743,,20,263,GGTCCCGTTCCCATCTGCAT,, 3242,NM_001743,,20,257,GTTCCCATCTGCATCCACCT,, 70 3243,NM_001743,,20,251,ATCTGCATCCACCTCATTGA,, 3244,NM_001743,,20,245,ATCCACCTCATTGATCATAT,, 3245,NM_001743,,20,239,CTCATTGATCATATCCTGCA,, 3246,NM_001743,,20,233,GATCATATCCTGCAGCTCTG,, 3247,NM_001743,,20,227,ATCCTGCAGCTCTGCTTCAG,, 3248,NM 001743,,20,221,CAGCTCTGCTTCAGTGGGGT.,

3249,NM_001743,,20,215,TGCTTCAGTGGGGTTCTGTC,, 3250,NM 001743,,20,209,AGTGGGGTTCTGTCCCAGGG,, 3251,NM_001743,,20,203,GTTCTGTCCCAGGGATCTCA,, 3252,NM_001743,,20,197,TCCCAGGGATCTCATCACTG,, 3253,NM_001743,,20,191,GGATCTCATCACTGTCCCCA,, 3254,NM_001743,,20,185,CATCACTGTCCCCAACTCCT,, 3255,NM_001743,,20,179,TGTCCCCAACTCCTTGGTGG,, 3256,NM_001743,,20,173,CAACTCCTTGGTGGTGATAG,, 3257,NM_001743,,20,167,CTTGGTGGTGATAGTGCCAT,, 3258,NM_001743,,20,161,GGTGATAGTGCCATCTCCAT,, 3259,NM_001743,,20,155,AGTGCCATCTCCATCCTTGT,, 3260,NM_001743,,20,149,ATCTCCATCCTTGTCAAAGA,, 10 3261,NM_001743,,20,143,ATCCTTGTCAAAGAGGGAGA,, 3262,NM_001743,,20,137,GTCAAAGAGGGAGAAGGCCT,, 3263,NM_001743,,20,131,GAGGGAGAAGGCCTCCTTGA, 3264,NM_001743,,20,125,GAAGGCCTCCTTGAACTCTG,, 3265,NM 001743,,20,119,CTCCTTGAACTCTGCAATCT,, 3266,NM_001743,,20,113,GAACTCTGCAATCTGCTCCT,, 3267,NM_001743,,20,107,TGCAATCTGCTCCTCAGTCA,, -20 3268,NM_001743,,20,101,CTGCTCCTCAGTCAGCTGGT,, 3269,NM_001743,,20,95,CTCAGTCAGCTGGTCAGCCA,, 3270,NM_001743,,20,89,CAGCTGGTCAGCCATGGCGA,, 3271,NM_001743,,20,83,GTCAGCCATGGCGAGGCCCG,, 3272,NM_001743,,20,77,CATGGCGAGGCCCGGGGTGT,, 25 3273,NM_001743,,20,71,GAGGCCCGGGGTGTCCGGAG,, 3274,NM 001743,,20,65,CGGGGTGTCCGGAGCACGGG, 3275,NM_001743,,20,59,GTCCGGAGCACGGGGATCAA,, 3276,NM_001743,,20,53,AGCACGGGGATCAAGGTTCC,, 3277,NM_001743,,20,47,GGGATCAAGGTTCCTCCGGC,, 30 3278,NM_001743,,20,41,AAGGTTCCTCCGGCGGCGCC,, 3279,NM_001743,,20,35,CCTCCGGCGGCGGCAGCAGC, 3280,NM_001743,,20,29,GCGGCGGCAGCAGCTGCAGC, 3281,NM_001743,,20,23,GCAGCAGCTGCAGCAGTTCC,, 3282,NM 001743,,20,17,GCTGCAGCAGTTCCAGCTCC,, 3283,NM_001743,,20,11,GCAGTTCCAGCTCCGCCGCG, 35

(GENBANK ACCESSION NO. AI095013)

3284,NM_001743,,20,5,CCAGCTCCGCCGCGCCCTCG,,

45 (SEQ ID NO: 3285)

3286,AI095013,,20,469,GTAGGACGAGTGCACCGCTT,, 3287,AI095013,,20,463,CGAGTGCACCGCTTGCTCCG,, 3288,AI095013,,20,457,CACCGCTTGCTCCGCAAGGG,, 50 3289,AI095013,,20,451,TTGCTCCGCAAGGGCAACTA,, 3290,A1095013,,20,445,CGCAAGGGCAACTACGCTGA,, 3291,AI095013,,20,439,GGCAACTACGCTGAGCGGGT,, 3292,AI095013,,20,433,TACGCTGAGCGGGTCGGGGC, 3293,AI095013,,20,427,GAGCGGGTCGGGGCCGGCGC, 55 3294,AI095013,,20,421,GTCGGGGCCGGCGCGCGGT,, 3295,AI095013,,20,415,GCCGGCGCGCCGGTTTACCT,, 3296,AI095013,,20,409,GCGCCGGTTTACCTGGCGGC,, 3297,AI095013,,20,403,GTTTACCTGGCGGCGGTGCT,, 3298,A1095013,,20,397,CTGGCGGCGGTGCTGGAGTA,, 3299,A1095013,,20,391,GCGGTGCTGGAGTACCTAAC,, 3300,A1095013,,20,385,CTGGAGTACCTAACTGCCGA,, 3301,A1095013,,20,379,TACCTAACTGCCGAGATCCT,, 3302,AI095013,,20,373,ACTGCCGAGATCCTGGAGCT,, 3303,AI095013,,20,367,GAGATCCTGGAGCTGGCGGG,, 65 3304,AI095013,,20,361,CTGGAGCTGGCGGCAACGC,, 3305,A1095013,,20,355,CTGGCGGGCAACGCAGCCCG,, 3306,A1095013,,20,349,GGCAACGCAGCCCGCGACAA,, 3307,AI095013,,20,343,GCAGCCCGCGACAACAAAA,, 3308,AI095013,,20,337,CGCGACAACAAAAAGACCCG,, 3309,A1095013,,20,331,AACAAAAAGACCCGCATCAT,, 70 3310,AI095013,,20,325,AAGACCCGCATCATCCCGCG,, 3311,AI095013,,20,319,CGCATCATCCCGCGCCACTT,, 3312,AI095013,,20,313,ATCCCGCGCCACTTGCAGCT,,

3313,A1095013,,20,307,CGCCACTTGCAGCTGGCCAT,, 3314,A1095013,,20,301,TTGCAGCTGGCCATCCGCAA,,

3315,A1095013,,20,295,CTGGCCATCCGCAACGACGA,, 3316,AI095013,,20,289,ATCCGCAACGACGAGGAGCT,, 3317,AI095013,,20,283,AACGACGAGGAGCTCAACAA,, 3318,AI095013,,20,277,GAGGAGCTCAACAAGCTGCT,, 3319,AI095013,,20,271,CTCAACAAGCTGCTTGGTAA,, 3320,AI095013,,20,265,AAGCTGCTTGGTAAAGTTAC,, 3321,A1095013,,20,259,CTTGGTAAAGTTACCATCGC,, 3322,AI095013,,20,253,AAAGTTACCATCGCTCAGGG,, 3323,AI095013,,20,247,ACCATCGCTCAGGGCGGTGT, 3324,AI095013,,20,241,GCTCAGGGCGGTGTTCTGCC, 3325,AI095013,,20,235,GGCGGTGTTCTGCCTAACAT,, 3326,A1095013,,20,229,GTTCTGCCTAACATCCAGGC,, 3327,AI095013,,20,223,CCTAACATCCAGGCCGTACT,, 3328,AI095013,,20,217,ATCCAGGCCGTACTGCTCCC,, 15 3329,AI095013,,20,211,GCCGTACTGCTCCCCAAGAA,, 3330,AI095013,,20,205,CTGCTCCCCAAGAAGACTGA,, 3331,AI095013,,20,199,CCCAAGAAGACTGAGAGCCA,, 3332,AI095013,,20,193,AAGACTGAGAGCCACCACAA,, 3333,AI095013,,20,187,GAGAGCCACCACAAAGCTAA,, 20 3334,AI095013,,20,181,CACCACAAAGCTAAGGGCAA,, 3335,AI095013,,20,175,AAAGCTAAGGGCAAGTAAGG,, 3336,AI095013,,20,169,AAGGGCAAGTAAGGGCTGAA,, 3337,AI095013,,20,163,AAGTAAGGGCTGAACTTTAA,, 3338,AI095013,,20,157,GGGCTGAACTTTAAAAATGT,, 25 3339,AI095013,,20,151,AACTTTAAAAATGTAAACTT,, 3340,AI095013,,20,145,AAAAATGTAAACTTACAAGA,, 3341,A1095013,,20,139,GTAAACTTACAAGACAAAAG,, 3342,AI095013,,20,133,TTACAAGACAAAAGGCTCTT,, 3343,AI095013,,20,127,GACAAAAGGCTCTTTTCAGA,, 3344,AI095013,,20,121,AGGCTCTTTTCAGAGCCACC,, 3345,AI095013,,20,115,TTTTCAGAGCCACCACCAT,, 3346,AI095013,,20,109,GAGCCACCCACCATTTCTAC,, 3347,AI095013,,20,103,CCCACCATTTCTACGGAAGA,, 3348,AI095013,,20,97,ATTTCTACGGAAGAACTGAG,, 3349,AI095013,,20,91,ACGGAAGAACTGAGCACTCT,, 3350,A1095013,,20,85,GAACTGAGCACTCTGTTCTC,, 3351,AI095013,,20,79,AGCACTCTGTTCTCCAAACC,, 3352,AI095013,,20,73,CTGTTCTCCAAACCTATCAG,, 3353,AI095013,,20,67,TCCAAACCTATCAGAAATTT,, 40 3354,AI095013,,20,61,CCTATCAGAAATTTGTGGCC,, 3355,AI095013,,20,55,AGAAATTTGTGGCCGAGTTC,, 3356,AI095013,,20,49,TTGTGGCCGAGTTCAAGCAC,, 3357,AI095013,,20,43,CCGAGTTCAAGCACTGAGGC, 3358,AI095013,,20,37,TCAAGCACTGAGGCCATTAC,, 45 3359,AI095013,,20,31,ACTGAGGCCATTACTTTCCT,, 3360,A1095013,,20,25,GCCATTACTTTCCTATTGGG,, 3361,AI095013,,20,19,ACTTTCCTATTGGGTAAAAT,, 3362,A1095013,,20,13,CTATTGGGTAAAATAAAAGT,, 3363,AI095013,,20,7,GGTAAAATAAAAGTATTGAA,, 50 3364,AI095013,,20,1,ATAAAAGTATTGAATCAGGA,, (GENBANK ACCESSION NO. AI672565) GCGGCCGCTCCAACATCGCTGTGACTGTCTCCAGGGCTTCCAGCTGACCCACTCTCTGGGGGGCGGCACGGGGTCCGGGATGGGCA CCCTGCTCATCAGCAAGATCCGGGAAGAGTACCCAGACCGCATCATGAACACCTTCAGCGTCATGCCCTCACCCAAGGTGTCAGAC ACGGTGGTGGAGCCCTACAACGCCACCCTCTCGGTCCACCAGCTGGTGGAAAACACAGATGAAACCTACTCCATTGATAACG 55 (SEQ ID NO: 3365) 3366,A1672565,,20,235,CGTTATCAATGGAGTAGGTT,, 3367,AI672565,,20,229,CAATGGAGTAGGTTTCATCT,, 3368,AI672565,,20,223,AGTAGGTTTCATCTGTGTTT, 3369,AI672565,,20,217,TTTCATCTGTGTTTTCCACC,, 60 3370,AI672565,,20,211,CTGTGTTTTCCACCAGCTGG,, 3371,AI672565,,20,205,TTTCCACCAGCTGGTGGACC,, 3372,AI672565,,20,199,CCAGCTGGTGGACCGAGAGG,, 3373,Al672565,,20,193,GGTGGACCGAGAGGGTGGCG,, 65 3374,AI672565,,20,187,CCGAGAGGGTGGCGTTGTAG,, 3375,A1672565,,20,181,GGGTGGCGTTGTAGGGCTCC,, 3376,A1672565,,20,175,CGTTGTAGGGCTCCACCACC,, 3377,AI672565,,20,169,AGGGCTCCACCACCGTGTCT,, 3378,AI672565,,20,163,CCACCACCGTGTCTGACACC, 70 3379,AI672565,,20,157,CCGTGTCTGACACCTTGGGT,, 3380,Al672565,,20,151,CTGACACCTTGGGTGAGGGC,, 3381,AI672565,,20,145,CCTTGGGTGAGGGCATGACG,,

3382,AI672565,,20,139,GTGAGGGCATGACGCTGAAG,, 3383,AI672565,,20,133,GCATGACGCTGAAGGTGTTC,,

3384,AI672565,,20,127,CGCTGAAGGTGTTCATGATG,,

75

PCT/US02/13135

WO 02/085308 3385,AI672565,,20,121,AGGTGTTCATGATGCGGTCT,, 3386,AI672565,,20,115,TCATGATGCGGTCTGGGTAC,, 3387,AI672565,,20,109,TGCGGTCTGGGTACTCTTCC,, 3388,A1672565,,20,103,CTGGGTACTCTTCCCGGATC,, 3389,A1672565,,20,97,ACTCTTCCCGGATCTTGCTG,, 3390,AI672565,,20,91,CCCGGATCTTGCTGATGAGC,, 3391,AI672565,,20,85,TCTTGCTGATGAGCAGGGTG,, 3392,AI672565,,20,79,TGATGAGCAGGGTGCCCATC, 3393,AI672565,,20,73,GCAGGGTGCCCATCCCGGAC,, 3394,AI672565,,20,67,TGCCCATCCCGGACCCCGTG,, 3395,AI672565,,20,61,TCCCGGACCCCGTGCCGCCC,, 3396,AI672565,,20,55,ACCCCGTGCCGCCCCCAGA,, 3397,AI672565,,20,49,TGCCGCCCCCAGAGAGTGG,, 3398,AI672565,,20,43,CCCCCAGAGAGTGGGTCAGC,, 15 3399,AI672565,,20,37,GAGAGTGGGTCAGCTGGAAG,, 3400,AI672565,,20,31,GGGTCAGCTGGAAGCCCTGG,, 3401,Al672565,,20,25,GCTGGAAGCCCTGGAGACAG,,3402,Al672565,,20,19,AGCCCTGGAGACAGTCACAG, 3403,AI672565,,20,13,GGAGACAGTCACAGCGATGT,, 3404,AI672565,,20,7,AGTCACAGCGATGTTGGAGC,, 3405,AI672565,,20,1,AGCGATGTTGGAGCGGCCGC,, (GENBANK ACCESSION NO. AI652901) TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTAGCAGGAGCTAAAAGTGGCTGTCTTTGTATAAAAACTAAAAAAGGCAGCCGCCCCCAA GGGCCTAGGAGTTTTTTTGCGAGACAGGAGGCTGAACCCCGGAGGCTGCAGCCAGGGAGGAGGCAGTGGGCTTCCTGGGGAGCCC 25 ATCATAAGCAGGGACTGCTCAAGAAGCGCAGGGAGGGCCGAGGTGGGCTTGCAGCCACCCGCCAGGGCCAAACGTTTGCAGGGGC CCCGACCTCCCAAATCCCGCCATTGGGGAGGGCGGCTAGGGCCAAGCCTGCAGCTGCCGCTGGTCGTACTCGGCGATGAGCCT CTTGATGTGGGCCAGCTTGCTGTGCAGGTACTCGCAGCGGTGCTTCTCCTGGCTGTAGTTGGGGTTGGTCTTTTTGATTTTTCGATAT TCCTGCAAAATCTGCCTCGAGTAGTCTCATACTCCTCGGAGCCCTGGGAGAGCTGCCGGAGCTTGGCGTCNAGCTGGGTGAACCC 30 GCGCGTGATGCGCTCAATGTCGGCGTGCAG (SEQ ID NO: 3406) 3407,AI652901,,20,618,CTGCACGCCGACATTGAGCG, 3408,AI652901,,20,612,GCCGACATTGAGCGCATCAC,, 35 3409,AI652901,,20,606,ATTGAGCGCATCACGCGCGG,, 3410,AI652901,,20,600,CGCATCACGCGCGGGTTCAC,, 3411,AI652901,,20,594,ACGCGCGGGTTCACCCAGCT,, 3412,AI652901,,20,588,GGGTTCACCCAGCTNGACGC,, 3413,AI652901,,20,582,ACCCAGCTNGACGCCAAGCT,, 40 3414,AI652901,,20,576,CTNGACGCCAAGCTCCGGCA,, 3415,AI652901,,20,570,GCCAAGCTCCGGCAGCTCTC,, 3416,AI652901,,20,564,CTCCGGCAGCTCTCCCAGGG, 3417,AI652901,,20,558,CAGCTCTCCCAGGGCTCCGA,, 3418,AI652901,,20,552,TCCCAGGGCTCCGAGGAGTA,, 3419,AI652901,,20,546,GGCTCCGAGGAGTATGAGAC,, 3420,AI652901,,20,540,GAGGAGTATGAGACTACTCG,, 3421,AI652901,,20,534,TATGAGACTACTCGAGGGCA, 3422,AI652901,,20,528,ACTACTCGAGGGCAGATTTT,,

3423,AI652901,,20,522,CGAGGGCAGATTTTGCAGGA,, 50 3424,AI652901,,20,516,CAGATTTTGCAGGAATATCG,, 3425,AI652901,,20,510,TTGCAGGAATATCGAAAAAT,, 3426,AI652901,,20,504,GAATATCGAAAAATCAAAAA,, 3427,AI652901,,20,498,CGAAAAATCAAAAAGACCAA,, 3428,AI652901,,20,492,ATCAAAAAGACCAACCCCAA,, 55 3429,AI652901,,20,486,AAGACCAACCCCAACTACAG,, 3430,AI652901,,20,480,AACCCCAACTACAGCCAGGA,, 3431,AI652901,,20,474,AACTACAGCCAGGAGAAGCA,, 3432,AI652901,,20,468,AGCCAGGAGAAGCACCGCTG,, 3433,AI652901,,20,462,GAGAAGCACCGCTGCGAGTA,, 60 3434,AI652901,,20,456,CACCGCTGCGAGTACCTGCA,, 3435,AI652901,,20,450,TGCGAGTACCTGCACAGCAA,, 3436,AI652901,,20,444,TACCTGCACAGCAAGCTGGC,, 3437,AI652901,,20,438,CACAGCAAGCTGGCCCACAT,, 3438,AI652901,,20,432,AAGCTGGCCCACATCAAGAG,, 3439,AI652901,,20,426,GCCCACATCAAGAGGCTCAT,, 65 3440,AI652901,,20,420,ATCAAGAGGCTCATCGCCGA,, 3441,AI652901,,20,414,AGGCTCATCGCCGAGTACGA,, 3442,AI652901,,20,408,ATCGCCGAGTACGACCAGCG,, 3443,AI652901,,20,402,GAGTACGACCAGCGGCAGCT,, 70 3444,AI652901,,20,396,GACCAGCGGCAGCTGCAGGC,, 3445,AI652901,,20,390,CGGCAGCTGCAGGCTTGGCC,, 3446,AI652901,,20,384,CTGCAGGCTTGGCCCTAGCC,, 3447,AI652901,,20,378,GCTTGGCCCTAGCCGCCCTC,, 3448,AI652901,,20,372,CCCTAGCCGCCCTCCCCAAT,, 75 3449,AI652901,,20,366,CCGCCCTCCCCAATGGCGGG,

3450,AI652901,,20,360,TCCCCAATGGCGGGGATTTG,, 3451,AI652901,,20,354,ATGGCGGGGATTTGGGAGGG,, 3452,A1652901,,20,348,GGGATTTGGGAGGGTCGGGG,, 3453,AI652901,,20,342,TGGGAGGGTCGGGGGAGCAA,, 3454,AI652901,,20,336,GGTCGGGGGAGCAAAAGGCG,, 3455,AI652901,,20,330,GGGAGCAAAAGGCGGTGAGA,, 3456,AI652901,,20,324,AAAAGGCGGTGAGAGAGAT,, 3457,AI652901,,20,318,CGGTGAGAGAGGATTTATTT,, 3458,AI652901,,20,312,GAGAGGATTTATTTAAAAAA,, 10 3459,A1652901,,20,306,ATTTATTTAAAAAAAAAAAC,, 3460,AI652901,,20,300,TTAAAAAAATAAACCCGAGG,, 3461,AI652901,,20,294,AAATAAACCCGAGGAAGATG,, 3462,AI652901,,20,288,ACCCGAGGAAGATGCTCATT,, 3463,AI652901,,20,282,GGAAGATGCTCATTTGAGCC,, 15 3464,AI652901,,20,276,TGCTCATTTGAGCCAGCACC,, 3465,AI652901,,20,270,TTTGAGCCAGCACCGCCGGC,, 3466,AI652901,,20,264,CCAGCACCGCCGGCTTTCAG,, 3467,AI652901,,20,258,CCGCCGGCTTTCAGGGCAGC,, 3468,AI652901,,20,252,GCTTTCAGGGCAGCCCCTGC,, 20 3469,AI652901,,20,246,AGGGCAGCCCCTGCAAACGT,, 3470,AI652901,,20,240,GCCCCTGCAAACGTTTGGCC,, 3471,AI652901,,20,234,GCAAACGTTTGGCCCTGGCG,, 3472,AI652901,,20,228,GTTTGGCCCTGGCGGGTGGC,, 3473,AI652901,,20,222,CCCTGGCGGGTGGCTGCAAG,, 3474,AI652901,,20,216,CGGGTGGCTGCAAGCCCACC,, 3475,AI652901,,20,210,GCTGCAAGCCCACCTCGGCC,, 3476,AI652901,,20,204,AGCCCACCTCGGCCCTCCCT,, 3477,AI652901,,20,198,CCTCGGCCCTCCCTGCGCTT,, 3478,AI652901,,20,192,CCCTCCCTGCGCTTCTTGAG,, 30 3479,AI652901,,20,186,CTGCGCTTCTTGAGCAGTCC,, 3480,AI652901,,20,180,TTCTTGAGCAGTCCCTGCTT,, 3481,AI652901,,20,174,AGCAGTCCCTGCTTATGATG,, 3482,AI652901,,20,168,CCCTGCTTATGATGGGCTCC,, 3483,AI652901,,20,162,TTATGATGGGCTCCCCAGGA,, 35 3484,AI652901,,20,156,TGGGCTCCCCAGGAAGCCCA,, 3485,AI652901,,20,150,CCCCAGGAAGCCCACTGCCT,, 3486,AI652901,,20,144,GAAGCCCACTGCCTCCTCCC,, 3487,AI652901,,20,138,CACTGCCTCCTCGCTG,, 3488,AI652901,,20,132,CTCCTCCCTGGCTGCAGCCT,, 40 3489,A1652901,,20,126,CCTGGCTGCAGCCTCCGGGG,, 3490,AI652901,,20,120,TGCAGCCTCCGGGGTTCAGC,, 3491,AI652901,,20,114,CTCCGGGGTTCAGCCTCCTG,, 3492,AI652901,,20,108,GGTTCAGCCTCCTGTCTCGC,, 3493,AI652901,,20,102,GCCTCCTGTCTCGCCAAAAA,, 3494,AI652901,,20,96,TGTCTCGCCAAAAAACTCCT,, 3495,AI652901,,20,90,GCCAAAAAACTCCTAGGCCC,, 3496,AI652901,,20,84,AAACTCCTAGGCCCTTGGGG,, 3497,AI652901,,20,78,CTAGGCCCTTGGGGTGGCGC,, 3498,AI652901,,20,72,CCTTGGGGTGGCGCGCCTGC,, 50 3499,AI652901,,20,66,GGTGGCGCGCCTGCCTTTTT,, 3500,AI652901,,20,60,GCGCCTGCCTTTTTTAGTTT,, 3501,AI652901,,20,54,GCCTTTTTTAGTTTTATACA,, 3502,AI652901,,20,48,TTTAGTTTTATACAAAGACA,, 3503,AI652901,,20,42,TTTATACAAAGACAGCCACT,, 55 3504,AI652901,,20,36,CAAAGACAGCCACTTTTAGC,, 3505,AI652901,,20,30,CAGCCACTTTTAGCTCCTGC,, 3506,AI652901,,20,24,CTTTTAGCTCCTGCTAAAAA,, 3507,AI652901,,20,18,GCTCCTGCTAAAAAAAAAAA, 3508,AI652901,,20,12,GCTAAAAAAAAAAAAAAAAAA,, 60 3509,AI652901,,20,6,AAAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI652764) ŤTGAACAGGGGAAGTTTAATATAAAGATGAACTCTACTCGGAGCATAGAGTTTAAAAAGAGTTCTACACAACACCCTAGGGATGAG GAAGAATGCCTCAGGGAAGAAAGGACACAGAAAAGGAGGTGCCCTCCCGAGGCTGGGACTGAGACCTCCTCGCTGGAGAAGGTGTGG GAGGCCCCTGAGGGTGAAGTTCCCCGGGTTGCTCGAGCCAGAGTCTGCACAGTCACAGGGCAAGCAGAAAATTCTTTCGAGAGGGT GGGCGCTCACAGGGAATCGGGAAGCAGAGCCCACCTGCCTACACCTGAAAGGCCACAGCCAGTGCTGGGACCTCTCTGAGGTCTGC AGACTCCAGGCAGAGCACTCCTGGCAGCTGTGCAGCAGGAGCAGGTAAATTGTCTCCAAAAGGACTAGTAAAGGTGACTGGGTCATC CTCCTGCCCCAGGGACACTGATTAGAGAAAATCCGTCTGTGCTGGCAATACGGCAGTGCTGGACACTCGGAATTCCCTTGAA (SEO ID NO: 3510) 3511,AI652764,,20,492,TTCAAGGGAATTCCGAGTGT,, 3512,AI652764,,20,486,GGAATTCCGAGTGTCCAGCA,,

3516,AI652764,,20,462,CGTATTGCCAGCACAGACGG,,

3513,AI652764,,20,480,CCGAGTGTCCAGCACTGCCG,, 3514,AI652764,,20,474,GTCCAGCACTGCCGTATTGC,, 3515,AI652764,,20,468,CACTGCCGTATTGCCAGCAC,,

75

3517,AI652764,,20,456,GCCAGCACAGACGGATTTTC,, 3518,AI652764,,20,450,ACAGACGGATTTTCTCTAAT,, 3519,AI652764,,20,444,GGATTTTCTCTAATCAGTGT,, 3520,AI652764,,20,438,TCTCTAATCAGTGTCCCTGG,, 3521,AI652764,,20,432,ATCAGTGTCCCTGGGGCAGG, 3522,AI652764,,20,426,GTCCCTGGGGCAGGAGGATG,, 3523,AI652764,,20,420,GGGGCAGGAGGATGACCCAG,, 3524,AI652764,,20,414,GGAGGATGACCCAGTCACCT,, 3525,AI652764,,20,408,TGACCCAGTCACCTTTACTA,, 3526,AI652764,,20,402,AGTCACCTTTACTAGTCCTT,, 3527,AI652764,,20,396,CTTTACTAGTCCTTTGGAGA,, 3528,AI652764,,20,390,TAGTCCTTTGGAGACAATTT,, 3529,AI652764,,20,384,TTTGGAGACAATTTACCTGC,, 3530,AI652764,,20,378,GACAATTTACCTGCTCCTGC,, 15 3531,AI652764,,20,372,TTACCTGCTCCTGCTGCACA,, 3532,AI652764,,20,366,GCTCCTGCTGCACAGCTGCC,, 3533,AI652764,,20,360,GCTGCACAGCTGCCAGGAGT, 3534,AI652764,,20,354,CAGCTGCCAGGAGTGCTCTG,, 3535,AI652764,,20,348,CCAGGAGTGCTCTGCCTGGA,, 20 3536,AI652764,,20,342,GTGCTCTGCCTGGAGTCTGC,, 3537,AI652764,,20,336,TGCCTGGAGTCTGCAGACCT,, 3538,AI652764,,20,330,GAGTCTGCAGACCTCAGAGA,, 3539,AI652764,,20,324,GCAGACCTCAGAGAGGTCCC,, 3540,AI652764,,20,318,CTCAGAGAGGTCCCAGCACT,, 3541,AI652764,,20,312,GAGGTCCCAGCACTGGCTGT,, 3542,AI652764,,20,306,CCAGCACTGGCTGTGGCCTT,, 3543,AI652764,,20,300,CTGGCTGTGGCCTTTCAGGT, 3544,AI652764,,20,294,GTGGCCTTTCAGGTGTAGGC,, 3545,AI652764,,20,288,TTTCAGGTGTAGGCAGGTGG,, 3546,AI652764,,20,282,GTGTAGGCAGGTGGGCTCTG,, 3547,A1652764,,20,276,GCAGGTGGGCTCTGCTTCCC, 3548,AI652764,,20,270,GGGCTCTGCTTCCCGATTCC,, 3549,AI652764,,20,264,TGCTTCCCGATTCCCTGTGA,, 3550,AI652764,,20,258,CCGATTCCCTGTGAGCGCCC,, 3551,AI652764,,20,252,CCCTGTGAGCGCCCACCCTC,, 3552,AI652764,,20,246,GAGCGCCCACCCTCTCGAAA,, 3553,A1652764,,20,240,CCACCCTCTCGAAAGAATTT,, 3554,A1652764,,20,234,TCTCGAAAGAATTTTCTGCT,, 3555,A1652764,,20,228,AAGAATTTTCTGCTTGCCCT,,3556,A1652764,,20,222,TTTCTGCTTGCCCTGTGACT, 40 3557,AI652764,,20,216,CTTGCCCTGTGACTGTGCAG,, 3558,AI652764,,20,210,CTGTGACTGTGCAGACTCTG,, 3559,AI652764,,20,204,CTGTGCAGACTCTGGCTCGA,, 3560,AI652764,,20,198,AGACTCTGGCTCGAGCAACC,, 45 3561,AI652764,,20,192,TGGCTCGAGCAACCCGGGGA,, 3562,AI652764,,20,186,GAGCAACCCGGGGAACTTCA,, 3563,AI652764,,20,180,CCCGGGGAACTTCACCCTCA,, 3564,AI652764,,20,174,GAACTTCACCCTCAGGGGCC,, 3565,A1652764,,20,168,CACCCTCAGGGGCCTCCCAC,, 50 3566,AI652764,,20,162,CAGGGGCCTCCCACACCTTC,, 3567,A1652764,,20,156,CCTCCCACACCTTCTCCAGC,, 3568,A1652764,,20,150,ACACCTTCTCCAGCGAGGAG,, 3569,A1652764,,20,144,TCTCCAGCGAGGAGGTCTCA,, 3570,AI652764,,20,138,GCGAGGAGGTCTCAGTCCCA,, 55 3571,AI652764,,20,132,AGGTCTCAGTCCCAGCCTCG,, 3572,AI652764,,20,126,CAGTCCCAGCCTCGGGAGGG,, 3573,AI652764,,20,120,CAGCCTCGGGAGGGCACCTC,, 3574,AI652764,,20,114,CGGGAGGGCACCTCCTTTTC,, 3575,AI652764,,20,108,GGCACCTCCTTTTCTGTGCT,, 3576,AI652764,,20,102,TCCTTTTCTGTGCTTTCTTC,, 3577,AI652764,,20,96,TCTGTGCTTTCTTCCCTGAG,, 3578,A1652764,,20,90,CTTTCTTCCCTGAGGCATTC,, 3579,AI652764,,20,84,TCCCTGAGGCATTCTTCCTC,, 3580,AI652764,,20,78,AGGCATTCTTCCTCATCCCT,, 3581,AI652764,,20,72,TCTTCCTCATCCCTAGGGTG,, 3582,AI652764,,20,66,TCATCCCTAGGGTGTTGTGT,, 3583,AI652764,,20,60,CTAGGGTGTTGTGTAGAACT,, 3584,AI652764,,20,54,TGTTGTGTAGAACTCTTTTT,, 3585,A1652764,,20,48,GTAGAACTCTTTTTAAACTC,, 3586,AI652764,,20,42,CTCTTTTTAAACTCTATGCT,, 3587,AI652764,,20,36,TTAAACTCTATGCTCCGAGT,, 3588,A1652764,,20,30,TCTATGCTCCGAGTAGAGTT,, 3589,AI652764,,20,24,CTCCGAGTAGAGTTCATCTT,, 3590,AI652764,,20,18,GTAGAGTTCATCTTTATATT,, 3591,AI652764,,20,12,TTCATCTTTATATTAAACTT,,

3592,AI652764,,20,6,TTTATATTAAACTTCCCCTG,, (GENBANK ACCESSION NO. AA489087)

10 (SEQ ID NO: 3593)

3594,AA489087,,20,522,GATGCCATTTCAAATATCTT,, 3595,AA489087,,20,516,ATTTCAAATATCTTCGAGCC,, 3596,AA489087,,20,510,AATATCTTCGAGCCTGCTGA,

- 3597,AA489087,20,504,TTCGAGCCTGCTGAGAAACT,
 3598,AA489087,20,498,CCTGCTGAGAAACTAGGTGA,
 3599,AA489087,20,492,GAGAAACTAGGTGAAACGGA,
 3600,AA489087,20,486,CTAGGTGAAACGGAGACACT,
 3601,AA489087,20,480,GAAACGGAGACACTTAGTAT,
- 20 3602,AA489087,,20,474,GAGACACTTAGTATAAGGAT,, 3603,AA489087,,20,468,CTTAGTATAAGGATTGAAGA,, 3604,AA489087,,20,462,ATAAGGATTGAAGAATGTGG,, 3605,AA489087,,20,456,ATTGAAGAATGTGGAGGCTT,, 3606,AA489087,,20,450,GAATGTGGAGGCTTAGACAA,,
- 25 3607,AA489087,,20,444,GGAGGCTTAGACAAAATTGA,, 3608,AA489087,,20,438,TTAGACAAAATTGAAGCTCT,, 3609,AA489087,,20,432,AAAATTGAAGCTCTACAAAA,, 3610,AA489087,,20,426,GAAGCTCTACAAAACCATGA,, 3611,AA489087,,20,420,CTACAAAACCATGAAAATGA,,
- 30 3612,AA489087,,20,414,AACCATGAAAATGAGTCTGT,, 3613,AA489087,,20,408,GAAAATGAGTCTGTGTATAAA,, 3614,AA489087,,20,402,GAGTCTGTGTATAAGGCTTC,, 3615,AA489087,,20,396,GTGTATAAGGCTTCGTTAAG,
- 3616,AA489087,,20,390,AAGGCTTCGTTAAGCTTAAT,, 3617,AA489087,,20,384,TCGTTAAGCTTAATTGAGAA,, 3618,AA489087,,20,378,AGCTTAATTGAGAAGTATTT,, 3619,AA489087,,20,372,ATTGAGAAGTATTTCTCTGT,, 3620,AA489087,,20,366,AAGTATTTCTCTGTAGAGGA,, 3621,AA489087,,20,360,TTCTCTGTAGAGGAAGAGAGA,
- 40 3622,AA489087,20,354,GTAGAGGAAGAGGAAGATCA,, 3623,AA489087,20,348,GAAGAGGAAGATCAAAACGT,, 3624,AA489087,20,342,GAAGATCAAAACGTTGTACC,, 3625,AA489087,20,336,CAAAACGTTGTACCAGAAAC,, 3626,AA489087,20,330,GTTGTACCAGAAACTACCTC,
- 45 3627,AA489087,,20,324,CCAGAAACTACCTCTGAAGG,,
 3628,AA489087,,20,318,ACTACCTCTGAAGGCTACAC,,
 3629,AA489087,,20,312,TCTGAAGGCTACACTTTCCA,,
 3630,AA489087,,20,306,GGCTACACTTTCCAAGTTCA,,
 3631,AA489087,,20,300,ACTTTCCAAGTTCAGGATGG,
- 50 3632,AA489087,,20,294,CAAGTTCAGGATGGGGCTCA,, 3633,AA489087,,20,288,CAGGATGGGGCTCATGGGAC,, 3634,AA489087,,20,282,GGGGCTCATGGGACCTTTAA,, 3635,AA489087,,20,276,CATGGGACCTTTAACTTTTA,, 3636,AA489087,,20,270,ACCTTTAACTTTTAGATCAT,
- 55 3637,AA489087,,20,264,AACTTTTAGATCATGTAGCT,, 3638,AA489087,,20,258,TAGATCATGTAGCTGAGACA,, 3639,AA489087,,20,252,ATGTAGCTGAGACATAAATTT, 3640,AA489087,,20,246,CTGAGACATAAATTTGTTGT,, 3641,AA489087,,20,240,CATAAATTTGTTGTACTA,,
- 60 3642,AA489087,30,234,TTTGTTGTTGTACTACGTTTG, 3643,AA489087,30,228,GTGTACTACGTTTGGTATTT, 3644,AA489087,30,222,TACGTTTGGTATTTTGTCTT, 3645,AA489087,30,216,TGGTATTTTGTCTTATTGTT, 3646,AA489087,20,210,TTTGTCTTATTGTTTCTCTA,
- 65 3647,AA489087,,20,204,TTATTGTTTCTACTAAGA, 3648,AA489087,,20,198,TTTCTCTACTAAGAACTCTTT, 3649,AA489087,,20,192,TACTAAGAACTCTTTCTTAA, 3650,AA489087,,20,186,GAACTCTTTCTTAAATGTGG, 3651,AA489087,,20,180,TTTCTTAAATGTGGTTTGTT,
- 70 3652,AA489087,,20,107,TACTGTGTTTGTTACTGTA,, 3653,AA489087,,20,168,GGTTTGTTACTGTAGCACTT,, 3654,AA489087,,20,162,TTACTGTAGCACTTTTTACA,, 3655,AA489087,,20,156,TAGCACTTTTTACACTGAAA,, 3656,AA489087,,20,150,TTTTTACACTGAAACTATAC,, 75 3657,AA489087,,20,144,CACTGAAACTATACTTGAAC,

3658,AA489087,,20,138,AACTATACTTGAACAGTTCC,, 3659,AA489087,,20,132,ACTTGAACAGTTCCAACTGT,, 3660,AA489087,,20,126,ACAGTTCCAACTGTACATAC,, 3661,AA489087,,20,120,CCAACTGTACATACATACTG, 3662,AA489087,,20,114,GTACATACATACTGTATGAA,, 3663,AA489087,,20,108,ACATACTGTATGAAGCTTGT,, 3664,AA489087,,20,102,TGTATGAAGCTTGTCCTCTG,, 3665,AA489087,,20,96,AAGCTTGTCCTCTGACTAGG,, 3666,AA489087,,20,90,GTCCTCTGACTAGGTTTCTA, 10 3667,AA489087,,20,84,TGACTAGGTTTCTAATTTCT,, 3668,AA489087,,20,78,GGTTTCTAATTTCTATGTGG,, 3669,AA489087,,20,72,TAATTTCTATGTGGAATTTC,, 3670,AA489087,,20,66,CTATGTGGAATTTCCTATCT, 3671,AA489087,,20,60,GGAATTTCCTATCTTGCAGC,, 3672,AA489087,,20,54,TCCTATCTTGCAGCATCCTG,, 3673,AA489087,,20,48,CTTGCAGCATCCTGTAAATA,, 3674,AA489087,,20,42,GCATCCTGTAAATAAACATT,, 3675,AA489087,,20,36,TGTAAATAAACATTCAAGTC,, 3676,AA489087,,20,30,TAAACATTCAAGTCCACCCT,, 3677,AA489087,,20,24,TTCAAGTCCACCCTTTTCTT, 3678,AA489087,,20,18,TCCACCCTTTTCTTGACTTC,, 3679,AA489087,,20,12,CTTTTCTTGACTTCAAAAAA,, 3680,AA489087,,20,6,TTGACTTCAAAAAAAAAAAAA, (GENBANK ACCESSION NO. AA281534) GATTGTATAAATAATTTATTTCTGTTCACAGCATCATATATGCATTATAAAAGGCTATGGAAACAAAAGAGAAGGATGATGAGACA GAGAATTACAGCAGTAGAAAAGGAAAACAGAAACCAGGGCACACAGTTCCAACACCAGAACAGAGAAATTTGGGAAGATAATTGCTC TGAAACAGAACT (SEQ ID NO: 3681) 30 3682,AA281534,,20,164,AGTTCTGTTTCAGAGCAATT., 3683,AA281534,,20,158,GTTTCAGAGCAATTATCTTC,, 3684,AA281534,,20,152,GAGCAATTATCTTCCCAAAT,, 3685,AA281534,,20,146,TTATCTTCCCAAATTCTCTG,, 3686,AA281534,,20,140,TCCCAAATTCTCTGTTCTGG,, 3687,AA281534,,20,134,ATTCTCTGTTCTGGTGTTGG,,3688,AA281534,,20,128,TGTTCTGGTGTTGGAACTGT, 3689,AA281534,,20,122,GGTGTTGGAACTGTGTGCCC,, 3690,AA281534,,20,116,GGAACTGTGTGCCCTGGTTT, 3691,AA281534,,20,110,GTGTGCCCTGGTTTCTGTTT,, 3692,AA281534,,20,104,CCTGGTTTCTGTTTTCCTTT,, 3693,AA281534,,20,98,TTCTGTTTTCCTTTCTACTG,, 3694,AA281534,,20,92,TTTCCTTTCTACTGCTGTAA,, 3695,AA281534,,20,86,TTCTACTGCTGTAATTCTCT,, 3696,AA281534,,20,80,TGCTGTAATTCTCTGTCTCA,, 45 3697, AA281534,, 20,74, AATTCTCTGTCTCATCATCC,, 3698,AA281534,,20,68,CTGTCTCATCATCCTTCTCT,, 3699,AA281534,,20,62,CATCATCCTTCTCTTTTGTT,, 3700,AA281534,,20,56,CCTTCTCTTTTGTTTCCATA,, 3701,AA281534,,20,50,CTTTTGTTTCCATAGCCTTT,, 50 3702,AA281534,,20,44,TTTCCATAGCCTTTTATAAT,, 3703,AA281534,,20,38,TAGCCTTTTATAATGCATAT,, 3704,AA281534,,20,32,TTTATAATGCATATATGATG,, 3705,AA281534,,20,26,ATGCATATATGATGCTGTGA,, 3706,AA281534,,20,20,ATATGATGCTGTGAACAGAA,, 3707,AA281534,,20,14,TGCTGTGAACAGAAATAAAT,, 55 3708,AA281534,,20,8,GAACAGAAATAAATTATTTA,, 3709,AA281534,,20,2,AAATAAATTATTTATACAAT,, (GENBANK ACCESSION NO. AI038433) TTTTTTTTTTTTTTGGTTTGGGTTAGTTTTAAATTACTTTTATTTTTGACATTTACAAGCATACAAGGAAGACACTATAAATCTCTCTTG TTTTTTCCCCAGGGAATAATT (SEQ ID NO: 3710) 3711,AI038433,,20,180,AATTATTCCCTGGGGAAAAA,, 3712,AI038433,,20,174,TCCCTGGGGAAAAAAATGAT,, 3713,AI038433,,20,168,GGGAAAAAAATGATGTGTGG,, 3714,AI038433,,20,162,AAAATGATGTGTGGGATTTA,, 3715,AI038433,,20,156,ATGTGTGGGATTTAAGTCTC,, 3716,AI038433,,20,150,GGGATTTAAGTCTCTAACTC, 70 3717,AI038433,,20,144,TAAGTCTCTAACTCTCCCCT,, 3718,AI038433,,20,138,TCTAACTCTCCCCTATTTAC,, 3719,AI038433,,20,132,TCTCCCCTATTTACGCCAAA,, 3720,AI038433,,20,126,CTATTTACGCCAAAAGATTG,, 3721,AI038433,,20,120,ACGCCAAAAGATTGTCCATG,,

75

3722,AI038433,,20,114,AAAGATTGTCCATGAGTTGA,,

3723,A1038433,,20,108,TGTCCATGAGTTGAAAACTT,, 3724,A1038433,,20,102,TGAGTTGAAAACTTAAAGAT,, 3725,A1038433,,20,96,GAAAACTTAAAGATGGGTGA,, 3726,A1038433,,20,90,TTAAAGATGGGTGACAACGC,,

- 5 3727,AI038433,,20,84,ATGGGTGACAACGCAAGAGA, 3728,AI038433,,20,78,GACAACGCAAGAGAGATTAT., 3729,AI038433,,20,72,GCAAGAGAGATTATAGTGTC., 3730,AI038433,,20,66,GAGATTATAGTGTCTTCCTT., 3731,AI038433,,20,66,ATAGTGTCTTCCTTGTATGC.,
- 10 3732,AI038433,,20,54,TCTTCCTTGTATGCTTGTAA,, 3733,AI038433,,20,48,TTGTATGCTTGTAAATGTCA,, 3734,AI038433,,20,42,GCTTGTAAATGTCAAAAATA,, 3735,AI038433,,20,36,AAATGTCAAAAATAAAAGTA,, 3736,AI038433,,20,30,CAAAAATAAAAGTAATTTAA,,
- 15 3737,AI038433,,20,24,TAAAAGTAATTTAAAACTAA,, 3738,AI038433,,20,18,TAATTTAAAACTAACCCAAA,, 3739,AI038433,,20,12,AAAACTAACCCAAACCAAAA,, 3740,AI038433,,20,6,AACCCAAACCAAAAAAAAAA,, (GENBANK ACCESSION NO. AI122689)
- 20 TTTTTTTTTTTTTTTTTTTTTTTCTGTCAAAAAAACATTCTAACCTGATTTCAGTGACTTAGGTGTAAATGGCTTAGTTTCCAATA
 TAAACTATCTTCAGGGTTTTACAATAATAGTTCTTAGGGTATTACAAAATCAAGTACTCTACGGTACTCTTGGAAGAATTAACAGA
 AATGAAGCTAGTCAACTTTTTTAAGAAACTGAGCAAAGAACAATTAGCAAATTGAGCAGCCTTTTAACCAGGATAGGTTCAGAGAG
 GCTCCAGCAGAGCCACGTAATAGATTTATGGACAGAGAAGCTGGTCAACTTTTGATTCTCAAACCCAGGCTGGCCATCCTGCTTCCA
 TCCAAAACCTGACAATGCTCATGGAACAATGAATATTAGGGTTGAGAAAATTTATTACCAATATCT
- 25 (SEQ ID NO: 3741)

3742,AII22689,20,397,AGATATTGGTAATAAATTTT,, 3743,AII22689,20,391,TGGTAATAAATTTTCTCAAC,, 3744,AII22689,20,385,TAAATTTTCTCAACCCTAAT,,

- 30 3745,AI122689,,20,379,TTCTCAACCCTAATATTCAT,, 3746,AI122689,,20,373,ACCCTAATATTCATTGTTCC., 3747,AI122689,,20,367,ATATTCATTGTTCCATGAGC., 3748,AI122689,,20,361,ATTGTTCCATGAGCATTGTC., 3749,AI122689,,20,355,CCATGAGCATTGTCAGGTTT.,
- 35 3750,A1122689,20,349,GCATTGTCAGGTTTTGGATG,, 3751,A1122689,20,343,TCAGGTTTTGGATGGAAGCA,, 3752,A1122689,20,337,TTTGGATGGAAGCAGGATGG., 3753,A1122689,20,331,TGGAAGCAGGATGGCCAGCC., 3754,A1122689,20,325,CAGGATGGCCAGCCTGGGTT,,
- 40 3755,A1122689,,20,319,GGCCAGCCTGGGTTTGAGAA,, 3756,A1122689,,20,313,CCTGGGTTTGAGAATCAAAA,, 3757,A1122689,,20,307,TTTGAGAATCAAAAGTTGAC,, 3758,A1122689,,20,301,AATCAAAAGTTGACCAGCTT,, 3759,A1122689,,20,295,AAGTTGACCAGCTTCTCTGT,
- 45 3760,AI122689,,20,289,ACCAGCTTCTCTGTCCATAA., 3761,AI122689,,20,283,TTCTCTGTCCATAAATCTAT,, 3762,AI122689,,20,277,GTCCATAAATCTATTACGTG., 3763,AI122689,,20,271,AAATCTATTACGTGGCTCTG., 3764,AI122689,,20,265,ATTACGTGGCTCTGCAG.,
- 50 3765,AI122689,,20,259,TGGCTCTGCTGGAGCCTCTC,, 3766,AI122689,,20,253,TGCTGGAGCCTCTCTGAACC,, 3767,AI122689,,20,247,AGCCTCTCTGAACCTATCCT,, 3768,AI122689,,20,241,TCTGAACCTATCCTGGTTAA,, 3769,AI122689,,20,235,CCTATCCTGGTTAAAAGGCT,
- 55 3770,AI122689,20,229,CTGGTTAAAAGGCTGCTCAA,, 3771,AI122689,20,223,AAAAGGCTGCTCAATTTGCT,, 3772,AI122689,20,217,CTGCTCAATTTGCTAATTGT,, 3773,AI122689,20,211,AATTTGCTAATTGTTCTTTG,, 3774,AI122689,20,205,CTAATTGTTCTTTGCTCAGT,
- 60 3775,All22689,,20,199,GTTCTTTGCTCAGTTTCTTA,, 3776,All22689,,20,193,TGCTCAGTTTCTTAAAAAAG,, 3777,All22689,,20,187,GTTCTTAAAAAAGTTGACT,, 3778,All22689,,20,181,TAAAAAAGTTGACTAGCTTC,, 3779,All22689,,20,175,AGTTGACTAGCTTCATTTCT,
- 65 3780,A1122689,20,169,CTAGCTTCATTTCTGTTAAT,,
 3781,A1122689,20,163,TCATTTCTGTTAATTCTTCC,,
 3782,A1122689,20,157,CTGTTAATTCTTCCAAGAGT,,
 3783,A1122689,20,151,ATTCTTCCAAGAGTACCGTA,,
 3784,A1122689,20,145,CCAAGAGTACCGTAGAGTAC,
- 3785,AI122689,,20,139,GTACCGTAGAGTACTTGATT,,
 3786,AI122689,,20,133,TAGAGTACTTGATTTTGTAA,,
 3787,AI122689,,20,127,ACTTGATTTTGTAATACCCT,,
 3788,AI122689,,20,121,TTTTGTAATACCCTAAGAACT,
 3789,AI122689,,20,115,AATACCCTAAGAACTATTAT,
 3790,AI122689,,20,109,CTAAGAACTATTATTGTAAA,

3791,A1122689,,20,103,ACTATTATTGTAAAACCCTG,, 3792,AI122689,,20,97,ATTGTAAAACCCTGAAAGAT,, 3793,A1122689,,20,91,AAACCCTGAAAGATAGTTTA,, 3794,AI122689,,20,85,TGAAAGATAGTTTATATTGG,, 3795,AI122689,,20,79,ATAGTTTATATTGGAAACTA,, 3796,AI122689,,20,73,TATATTGGAAACTAAGCCAT,, 3797,A1122689,,20,67,GGAAACTAAGCCATTTACAC,, 3798,AI122689,,20,61,TAAGCCATTTACACCTAAGT,, 3799,AI122689,,20,55,ATTTACACCTAAGTCACTGA,, 10 3800,AI122689,,20,49,ACCTAAGTCACTGAAATCAG,, 3801,AI122689,,20,43,GTCACTGAAATCAGGTTAGA,, 3802,A1122689,,20,37,GAAATCAGGTTAGAATGTTT,, 3803,AI122689,,20,31,AGGTTAGAATGTTTTTTTGA,, 3804,AI122689,,20,25,GAATGTTTTTTTGACAGAAA,, 3805,AI122689,,20,19,TTTTTTGACAGAAAAAAAA,, 3806,AI122689,,20,13,GACAGAAAAAAAAAAAAAA,, 3807,AI122689,,20,7,AAAAAAAAAAAAAAAAAAA,,, 3808,AI122689,,20,1,AAAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. A1092623) 20 TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGAAAAGACCAAATCGGCCCCAGGAGGCCATTTTCTTCGACAGAAGCTGAGGCGGGGG GGCGGGGCCTTCCCCCGCTCCACTCCCCCGCCCGCCCCGGCCCCGGTTTTCCGATCTCGGCCCAGGGAAAAGCCTTGGT CGCAAATCACCAGTTTGCCCCTGGGGCGGGGGGGGGGCTTTCTGAAACCAGGCTGGGGCTGGGACTCCGCCACCTTCAGCTAA GGGTACCGAGGTCAGTCCGGGAGTCGCGTCACCGGGACTCGAACCCGCCTTTTCGTTTTCCGAGGCCTAG (SEQ ID NO: 3809) 25 3810,AI092623,,20,314,CTAGGCCTCGGAAAACGAAA,, 3811,AI092623,,20,308,CTCGGAAAACGAAAAGGCGG., 3812,AI092623,,20,302,AAACGAAAAGGCGGGTTCGA,, 3813,AI092623,,20,296,AAAGGCGGGTTCGAGTCCCG, 30 3814,AI092623,,20,290,GGGTTCGAGTCCCGGTGACG,, 3815,A1092623,,20,284,GAGTCCCGGTGACGCGACTC,, 3816,A1092623,,20,278,CGGTGACGCGACTCCCGGAC,, 3817,A1092623,,20,272,CGCGACTCCCGGACTGACCT,, 3818,AI092623,,20,266,TCCCGGACTGACCTCGGTAC,, 3819,AI092623,,20,260,ACTGACCTCGGTACCCTTAG,, 35 3820,AI092623,,20,254,CTCGGTACCCTTAGCTGAAG,, 3821,AI092623,,20,248,ACCCTTAGCTGAAGGTGGCG, 3822,AI092623,,20,242,AGCTGAAGGTGGCGGAGTCC,, 3823,AI092623,,20,236,AGGTGGCGGAGTCCCAGCCC,, 3824,AI092623,,20,230,CGGAGTCCCAGCCCCAGCCT,, 40 3825,AI092623,,20,224,CCCAGCCCCAGCCTGGTTTC,, 3826,AI092623,,20,218,CCCAGCCTGGTTTCAGAAAG,, 3827,AI092623,,20,212,CTGGTTTCAGAAAGCCGCCC,, 3828,AI092623,,20,206,TCAGAAAGCCGCCCCGCCC,, 3829,AI092623,,20,200,AGCCGCCCCGCCCCAGGGG,, 3830,AI092623,,20,194,CCCCGCCCCAGGGGCAAATG,, 3831,AI092623,,20,188,CCCAGGGGCAAATGCAAACT,, 3832,AI092623,,20,182,GGCAAATGCAAACTGGTGAT,, 3833,AI092623,,20,176,TGCAAACTGGTGATTTGCGA,, 3834,AI092623,,20,170,CTGGTGATTTGCGACCAAGG,, 50 3835,AI092623,,20,164,ATTTGCGACCAAGGCTTTTC,, 3836,AI092623,,20,158,GACCAAGGCTTTTCCCTGGG,, 3837,AI092623,,20,152,GGCTTTTCCCTGGGCCGAGA,, 3838,AI092623,,20,146,TCCCTGGGCCGAGATCGGAA,, 55 3839,AI092623,,20,140,GGCCGAGATCGGAAAACCGG,, 3840,A1092623,,20,134,GATCGGAAAACCGGGGCCGG,, 3841,A1092623,,20,128,AAAACCGGGGCCGGGGCCGGG,, 3842,A1092623,,20,122,GGGGCCGGGGGCCGGGGG, 3843,AI092623,,20,116,GGGGGGGGGGGGGGGAGTGG,, 3844,AI092623,,20,110,GGGCGGGGGAGTGGAGGGGG, 60 3845,AI092623,,20,104,GGGAGTGGAGGGGGAAGCGG,, 3846,AI092623,,20,98,GGAGGGGGAAGCGGGGGAAG,, 3847,AI092623,,20,92,GGAAGCGGGGGAAGGCCCCG,, 3848,AI092623,,20,86,GGGGGAAGGCCCCCCCC,, 3849,AI092623,,20,80,AGGCCCCGCCCCCCGCCTC,,3850,AI092623,,20,74,CGCCCCCCCGCCTCAGCTTC, 3851,AI092623,,20,68,CCCGCCTCAGCTTCTGTCGA,, 3852,A1092623,,20,62,TCAGCTTCTGTCGAAGAAAA,, 3853,AI092623,,20,56,TCTGTCGAAGAAAATGGCCT,, 3854,AI092623,,20,50,GAAGAAAATGGCCTCCTGGG,, 3855,AI092623,,20,44,AATGGCCTCCTGGGGCCGAT,, 3856,AI092623,,20,38,CTCCTGGGGCCGATTTGGTC,, 3857,A1092623,,20,32,GGGCCGATTTGGTCTTTTCA,,

3858,AI092623,,20,26,ATTTGGTCTTTTCAAAAAAA,,

3859,AI092623,,20,20,TCTTTTCAAAAAAAAAAAAAAAA,

75

3860,A1092623,,20,14,CAAAAAAAAAAAAAAAAAAAAAA,, 3861,AI092623,,20,8,AAAAAAAAAAAAAAAAAAAA,, 3862,AI092623,,20,2,AAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. A1095492)

TTTTAAAAAGCACCACTGGGCAACAATCAAAGGGCTTCAGGTAAAAGTCACCGATGGAGGTTAAGGGGGGGTCTGCAAAAGTTTCAT GAATAAAACAATGGTTGTGATGGTGAACTGAAGGGTGGCTAGATGGCTGGTATTGTTTCTGGTGTGATGGTGCTCCCAGAGAGACCT GAAATTTGAGTCAGTGGACTAGGAGGAAGATCCACCTCAGTGGGGGTGGGCACCCTCCAACCGGCTGCCAGCGCGCTAGAAC AAGGCAGGCAGAAAAAAGTAGGTAAGCTAGCTTGCTGAGTCTTCTGGCTTTCGTCTTTACCCCATGCTGGATGCTTCTGTCCATTCC

- TCCTGCCCTTGGACATCACACTC (SEQ ID NO: 3863) 3864,AI095492,,20,437,GAGTGTGATGTCCAAGGGCA,, 3865,A1095492,,20,431,GATGTCCAAGGGCAGGAGGA,, 15 3866,AI095492,,20,425,CAAGGGCAGGAGGAATGGAC,, 3867,A1095492,,20,419,CAGGAGGAATGGACAGAAGC,, 3868,AI095492,,20,413,GAATGGACAGAAGCATCCAG,, 3869,AI095492,,20,407,ACAGAAGCATCCAGCATGGG,, 3870,A1095492,,20,401,GCATCCAGCATGGGGTAAAG,, -20 3871,AI095492,,20,395,AGCATGGGGTAAAGACGAAA,, 3872,A1095492,,20,389,GGGTAAAGACGAAAGCCAGA,, 3873,AI095492,,20,383,AGACGAAAGCCAGAAGACTC, 3874,A1095492,,20,377,AAGCCAGAAGACTCAGCAAG,, 3875,AI095492,,20,371,GAAGACTCAGCAAGCTAGCT,, 3876,AI095492,,20,365,TCAGCAAGCTAGCTTACCTA,, 3877,A1095492,,20,359,AGCTAGCTTACCTACTTTTT,, 3878,A1095492,,20,353,CTTACCTACTTTTTTCTGCC,, 3879,A1095492,,20,347,TACTTTTTTCTGCCTGCCTT,, 3880,A1095492,,20,341,TTTCTGCCTGCCTTGTTCTA,, 30 3881,AI095492,,20,335,CCTGCCTTGTTCTAGCCGCG,, 3882,A1095492,,20,329,TTGTTCTAGCCGCGCTGGCA,, 3883,AI095492,,20,323,TAGCCGCGCTGGCAGCCGGT., 3884,A1095492,,20,317,CGCTGGCAGCCGGTTGGAGG,, 3885,AI095492,,20,311,CAGCCGGTTGGAGGGTGCCC,, 3886,AI095492,,20,305,GTTGGAGGGTGCCCACCCCC,, 3887,AI095492,,20,299,GGGTGCCCACCCCACTGAG,, 3888,AI095492,,20,293,CCACCCCACTGAGGGTGGA,, 3889,A1095492,,20,287,CCACTGAGGGTGGATCTTCC, 3890,A1095492,,20,281,AGGGTGGATCTTCCTCTCT, 40 3891,AI095492,,20,275,GATCTTCCTCTCCTAGTCCA,, 3892,A1095492,,20,269,CCTCTCCTAGTCCACTGACT,, 3893,A1095492,,20,263,CTAGTCCACTGACTCAAATT,, 3894,AI095492,,20,257,CACTGACTCAAATTTCAGTC,, 3895,AI095492,,20,251,CTCAAATTTCAGTCTCTCTG,, 45 3896,AI095492,,20,245,TTTCAGTCTCTCTGGGAGCA., 3897,AI095492,,20,239,TCTCTCTGGGAGCACCATCA,, 3898,AI095492,,20,233,TGGGAGCACCATCACACCAG,, 3899,AI095492,,20,227,CACCATCACACCAGAAACAA,, 3900,A1095492,,20,221,CACACCAGAAACAATACCAG,, 3901,AI095492,,20,215,AGAAACAATACCAGCCATCT,, 3902,AI095492,,20,209,AATACCAGCCATCTAGCCAC,,
- 3905,AI095492,,20,191,ACCCTTCAGTTCACCATCAC, 55 3906,AI095492,,20,185,CAGTTCACCATCACAACCAT,, 3907,AI095492,,20,179,ACCATCACAACCATTGTTTT,, 3908,AI095492,,20,173,ACAACCATTGTTTTATTCAT,, 3909,AI095492,,20,167,ATTGTTTTATTCATGAAACT,, 3910,AI095492,,20,161,TTATTCATGAAACTTTTGCA,, 60 3911,AI095492,,20,155,ATGAAACTTTTGCAGACCCC,, 3912,AI095492,,20,149,CTTTTGCAGACCCCCTTAA., 3913,AI095492,,20,143,CAGACCCCCTTAACCTCCA,, 3914,AI095492,,20,137,CCCCTTAACCTCCATCGGTG,, 3915,AI095492,,20,131,AACCTCCATCGGTGACTTTT,,

3903,AI095492,,20,203,AGCCATCTAGCCACCCTTCA,, 3904,AI095492,,20,197,CTAGCCACCCTTCAGTTCAC,,

- 3916,AI095492,,20,125,CATCGGTGACTTTTACCTGA,, 3917,AI095492,,20,119,TGACTTTTACCTGAAGCCCT,, 3918,AI095492,,20,113,TTACCTGAAGCCCTTTGATT,, 3919,AI095492,,20,107,GAAGCCCTTTGATTGTTGCC,, 3920,AI095492,,20,101,CTTTGATTGTTGCCCAGTGG,,
- 70 3921,AI095492,,20,95,TTGTTGCCCAGTGGTGCTTT,, 3922,AI095492,,20,89,CCCAGTGGTGCTTTTTAAAA,, 3923,AI095492,,20,83,GGTGCTTTTTAAAATAATTT,, 3924,AI095492,,20,77,TTTTAAAATAATTTCCATAG,, 3925,AI095492,,20,71,AATAATTTCCATAGTTTTTT,, 75

3926,AI095492,,20,65,TTCCATAGTTTTTTTTACAC,

3927,AI095492,,20,59,AGTTTTTTTTACACCTTTAG,, 3928,AI095492,,20,53,TTTTACACCTTTAGTTGGCA,, 3929,AI095492,,20,47,ACCTTTAGTTGGCATTTTAC,, 3930,AI095492,,20,41,AGTTGGCATTTTACTGTAAA,, 3931,AI095492,,20,35,CATTTTACTGTAAAGGAGAG,, 3932,AI095492,,20,29,ACTGTAAAGGAGAGATTTTA,, 3933,AI095492,,20,23,AAGGAGAGATTTTATTTTTT,, 3934,A1095492,,20,17,AGATTTTATTTTTTAAAAA,, 3935,AI095492,,20,11,TATTTTTTTAAAAAAAAAAAA,, 3936,AI095492,,20,5,TTTAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI138216) TGGTTTTGTGAACTGCTTTTATTTCATTTGGTTTTATATTGGAATCAATTCACCATGACATTTAATAGCCTTCAAAACAGGATTTTTGT AATGGCTGCGTGTTAGTCCATCATATTAACATTTATTATTATACATTCCTCTATTTTGGACGTAACAGATACTATTTCGGAAGATTTGTTT TTTATAATCTCTCTAAGATGAATATTTTTCTCCTAGAATGTAAACACTATAAAGGCAGAGAGTTTGTCTTACTGATCACAATACCCTC 15 (SEQ ID NO: 3937) 3938,A1138216,,20,313,CATCCATCCATCCATCCATC,, 3939,A1138216,,20,307,TCCATCCATCCATCCATCCC,, 20 3940,AI138216,,20,301,CATCCATCCATCCCTGTTGA,, 3941,AI138216,,20,295,TCCATCCCTGTTGAGCTCCA,, 3942,A1138216,,20,289,CCTGTTGAGCTCCAACTATG,, 3943,AI138216,,20,283,GAGCTCCAACTATGTGTCAG,, 3944,AI138216,,20,277,CAACTATGTGTCAGGCACTT,, 3945,A1138216,,20,271,TGTGTCAGGCACTTCTGGGG, 3946,A1138216,,20,265,AGGCACTTCTGGGGGGTTGA,, 3947,A1138216,,20,259,TTCTGGGGGGTTGAGGGTAT, 3948,AI138216,,20,253,GGGGTTGAGGGTATTGTGAT,, 3949,AI138216,,20,247,GAGGGTATTGTGATCAGTAA,, 3950,AI138216,,20,241,ATTGTGATCAGTAAGACAAA,, 30 3951,AI138216,,20,235,ATCAGTAAGACAAACTCTCT,, 3952,AII 38216,,20,229,AAGACAAACTCTCTGCCTTT,, 3953,AI138216,,20,223,AACTCTCTGCCTTTATAGTG,, 3954,AI138216,,20,217,CTGCCTTTATAGTGTTTTACA,, 35 3955,AI138216,,20,211,TTATAGTGTTTACATTCTAG,, 3956,A1138216,,20,205,TGTTTACATTCTAGGAGAAA,, 3957,AI138216,,20,199,CATTCTAGGAGAAAAATATT,, 3958,AI138216,,20,193,AGGAGAAAAATATTCATCTT,, 3959,AI138216,,20,187,AAAATATTCATCTTAGAGAG, 40 3960,AI138216,,20,181,TTCATCTTAGAGAGATTATA,, 3961,A1138216,,20,175,TTAGAGAGATTATAAAAAAC,, 3962,AI138216,,20,169,AGATTATAAAAAAACAAATCT,, 3963,A1138216,,20,163,TAAAAAAACAAATCTTCCGAA,, 3964,AII38216,,20,157,ACAAATCTTCCGAAATAGTA,, 45 3965,A1138216,,20,151,CTTCCGAAATAGTATCTGTT,, 3966,A1138216,,20,145,AAATAGTATCTGTTACGTCC,, 3967,A1138216,,20,139,TATCTGTTACGTCCAAAATA,, 3968,AI138216,,20,133,TTACGTCCAAAATAGAGGAA,, 3969,AI138216,,20,127,CCAAAATAGAGGAATGTATA,, 50 3970,AI138216,,20,121,TAGAGGAATGTATAAATAAA,, 3971,A1138216,,20,115,AATGTATAAATAAATGTTAA,, 3972,AI138216,,20,109,TAAATAAATGTTAATATGAT, 3973,AI138216,,20,103,AATGTTAATATGATGGACTA,, 3974,AI138216,,20,97,AATATGATGGACTAACACGC,, 55 3975,AII38216,,20,91,ATGGACTAACACGCAGCCAT,, 3976,A1138216,,20,85,TAACACGCAGCCATTACAAA,, 3977,A1138216,,20,79,GCAGCCATTACAAAAATCCT,, 3978,AI138216,,20,73,ATTACAAAAATCCTGTTTTG,, 3979,AII38216,,20,67,AAAATCCTGTTTTGAAGGCT,, 3980,AII38216,,20,61,CTGTTTTGAAGGCTATTAAA,, 60 3981,A1138216,,20,55,TGAAGGCTATTAAATGTCAT,, 3982,A1138216,,20,49,CTATTAAATGTCATGGTGAA,, 3983,A1138216,,20,43,AATGTCATGGTGAATTGATT,, 3984,AI138216,,20,37,ATGGTGAATTGATTCCAATA,, 65 3985,A1138216,,20,31,AATTGATTCCAATATAAAAC,, 3986,A1138216,,20,25,TTCCAATATAAAACCAAATG,, 3987,AI138216,,20,19,TATAAAACCAAATGAAATAA,, 3988,A1138216,,20,13,ACCAAATGAAATAAAAGCAG,, 3989,AI138216,,20,7,TGAAATAAAAGCAGTTCACA,, 70 3990,AII38216,,20,1,AAAAGCAGTTCACAAAACCA,, (GENBANK ACCESSION NO. A1128305)

TTTTACATATCCTTTGTTTTGGAATGCTCACTTGCTTAATTGACTAAATAGGTGGAAGTCAAATCTTCTCTAGCCATTGATGTGAACCCAATGAAACCTATATTCTCAAGGAGTATTTTGTTAGCTTGGTACCAGCTACCTGACAAATTTGAAAATACAGCT (SEQ ID NO: 3991)

- 3992,AI128305,,20,404,AGCTGTATTTTCAAATTTGT,, 3993,AI128305,,20,398,ATTTTCAAATTTGTCAGGTA,, 3994,A1128305,,20,392,AAATTTGTCAGGTAGCTGGT,, 3995,A1128305,,20,386,GTCAGGTAGCTGGTACCAAG,, 3996,A1128305,,20,380,TAGCTGGTACCAAGCTAACA,, 10 3997,AI128305,,20,374,GTACCAAGCTAACAAAATAC,, 3998,AI128305,,20,368,AGCTAACAAAATACTCCTTG,, 3999,A1128305,,20,362,CAAAATACTCCTTGAGAATA,, 4000,AI128305,,20,356,ACTCCTTGAGAATATAGTTT,, 4001,AI128305,,20,350,TGAGAATATAGTTTCATTGG,, 15 4002,A1128305,,20,344,TATAGTTTCATTGGTTCACA,, 4003,AI128305,,20,338,TTCATTGGTTCACATCAATG,, 4004,AI128305,,20,332,GGTTCACATCAATGGCTAGA,, 4005,AI128305,,20,326,CATCAATGGCTAGAGAAGAT,, 4006,AI128305,,20,320,TGGCTAGAGAAGATTTGACT,, 4007,AI128305,,20,314,GAGAAGATTTGACTTCCACC,, 4008,A1128305,,20,308,ATTTGACTTCCACCTATTTA,, 4009,AI128305,,20,302,CTTCCACCTATTTAGTCAAT,, 4010,A1128305,,20,296,CCTATTTAGTCAATTAAGCA,, 4011,A1128305,,20,290,TAGTCAATTAAGCAAGTGAG,, 4012,AI128305,,20,284,ATTAAGCAAGTGAGCATTCC,, 4013,AI128305,,20,278,CAAGTGAGCATTCCAAAACA,, 4014,AI128305,,20,272,AGCATTCCAAAACAAAGGAT,, 4015,AI128305,,20,266,CCAAAACAAAGGATATGTAA,, 4016,A1128305,,20,260,CAAAGGATATGTAAAAGTTA,, 4017,AI128305,,20,254,ATATGTAAAAGTTAGATAAA,, 4018,A1128305,,20,248,AAAAGTTAGATAAAAATACC,, 4019,A1128305,,20,242,TAGATAAAAATACCTGCAGG,, 4020,AI128305,,20,236,AAAATACCTGCAGGGTTTTT,, 4021,AI128305,,20,230,CCTGCAGGGTTTTTGTTTTG,, 4022,AI128305,,20,224,GGGTTTTTGTTTTGTTTTGT,, 4023,A1128305,,20,218,TTGTTTTGTTTTGTTTTTTG,, 4024,AI128305,,20,212,TGTTTTGTTTTTTGAAATGG,, 4025,AI128305,,20,206,GTTTTTTGAAATGGTCATCT,, 4026,A1128305,,20,200,TGAAATGGTCATCTTGCTGT,, 40 4027,A1128305,,20,194,GGTCATCTTGCTGTGTTGCT,, 4028,AI128305,,20,188,CTTGCTGTGTTGCTTGGGCT,, 4029,AI128305,,20,182,GTGTTGCTTGGGCTGGTCTT,, 4030,AI128305,,20,176,CTTGGGCTGGTCTTGAACTC,, 4031,AI128305,,20,170,CTGGTCTTGAACTCCCCTAC,, 4032,AI128305,,20,164,TTGAACTCCCCTACTCAGGT,, 4033,AI128305,,20,158,TCCCCTACTCAGGTGATCCT,, 4034,AI128305,,20,152,ACTCAGGTGATCCTCCTGTG,, 4035,AI128305,,20,146,GTGATCCTCCTGTGTCAAGG,, 4036,A1128305,,20,140,CTCCTGTGTCAAGGTACTTT, 4037,AI128305,,20,134,TGTCAAGGTACTTTTATTTA,, 4038,AI128305,,20,128,GGTACTTTTATTTAACCCAA,, 4039,A1128305,,20,122,TTTATTTAACCCAAGTTTAT,, 4040,AI128305,,20,116,TAACCCAAGTTTATTATTTT,, 4041,AI128305,,20,110,AAGTTTATTATTTTGGTTTA,, 4042,AI128305,,20,104,ATTATTTTGGTTTATATGGA,, 4043,A1128305,,20,98,TTGGTTTATATGGACATGTC,, 4044,AI128305,,20,92,TATATGGACATGTCAAATGC,, 4045,A1128305,,20,86,GACATGTCAAATGCAGACTT,, 4046,AI128305,,20,80,TCAAATGCAGACTTTGTTAT,, 4047,AI128305,,20,74,GCAGACTTTGTTATAATGAA,, 4048,AI128305,,20,68,TTTGTTATAATGAAATCCTT,, 4049,A1128305,,20,62,ATAATGAAATCCTTAGTGCT,, 4050,AI128305,,20,56,AAATCCTTAGTGCTCAATAA,, 4051,AII28305,,20,50,TTAGTGCTCAATAAAATGGT,, 4052,AI128305,,20,44,CTCAATAAAATGGTCATTGA,, 4053,AI128305,,20,38,AAAATGGTCATTGAATTTAA,, 4054,AI128305,,20,32,GTCATTGAATTTAAAAAAAA,, 4055,A1128305,,20,26,GAATTTAAAAAAAAAAAAAAA,, 4056,AI128305,,20,20,AAAAAAAAAAAAAAAAAAAAAAA,, 4057,AI128305,,20,14,AAAAAAAAAAAAAAAAAAAAAAA, 4058,AI128305,,20,8,AAAAAAAAAAAAAAAAAAAA,, 4059,AI128305,,20,2,AAAAAAAAAAAAAAAAAAAAAA,,
- TTTTTTTTTTTTTTTTTTTAAGTTTCTATAATTTCATTTTATTGGAATGAACTCCAAAAAAAGCTAAAAAGGAAAAAGGTTTCT

 CAGCCATACTTCATTTCCACTCTGATGTTTTCCAGTCATAATTACTGCTTAAATATTCTTTTATACCATGCTAGATTTTTCCAATTGGT

(GENBANK ACCESSION NO. AI125228)

- 5
 4061,AI125228,,20,374,CTGAAATAATTTTTTATTTC,,
 4062,AI125228,,20,368,TAATTTTTTATTTCCTACTA,
 4063,AI125228,,20,362,TTTATTTCCTACTATCTAAC,,
 4064,AI125228,,20,356,TCCTACTATCTAACTTACCA,
- 10 4065,AI125228,,20,350,TATCTAACTTACCAAACTTC,, 4066,AI125228,,20,344,ACTTACCAAACTTCCTGATT,, 4067,AI125228,,20,334,CAAACTTCCTGATTTTAATT,, 4068,AI125228,,20,332,TCCTGATTTTAATTACATAA,, 4069,AI125228,,20,326,TTTTAATTACATAACAATTT,,
- 15 4070,AI125228,,20,320,TTACATAACAATTITTTGGT,, 4071,AI125228,,20,314,AACAATTTTTTGGTTATTTT,, 4072,AI125228,,20,308,TTTTTGGTTATTTTAATATTT, 4073,AI125228,,20,302,GTTATTTTAATATTCATTTG,, 4074,AI125228,,20,296,TTAATATTCATTTGGGACTT,
- 20 4075,AI125228,,20,290,TTCATTTGGGACTTATTTCC,, 4076,AI125228,,20,284,TGGGACTTATTTCCTTTTTT,, 4077,AI125228,,20,278,TTATTTCCTTTTTATTGTT,, 4078,AI125228,,20,272,CCTTTTTTATTGTTATAGTA,, 4079,AI125228,,20,266,TTATTGTTATAGTATTAGAT,,
- 25 4080,AII25228,,20,260,TTATAGTATTAGATGAAATC,, 4081,AII25228,,20,254,TATTAGATGAAATCATAACA,, 4082,AII25228,,20,248,ATGAAATCATAACATCAATT,, 4083,AII25228,,20,242,TCATAACATCAATTTGCTCCC,, 4084,AII25228,,20,236,CATCAATTTGCTCCTTTGTA,,
- 30 4085,AI125228,,20,230,TTTGCTCCTTTGTAAAAAAG,, 4086,AI125228,,20,224,CCTTTGTAAAAAAGGATGTT,, 4087,AI125228,,20,218,TAAAAAAGGATGTTGAGTTA,, 4088,AI125228,,20,212,AGGATGTTGAGTTAAAAGTG,, 4089,AI125228,,20,206,TTGAGTTAAAAGTGTTTTAA,,
- 35 4090,AI125228,,20,200,TAAAAGTGTTTTAAGGTGGC,, 4091,AI125228,,20,194,TGTTTTAAGGTGGCTTTCAG,, 4092,AI125228,,20,188,AAGGTGGCTTTCAGCAATAG,, 4093,AI125228,,20,182,GCTTTCAGCAATAGGCTGCC,, 4094,AI125228,,20,176,AGCAATAGGCTGCCATACCA,,
- 40 4095,AI125228,,20,170,AGGCTGCCATACCAATTGGA,, 4096,AI125228,,20,164,CCATACCAATTGGAAAAAATC,, 4097,AI125228,,20,158,CAATTGGAAAAATCTAGCAT,, 4098,AI125228,,20,152,GAAAAATCTAGCATGGTATA,, 4099,AI125228,,20,146,TCTAGCATGGTATAAAAGAA,,
- 45 4100,A1125228,,20,140,ATGGTATAAAAGAATATTTA,, 4101,A1125228,,20,134,TAAAAGAATATTTAAGCAGT,, 4102,A1125228,,20,128,AATATTTAAGCAGTAATTAT,, 4103,A1125228,,20,122,TAAGCAGTAATTATGACTGG,, 4104,A1125228,,20,116,GTAATTATGACTGGAAAACA,,
- 50 4105,AI125228,,20,110,ATGACTGGAAAACATCAGAG,, 4106,AI125228,,20,104,GGAAAACATCAGAGTGGAAA,, 4107,AI125228,,20,98,CATCAGAGTGGAAATGAAGT,, 4108,AI125228,,20,92,AGTGGAAATGAAGTATGGCT,, 4109,AI125228,,20,86,AATGAAGTATGGCTGAGAAA,,
- 55 4110,A1125228,,20,80,GTATGGCTGAGAAACCTTTT,
 4111,A1125228,,20,74,CTGAGAAACCTTTTTGCTTT,
 4112,A1125228,,20,68,AACCTTTTTGCTTTTAGCTT,
 4113,A1125228,,20,62,TTTGCTTTTAGCTTTTTTTG,
- 4114,AI125228,,20,56,TTTAGCTTTTTTTGGAGTTC,,
 60 4115,AI125228,,20,50,TTTTTTTTGGAGTTCATTCCA,,
 4116,AI125228,,20,44,TGGAGTTCATTCCATAAAA,,
 4117,AI125228,,20,38,TCATTCCAATAAAATGAAAAT,,
 4118,AI125228,,20,32,CAATAAAATGAAATTATAGA,,
 4119,AI125228,,20,26,AATGAAATTATAGAAACTTA,,
- 65 4120,AI125228,,20,20,ATTATAGAAACTTAAAAAAA,, 4121,AI125228,,20,14,GAAACTTAAAAAAAAAAAAA,, 4122,AI125228,,20,8,TAAAAAAAAAAAAAAAAAAAAAAA,, 4123,AI125228,,20,2,AAAAAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI041482)
- 75 (SEQ ID NO: 4124)

4125,A1041482,,20,342,ACAATGACTTCTAGAATGTC,, 4126,A1041482,,20,336,ACTTCTAGAATGTCTTCTGA,, 4127,AI041482,,20,330,AGAATGTCTTCTGAAGCATC,, 4128,AI041482,,20,324,TCTTCTGAAGCATCTGCTTG,, 4129,AI041482,,20,318,GAAGCATCTGCTTGAGGCTT,, 4130,AI041482,,20,312,TCTGCTTGAGGCTTGTTTTT,, 4131,AI041482,,20,306,TGAGGCTTGTTTTTGAGTTA,, 4132,AI041482,,20,300,TTGTTTTTGAGTTAACTTTT,, 10 4133,AI041482,,20,294,TTGAGTTAACTTTTCTTTTT,, 4134,AI041482,,20,288,TAACTTTTCTTTTTTAGTAA,, 4135,AI041482,,20,282,TTCTTTTTTAGTAAGTAGAA,, 4136,AI041482,,20,276,TITAGTAAGTAGAAGGAATA,, 4137,AI041482,,20,270,AAGTAGAAGGAATACATTCT,, 4138,A1041482,,20,264,AAGGAATACATTCTAAAATA,, 4139,A1041482,,20,258,TACATTCTAAAATAACAATA,, 4140,AI041482,,20,252,CTAAAATAACAATAAATAGT,, 4141,AI041482,,20,246,TAACAATAAATAGTATAAAA,, 4142,AI041482,,20,240,TAAATAGTATAAAAATATAT,, 20 4143,AI041482,,20,234,GTATAAAAATATATAAACCA,, 4144,AI041482,,20,228,AAATATATAAACCAGTAATG,, 4145,AI041482,,20,222,ATAAACCAGTAATGTGGTCA,, 4146,AI041482,,20,216,CAGTAATGTGGTCACTTATT,, 4147,AI041482,,20,210,TGTGGTCACTTATTACTATT,, 4148,AI041482,,20,204,CACTTATTACTATTCATTAT,, 4149,AI041482,,20,198,TTACTATTCATTATTATGTA,, 4150,AI041482,,20,192,TTCATTATTATGTACTGTAT,, 4151,AI041482,,20,186,ATTATGTACTGTATATAATC,, 4152,AI041482,,20,180,TACTGTATATAATCTACTGT,, 30 4153,AI041482,,20,174,ATATAATCTACTGTACATAA,, 4154,AI041482,,20,168,TCTACTGTACATAACCATAT,, 4155,AI041482,,20,162,GTACATAACCATATTTACTA,, 4156,AI041482,,20,156,AACCATATTTACTACTGTTA,, 4157,AI041482,,20,150,ATTTACTACTGTTACATGAC,, 4158,AI041482,,20,144,TACTGTTACATGACTGGCAG,, 4159,AI041482,,20,138,TACATGACTGGCAGTGCAGC,, 4160,AI041482,,20,132,ACTGGCAGTGCAGCAGGTTT,, 4161,AI041482,,20,126,AGTGCAGCAGGTTTAAATGA,, 4162,AI041482,,20,120,GCAGGTTTAAATGACAGACA,, 4163,AI041482,,20,114,TTAAATGACAGACATGTGAG,, 4164,AI041482,,20,108,GACAGACATGTGAGTAATGT,, 4165,AI041482,,20,102,CATGTGAGTAATGTGCTTTA,, 4166,AI041482,,20,96,AGTAATGTGCTTTACAATGT,, 4167,AI041482,,20,90,GTGCTTTACAATGTTACACT,, 4168,AI041482,,20,84,TACAATGTTACACTGGCTAT,, 4169,AI041482,,20,78,GTTACACTGGCTATGTCATT,, 4170,AI041482,,20,72,CTGGCTATGTCATTAGGTGA,, 4171,AI041482,,20,66,ATGTCATTAGGTGATTGGAA,, 4172,AI041482,,20,60,TTAGGTGATTGGAATTTTTT,, 50 4173,AI041482,,20,54,GATTGGAATTTTTTAGCACT,, 4174,AI041482,,20,48,AATTTTTTAGCACTATTAAA,, 4175,AI041482,,20,42,TTAGCACTATTAAAATGTTA,, 4176,AI041482,,20,36,CTATTAAAATGTTATGAGAG,, 4177,AI041482,,20,30,AAATGTTATGAGAGCACTGT,, 55 4178,AI041482,,20,24,TATGAGAGCACTGTCAAAAA,, 4179,AI041482,,20,18,AGCACTGTCAAAAAAAAAAA,, 4180,AI041482,,20,12,GTCAAAAAAAAAAAAAAAAAA,, 4181,AI041482,,20,6,AAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI051839) TTTTTTTTTTTTTTTTTTTTTTTTTTAGGTAACTAAGTTTCCTGTTTTAATGATATATTTAGGAAATTCTGATATCATTTCAAGTAT CTTTAAAAACAATCTACTTAATTGTCAACAACCAAGTGTATGGAAATTTACGTAAAATCCTGTTTACAGATGAGAGAGGCGGCTGC TGTGGTGACAGCACACAGTCAGCAAAGAGGTCCAGAGGATGACGTGCAGCTTCCCGGCGGCCTGGAGAGCTCCCCAGGTCTCACCC CATCCCGCTTCCATCTCAAGGCTCTGGGCACCCCCCTCTTGCAGACCTGCTTCTATTTCTTTGGACAGTTTTGGGAAAATCACGCTCTT TAACCCTAAACACTTCGGATCACTTCAAAACAAGATGCTCAGAAAAGGGAAACTCTAATCCGTCAACCAGGGAAAGATAGTAACTG TCTAATCGCACAGCATCCCACAGTGAGCAGCCACC (SEQ ID NO: 4182) 4183,AI051839,,20,454,GGTGGCTGCTCACTGTGGGA., 4184,AI051839,,20,448,TGCTCACTGTGGGATGCTGT,, 4185,AI051839,,20,442,CTGTGGGATGCTGTGCGATT,, 4186,AI051839,,20,436,GATGCTGTGCGATTAGACAG,, 4187,AI051839,,20,430,GTGCGATTAGACAGTTACTA,, 4188,AI051839,,20,424,TTAGACAGTTACTATCTTTC,, 4189,AI051839,,20,418,AGTTACTATCTTTCCCTGGT,, 75 4190,AI051839,,20,412,TATCTTTCCCTGGTTGACGG,,

4191,AI051839,,20,406,TCCCTGGTTGACGGATTAGA,, 4192,AI051839,,20,400,GTTGACGGATTAGAGTTTCC,, 4193,AI051839,,20,394,GGATTAGAGTTTCCCTTTTC,, 4194,A1051839,,20,388,GAGTTTCCCTTTTCTGAGCA,, 4195,A1051839,,20,382,CCCTTTTCTGAGCATCTTGT,, 4196,AI051839,,20,376,TCTGAGCATCTTGTTTTGAA,, 4197,AI051839,,20,370,CATCTTGTTTTGAAGTGATC,, 4198,AI051839,,20,364,GTTTTGAAGTGATCCGAAGT,, 4199,AI051839,,20,358,AAGTGATCCGAAGTGTTTAG,, 4200,AI051839,,20,352,TCCGAAGTGTTTAGGGTTAA,, 4201,AI051839,,20,346,GTGTTTAGGGTTAAAGAGCG,, 4202,AI051839,,20,340,AGGGTTAAAGAGCGTGATTT,, 4203,AI051839,,20,334,AAAGAGCGTGATTTTCCCAA,, 4204,AI051839,,20,328,CGTGATTTTCCCAAACTGTC,, 4205,AI051839,,20,322,TTTCCCAAACTGTCCAAAGA,, 4206,A1051839,,20,316,AAACTGTCCAAAGAAATAGA,, 4207,AI051839,,20,310,TCCAAAGAAATAGAAGCAGG,, 4208,AI051839,,20,304,GAAATAGAAGCAGGTCTGCA,, 4209,AI051839,,20,298,GAAGCAGGTCTGCAAGAGGG,, 4210,AI051839,,20,292,GGTCTGCAAGAGGGGGGTGC,, 4211,AI051839,,20,286,CAAGAGGGGGGTGCCCAGAG,, 4212,A1051839,,20,280,GGGGGTGCCCAGAGCCTTGA,, 4213,AI051839,,20,274,GCCCAGAGCCTTGAGATGGA,, 4214,A1051839,,20,268,AGCCTTGAGATGGAAGCGGG,, 4215,AI051839,,20,262,GAGATGGAAGCGGGATGGGG,, 4216,AI051839,,20,256,GAAGCGGGATGGGGTGAGAC,, 4217,AI051839,,20,250,GGATGGGGTGAGACCTGGGG,, 4218,AI051839,,20,244,GGTGAGACCTGGGGAGCTCT,, 4219,AI051839,,20,238,ACCTGGGGAGCTCTCCAGGC,, 4220,AI051839,,20,232,GGAGCTCTCCAGGCCGCCGG,, 4221,AI051839,,20,226,CTCCAGGCCGCCGGGAAGCT,, 4222,AI051839,,20,220,GCCGCCGGGAAGCTGCACGT,, 4223,AI051839,,20,214,GGGAAGCTGCACGTCATCCT,, 4224,AI051839,,20,208,CTGCACGTCATCCTCTGGAC,, 4225,A1051839,,20,202,GTCATCCTCTGGACCTCTTT,, 4226,A1051839,,20,196,CTCTGGACCTCTTTGCTGAC,, 4227,AI051839,,20,190,ACCTCTTTGCTGACTGTGTG, 4228,A1051839,,20,184,TTGCTGACTGTGTGTGTCA,, 4229,AI051839,,20,178,ACTGTGTGCTGTCACCACAG,, 4230,AI051839,,20,172,TGCTGTCACCACAGCAGCCG,, 4231,A1051839,,20,166,CACCACAGCAGCCGCCTTCT,, 4232,AI051839,,20,160,AGCAGCCGCCTTCTCTCATC,, 4233,AI051839,,20,154,CGCCTTCTCTCATCTGTAAA, 4234,AI051839,,20,148,CTCTCATCTGTAAACAGGAT, 45 4235,AI051839,,20,142,TCTGTAAACAGGATTTTACG,, 4236,AI051839,,20,136,AACAGGATTTTACGTAAATT,, 4237,AI051839,,20,130,ATTTTACGTAAATTTCCATA,, 4238,AI051839,,20,124,CGTAAATTTCCATACACTTG,, 4239,A1051839,,20,118,TTTCCATACACTTGGTTGTT,, 50 4240,AI051839,,20,112,TACACTTGGTTGTTGACAAT,, 4241,AI051839,,20,106,TGGTTGTTGACAATTAAGTA,, 4242,AI051839,,20,100,TTGACAATTAAGTAGATTGT,, 4243,AI051839,,20,94,ATTAAGTAGATTGTTTTTAA,, 4244,AI051839,,20,88,TAGATTGTTTTTAAAGATAC,, 4245,AI051839,,20,82,GTTTTTAAAGATACTTGAAA,, 4246,AI051839,,20,76,AAAGATACTTGAAATGATAT,, 4247,A1051839,,20,70,ACTTGAAATGATATCAGAAT,, 4248,AI051839,,20,64,AATGATATCAGAATTTCCTA,, 4249,AI051839,,20,58,ATCAGAATTTCCTAAATATA,, 4250,AI051839,,20,52,ATTTCCTAAATATATCATTA,, 4251,AI051839,,20,46,TAAATATATCATTAAAACAG,, 4252,AI051839,,20,40,TATCATTAAAACAGGAAACT,, 4253,AI051839,,20,34,TAAAACAGGAAACTTAGTTA,, 4254,AI051839,,20,28,AGGAAACTTAGTTACCTAAA,, 4255,AI051839,,20,22,CTTAGTTACCTAAAAAAAAA, 4256,AI051839,,20,16,TACCTAAAAAAAAAAAAAAA,, 4257,AT051839,,20,10,AAAAAAAAAAAAAAAAAAAAA,, 4258,AI051839,,20,4,AAAAAAAAAAAAAAAAAAAAA,,

4260,AI092429,,20,409,CAGAAAAAGGAGCTGGGTCA,, 4261,AI092429,,20,403,AAGGAGCTGGGTCATGTCAA,, 4262,A1092429,,20,397,CTGGGTCATGTCAATGGACT,, 4263,A1092429,,20,391,CATGTCAATGGACTGGTGGA,, 4264,AI092429,,20,385,AATGGACTGGTGGACAAATC,, 4265,AI092429,,20,379,CTGGTGGACAAATCTGGCAA,, 4266,AI092429,,20,373,GACAAATCTGGCAAACGGAC,, 4267,AI092429,,20,367,TCTGGCAAACGGACTACATC,, 10 4268,AI092429,,20,361,AAACGGACTACATCCCCCAG,, 4269,AI092429,,20,355,ACTACATCCCCCAGCAGTGA,, 4270,AI092429,,20,349,TCCCCCAGCAGTGACACTGA,, 4271,AI092429,,20,343,AGCAGTGACACTGACTTGTT,, 4272,AI092429,,20,337,GACACTGACTTGTTGGACAG,, 4273,AI092429,,20,331,GACTTGTTGGACAGATCGGC,, 4274,AI092429,,20,325,TTGGACAGATCGGCCAGCAA,, 4275,AI092429,,20,319,AGATCGGCCAGCAAAACTGA,, 4276,AI092429,,20,313,GCCAGCAAAACTGAACTAAA,, 4277,AI092429,,20,307,AAAACTGAACTAAAGGCCAT,, 4278,AI092429,,20,301,GAACTAAAGGCCATTGCCCA, 4279,AI092429,,20,295,AAGGCCATTGCCCATGCCCG, 20 4280,AI092429,,20,289,ATTGCCCATGCCCGGATCCT,, 4281,AI092429,,20,283,CATGCCCGGATCCTGGAAAG,, 4282,AI092429,,20,277,CGGATCCTGGAAAGGAGAGC,, 4283,AI092429,,20,271,CTGGAAAGGAGAGCCAGCAG,, 4284,AI092429,,20,265,AGGAGAGCCAGCAGGCCTGG,, 4285,A1092429,,20,259,GCCAGCAGGCCTGGCACACC,, 4286,AI092429,,20,253,AGGCCTGGCACACCCACATC,, 4287,AI092429,,20,247,GGCACACCCACATCCAGCGC,, 30 4288,AI092429,,20,241,CCCACATCCAGCGCCAGCAC,, 4289,AI092429,,20,235,TCCAGCGCCAGCACAGAGAC,, 4290,AI092429,,20,229,GCCAGCACAGAGACTCCCAC,, 4291,AI092429,,20,223,ACAGAGACTCCCACCTTTGA,, 4292,AI092429,,20,217,ACTCCCACCTTTGAGCAGAA,, 35 4293,AI092429,,20,211,ACCTTTGAGCAGAATGATGT,, 4294,AI092429,,20,205,GAGCAGAATGATGTCGACGA,, 4295,AI092429,,20,199,AATGATGTCGACGAAGACAT,, 4296,AI092429,,20,193,GTCGACGAAGACATCATTGA,, 4297,AI092429,,20,187,GAAGACATCATTGACGTGGA,, 4298,AI092429,,20,181,ATCATTGACGTGGATGAGGA,, 4299,AI092429,,20,175,GACGTGGATGAGGAACCAGT,, 4300,AI092429,,20,169,GATGAGGAACCAGTAGCAGC,, 4301,AI092429,,20,163,GAACCAGTAGCAGCGGAGCC,, 4302,AI092429,,20,157,GTAGCAGCGGAGCCAGACTA,, 4303,AI092429,,20,151,GCGGAGCCAGACTATGTGCA, 45 4304,AI092429,,20,145,CCAGACTATGTGCAGCCCCA,, 4305,AI092429,,20,139,TATGTGCAGCCCCAGCTGAG,, 4305,Al092429,,20,133,CAGCCCCAGCTGAGGCGGCC, 4307,Al092429,,20,127,CAGCTGAGGCGGCCCTTTGA, 4308,Al092429,,20,121,AGGCGGCCCTTTGAGCTGCT, 50 4309,A1092429,,20,115,CCCTTTGAGCTGCTGATTGC,, 4310,AI092429,,20,109,GAGCTGCTGATTGCTGCCGC,, 4311,AI092429,,20,103,CTGATTGCTGCCGCCATGGA,, 4312,AI092429,,20,97,GCTGCCGCCATGGAGCGGAA,, 55 4313,AI092429,,20,91,GCCATGGAGCGGAACCCCAC,, 4314,AI092429,,20,85,GAGCGGAACCCCACCCAATT,, 4315,AI092429,,20,79,AACCCCACCCAATTTCAGTT,, 4316,AI092429,,20,73,ACCCAATTTCAGTTGCCCAA,, 4317,AI092429,,20,67,TTTCAGTTGCCCAATGAACT,, 4318,AI092429,,20,61,TTGCCCAATGAACTGACTTG,, 4319,AI092429,,20,55,AATGAACTGACTTGTACCCC,, 4320,AI092429,,20,49,CTGACTTGTACCCCTGCACT, 4321,AI092429,,20,43,TGTACCCCTGCACTACCAGG,, 4322,A1092429,,20,37,CCTGCACTACCAGGTTCTAG,, 4323,A1092429,,20,31,CTACCAGGTTCTAGCAAGAC,, 4324,A1092429,,20,25,GGTTCTAGCAAGACGAGAAG,, 4325,AI092429,,20,19,AGCAAGACGAGAAGAAAAA,, 4326,AI092429,,20,13,ACGAGAAGAAAAAAAAAAA,, 4327,AI092429,,20,7,AGAAAAAAAAAAAAAAAAAA,, 4328,AI092429,,20,1,AAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI096522) TTTTTTTTTTTTTTTTTTTTTACAGGCACTCAGCTTTTATGGGGCCCAGCAGGTAGGAAACCAGCAAATTCCAAACCCCCCATTA TTTCCCTTGGGGCATAGCTCCACTGGTGGTTACTCTAATGTTTCAAAGGCCTCCACTGTATTCATTAAGCAGGGATCAGATGCCACTA TCCAAACCCCTCATTCCCTTGACCCCGAACCCAAAAGAGC 75 (SEQ ID NO: 4329)

4330,AI096522,,20,198,GCTCTTTTGGGTTCGGGGTC,, 4331,A1096522,,20,192,TTGGGTTCGGGGTCAAGGGA,, 4332,AI096522,,20,186,TCGGGGTCAAGGGAATGAGG,, 4333,AI096522,,20,180,TCAAGGGAATGAGGGGTTTG,, 4334,A1096522,,20,174,GAATGAGGGGTTTGGATAGT,, 4335,AI096522,,20,168,GGGGTTTGGATAGTGGCATC,, 4336,AI096522,,20,162,TGGATAGTGGCATCTGATCC,, 4337,AI096522,,20,156,GTGGCATCTGATCCCTGCTT,, 4338,AI096522,,20,150,TCTGATCCCTGCTTAATGAA,, 4339,AI096522,,20,144,CCCTGCTTAATGAATACAGT, 4340,AI096522,,20,138,TTAATGAATACAGTGGAGGC,, 4341,AI096522,,20,132,AATACAGTGGAGGCCTTTGA,, 4342,AI096522,,20,126,GTGGAGGCCTTTGAAACATT,, 4343,AI096522,,20,120,GCCTTTGAAACATTAGAGTA,, 15 4344,AI096522,,20,114,GAAACATTAGAGTAACCACC,, 4345,AI096522,,20,108,TTAGAGTAACCACCAGTGGA,, 4346,AI096522,,20,102,TAACCACCAGTGGAGCTATG., 4347,A1096522,,20,96,CCAGTGGAGCTATGCCCCAA,, 4348,AI096522,,20,90,GAGCTATGCCCCAAGGGAAA,, 4349,AI096522,,20,84,TGCCCCAAGGGAAATAATGG,, 4350,AI096522,,20,78,AAGGGAAATAATGGGGGGTT,, 4351,AI096522,,20,72,AATAATGGGGGGTTTGGAAT,, 4352,AI096522,,20,66,GGGGGGTTTGGAATTTGCTG,, 4353,AI096522,,20,60,TITGGAATTTGCTGGTTTCC,, 25 4354,A1096522,,20,54,ATTTGCTGGTTTCCTACCTG,, 4355,AI096522,,20,48,TGGTTTCCTACCTGCTGGGC,, 4356,AI096522,,20,42,CCTACCTGCTGGGCCCCATA,, 4357,AI096522,,20,36,TGCTGGGCCCCATAAAAGCT,, 4358,AI096522,,20,30,GCCCCATAAAAGCTGAGTGC,, 4359,AI096522,,20,24,TAAAAGCTGAGTGCCTGTAA,, 4360,Al096522,,20,18,CTGAGTGCCTGTAAAAAAAA,, 4361,AI096522,,20,12,GCCTGTAAAAAAAAAAAAAA,, 4362,AI096522,,20,6,AAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI122807) TTTTTTTTTTTTTTTTTTTAAAACAACCAAGGTTTACTTCTCACTTTACATGTCCTTCATGATGTGACTGGGGACTCTGTTCCGCA TCATCTTCCCTCCAATACCAAGGCTGATCGTGCATATGCTCTCGGAACACTGATGCTTGCCATGGCAAAGAGAAAAAAGAGTTCTGG AAGGTCTTGCATCAACAATTAAATGCTATGCTCACACTTAATTCGGAGAACATGTCATGTAGTTCAACCCCATCACAGGGAGGCCAG GGCATACAATCCTCCTATATTCCTTAAACAGGCGGAAAGAGGAAAAGAAACCAGCGAATGAGTTTGAGAAGCTGCCCTCTGAGAAA 40 **GCGAACTCTTAAAAATG** (SEQ ID NO: 4363) 4364,A1122807,,20,348,CATTTTTAAGAGTTCGCTTT,, 4365,A1122807,,20,342,TAAGAGTTCGCTTTCTCAGA,, 4366,AI122807,,20,336,TTCGCTTTCTCAGAGGGCAG,, 4367,AI122807,,20,330,TTCTCAGAGGGCAGCTTCTC,, 4368,AI122807,,20,324,GAGGGCAGCTTCTCAAACTC,, 4369,AI122807,,20,318,AGCTTCTCAAACTCATTCGC,, 4370,A1122807,,20,312,TCAAACTCATTCGCTGGTTT,, 50 4371,A1122807,,20,306,TCATTCGCTGGTTTCTTTTC,, 4372,AI122807,,20,300,GCTGGTTTCTTTTCCTCTTT, 4373,A1122807,,20,294,TTCTTTTCCTCTTTCCGCCT,, 4374,AI122807,,20,288,TCCTCTTTCCGCCTGTTTAA,, 4375,AI122807,,20,282,TTCCGCCTGTTTAAGGAATA,, 4376,AI122807,,20,276,CTGTTTAAGGAATATAGGAG,, 4377,AI122807,,20,270,AAGGAATATAGGAGGATTGT,, 4378,AI122807,,20,264,TATAGGAGGATTGTATGCCC,, 4379,AI122807,,20,258,AGGATTGTATGCCCTGGCCT,, 4380,AI122807,,20,252,GTATGCCCTGGCCTCCCTGT,, 4381,AI122807,,20,246,CCTGGCCTCCCTGTGATGGG,, 4382,AI122807,,20,240,CTCCCTGTGATGGGGTTGAA,, 4383,A1122807,,20,234,GTGATGGGGTTGAACTACAT, 4384,AI122807,,20,228,GGGTTGAACTACATGACATG,, 4385,A1122807,,20,222,AACTACATGACATGTTCTCC,, 65 4386,AI122807,,20,216,ATGACATGTTCTCCGAATTA,, 4387,AI122807,,20,210,TGTTCTCCGAATTAAGTGTG,, 4388,A1122807,,20,204,CCGAATTAAGTGTGAGCATA,, 4389,A1122807,,20,198,TAAGTGTGAGCATAGCATTT,, 4390,A1122807,,20,192,TGAGCATAGCATTTAATTGT,, 70 4391,AI122807,,20,186,TAGCATTTAATTGTTGATGC,, 4392,A1122807,,20,180,TTAATTGTTGATGCAAGACC,,

4393,AI122807,,20,174,GTTGATGCAAGACCTTCCAG,, 4394,AI122807,,20,168,GCAAGACCTTCCAGAACTCT,, 4395,AI122807,,20,162,CCTTCCAGAACTCTTTTTCT, 4396,AI122807,,20,156,AGAACTCTTTTTCTCTTTGC,

4397,AI122807,.20.150,CTTTTTCTCTTTTGCCATGGC, 4398,AI122807,,20,144,CTCTTTGCCATGGCAATCAT,, 4399,A1122807,,20,138,GCCATGGCAATCATCAGTGT,, 4400,AI122807,,20,132,GCAATCATCAGTGTTCCAGA,, 4401,A1122807,,20,126,ATCAGTGTTCCAGAGAGCAT,, 4402,AI122807,,20,120,GTTCCAGAGAGCATATGCAC, 4403,AII22807,,20,114,GAGAGCATATGCACGATCAG,, 4404,AI122807,,20,108,ATATGCACGATCAGCCTTGG,, 4405,AI122807,,20,102,ACGATCAGCCTTGGTATTGG,, 4406,AI122807,,20,96,AGCCTTGGTATTGGAGGGAA,, 10 4407,AII22807,,20,90,GGTATTGGAGGGAAGATGAT,, 4408,A1122807,,20,84,GGAGGGAAGATGATGCGGAA,, 4409,AI122807,,20,78,AAGATGATGCGGAACAGAGT,, 4410,AI122807,,20,72,ATGCGGAACAGAGTCCCAGT,, 4411,AI122807,,20,66,AACAGAGTCCCAGTCACATC,, 4412,AI122807,,20,60,GTCCCAGTCACATCATGAAG,, 4413,A1122807,,20,54,GTCACATCATGAAGGACATG,, 4414,A1122807,,20,48,TCATGAAGGACATGTAAAGT,, 4415,A1122807,,20,42,AGGACATGTAAAGTGAGAAG,, 4416,AI122807,,20,36,TGTAAAGTGAGAAGTAAACC,, 4417,AI122807,,20,30,GTGAGAAGTAAACCTTGGTT,, 4418,A1122807,,20,24,AGTAAACCTTGGTTGTTTTA,, 4419,A1122807,,20,18,CCTTGGTTGTTTTAAAAAAA,, 4420,AI122807,,20,12,TTGTTTTAAAAAAAAAAAAAA,, 25 4421,A1122807,,20,6,TAAAAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI041212) TTTTTTTTTTTTTTTTTTTTTTTAGATGAGAGAGACAGCTTTATTAACTGAAATCCATTTATATTTGAAGCTCATATATGCTACAACTTA GTCTTCTCAATGTTAAAAATAATTTTTTTTCTACCATGTAAAACCTAGCCTTCTCTTTGACTTTTGAAAAATTATATTTTGGTCCCTGAGA GTTATAAAAAGGGAGCTGGACTCCAGTAACATCATITGCCTGATAGCTGGGTCTTAATCCACCTTTGTCCACAAACACTGGTCCACG 30 GCATAGTCCTGAAATTCTTTCTCCTTT (SEQ ID NO: 4422) 4423,AI041212,,20,362,AAAGGAGAAAGAATTTCAGG,, 35 4424,AI041212,,20,356,GAAAGAATTTCAGGACTATG,, 4425,AI041212,,20,350,ATTTCAGGACTATGCCAGAG,, 4426,AI041212,,20,344,GGACTATGCCAGAGAGGTAA,, 4427,AI041212,,20,338,TGCCAGAGAGGTAATTGAAC,, 4428,AI041212,,20,332,AGAGGTAATTGAACTTGAAT,, 40 4429,AI041212,,20,326,AATTGAACTTGAATCGGAAA,, 4430,AI041212,,20,320,ACTTGAATCGGAAACACCAA,, 4431,AI041212,,20,314,ATCGGAAACACCAAATAAAT,, 4432,AI041212,,20,308,AACACCAAATAAATATATTT,, 4433,AI041212,,20,302,AAATAAATATATTTACCCTC,, 4434,AI041212,,20,296,ATATATTTACCCTCTTGTAA,, 4435,AI041212,,20,290,TTACCCTCTTGTAAAAGCTG,, 4436,AI041212,,20,284,TCTTGTAAAAGCTGTACAGG,, 4437,AI041212,,20,278,AAAAGCTGTACAGGAAGGAC,, 4438,AI041212,,20,272,TGTACAGGAAGGACCTGGAG,, 4439,AI041212,,20,266,GGAAGGACCTGGAGGTGGCC,, 4440,AI041212,,20,260,ACCTGGAGGTGGCCGTGGAC,, 4441,AI041212,,20,254,AGGTGGCCGTGGACCAGTGT, 4442,AI041212,,20,248,CCGTGGACCAGTGTTTGTGG,, 4443,AI041212,,20,242,ACCAGTGTTTGTGGACAAAG,, 55 4444,AI041212,,20,236,GTTTGTGGACAAAGGTGGAT,, 4445,AI041212,,20,230,GGACAAAGGTGGATTAAGAC,, 4446,AI041212,,20,224,AGGTGGATTAAGACCCAGCT,, 4447,AI041212,,20,218,ATTAAGACCCAGCTATCAGG,, 4448,AI041212,,20,212,ACCCAGCTATCAGGCAAATG,, 60 4449,AI041212,,20,206,CTATCAGGCAAATGATGTTA,, 4450,AI041212,,20,200,GGCAAATGATGTTACTGGAG,, 4451,AI041212,,20,194,TGATGTTACTGGAGTCCAGC,, 4452,AI041212,,20,188,TACTGGAGTCCAGCTCCCTT,, 4453,AI041212,,20,182,AGTCCAGCTCCCTTTTTATA,, 65 4454,AI041212,,20,176,GCTCCCTTTTTATAACTCTC,, 4455,AI041212,,20,170,TTTTTATAACTCTCAGGGAC,, 4456,AI041212,,20,164,TAACTCTCAGGGACCAAAAT, 4457,AI041212,,20,158,TCAGGGACCAAAATATAATT,, 4458,AI041212,,20,152,ACCAAAATATAATTTTCAAA,, 4459,AI041212,,20,146,ATATAATTTTCAAAAGTCAA,, 4460,AI041212,,20,140,TTTTCAAAAGTCAAAGAGAA,,

4461,AI041212,,20,134,AAAGTCAAAGAGAAGGCTAG,, 4462,AI041212,,20,128,AAAGAGAAGGCTAGGTTTTA,, 4463,AI041212,,20,122,AAGGCTAGGTTTTACATGGT,

4464,AI041212,,20,116,AGGTTTTACATGGTAGAAAA,,

75

4465,AI041212,,20,110,TACATGGTAGAAAAAAATTA,, 4466,AI041212,,20,104,GTAGAAAAAAATTATTTTTA,, 4467,AI041212,,20,98,AAAAATTATTTTTAACATTG,, 4468,A1041212,,20,92,TATTTTTAACATTGAGAAGA,, 4469,A1041212,,20,86,TAACATTGAGAAGACTAAGT,, 4470,AI041212,,20,80,TGAGAAGACTAAGTTGTAGC,, 4471,AI041212,,20,74,GACTAAGTTGTAGCATATAT,, 4472,AI041212,,20,68,GTTGTAGCATATATGAGCTT,, 4473,AI041212,,20,62,GCATATATGAGCTTCAAATA,, 10 4474,AI041212,,20,56,ATGAGCTTCAAATATAAATG,, 4475,AI041212,,20,50,TTCAAATATAAATGGATTTC,, 4476,A1041212,,20,44,TATAAATGGATTTCAGTTAA,, 4477,AI041212,,20,38,TGGATTTCAGTTAATAAAGC,, 4478,A1041212,,20,32,TCAGTTAATAAAGCTGTTCT,, 4479,AI041212,,20,26,AATAAAGCTGTTCTTCATCT,, 4480,AI041212,,20,20,GCTGTTCTTCATCTAAAAAA,, 4481,AI041212,,20,14,CTTCATCTAAAAAAAAAAAAA,, 4482,A1041212,,20,8,CTAAAAAAAAAAAAAAAAAAAA,, 4483,AI041212,,20,2,AAAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI125651) ATGACGACTTTGGACATTGCTAGGTAATTGTCAAAATTGTGCATTTGAACAGCAGCAAAATATTCAAAGCTGGTGTGCCCTCGCTGA CACGAAATGAATTGTCATTTTCTGAACATTCACCAAAGCCTGCCAGGCGCTAGGCCTAGGTTCAGCAGCACAATAGTGAAGCCC CCATTCAAGCGGGCTTCGTTTCACCAGCGTACGTCACACGTCCGTGGAGCAGGCGAGACCAGAGGAGCTGGGAAAGCCAGGGCTGAG 25 CCTTGTGCTTTTGCCCTTTTAAGGGAGGA (SEQ ID NO: 4484) 4485,AI125651,,20,358,TCCTCCCTTAAAAGGGCAAA,, 4486,A1125651,,20,352,CTTAAAAGGGCAAAAGCACA,, 30 4487,A1125651,,20,346,AGGGCAAAAGCACAAGGCTC,, 4488,AI125651,,20,340,AAAGCACAAGGCTCAGCCCT,, 4489,A1125651,,20,334,CAAGGCTCAGCCCTGGCTTT,, 4490,A1125651,,20,328,TCAGCCCTGGCTTTCCCAGC,, 4491,AI125651,,20,322,CTGGCTTTCCCAGCTCCTCT,, 4492,A1125651,,20,316,TTCCCAGCTCCTCTGGTCTC,, 4493,A1125651,,20,310,GCTCCTCTGGTCTCGCTGCT,, 4494,AI125651,,20,304,CTGGTCTCGCTGCTCCACGG,, 4495,A1125651,,20,298,TCGCTGCTCCACGGACGTGT,, 4496,AI125651,,20,292,CTCCACGGACGTGTGACGTA,, 4497,AI125651,,20,286,GGACGTGTGACGTACGCTGG,, 4498,A1125651,,20,280,GTGACGTACGCTGGTGAAAC,, 4499,A1125651,,20,274,TACGCTGGTGAAACGAAGCC,, 4500,AI125651,,20,268,GGTGAAACGAAGCCCGCTTG,, 4501,AI125651,,20,262,ACGAAGCCCGCTTGAATGGG,, 4502,AI125651,,20,256,CCCGCTTGAATGGGGGCTTC,, 4503,AI125651,,20,250,TGAATGGGGGCTTCACTATT,, 4504,AI125651,,20,244,GGGGCTTCACTATTGTGTGC,, 4505,A1125651,,20,238,TCACTATTGTGTGCTGCTGA,, 4506,AI125651,,20,232,TTGTGTGCTGCTGAACCTAG,, 50 4507,A1125651,,20,226,GCTGCTGAACCTAGGCCTAG, 4508,AI125651,,20,220,GAACCTAGGCCTAGCGCCTG,, 4509,A1125651,,20,214,AGGCCTAGCGCCTGGCAGGC,, 4510,A1125651,,20,208,AGCGCCTGGCAGGCTTTGGT, 4511,A1125651,,20,202,TGGCAGGCTTTGGTGAATGT, 55 4512,A1125651,,20,196,GCTTTGGTGAATGTTCAGAA,, 4513,A1125651,,20,190,GTGAATGTTCAGAAAATGAC,, 4514,A1125651,,20,184,GTTCAGAAAATGACAATTCA,, 4515,AI125651,,20,178,AAAATGACAATTCATTTCGT,, 4516,A1125651,,20,172,ACAATTCATTTCGTGTCAGC,, 4517,A1125651,,20,166,CATTTCGTGTCAGCGAGGGC,, 4518,AI125651,,20,160,GTGTCAGCGAGGGCACACCA,, 4519,A1125651,,20,154,GCGAGGGCACACCAGCTTTG,, 4520,A1125651,,20,148,GCACACCAGCTTTGAATATT,, 4521,A1125651,,20,142,CAGCTTTGAATATTTTGCTG,, 4522,A1125651,,20,136,TGAATATTTTGCTGCTGTTC,, 4523,A1125651,,20,130,TTTTGCTGCTGTTCAAATGC,, 4524,A1125651,,20,124,TGCTGTTCAAATGCACAATT,, 4525,A1125651,,20,118,TCAAATGCACAATTTTGACA,, 4526,A1125651,,20,112,GCACAATTTTGACAATTACC,, 4527,A1125651,,20,106,TTTTGACAATTACCTAGCAA,, 70 4528,AII25651,,20,100,CAATTACCTAGCAATGTCCA,, 4529,A1125651,,20,94,CCTAGCAATGTCCAAAGTCG,,

4530,AI125651,,20,88,AATGTCCAAAGTCGTCATAA,,, 4531,AI125651,,20,82,CAAAGTCGTCATAATTGTTA,,

4532,AII25651,,20,76,CGTCATAATTGTTAGTGTCT.,

PCT/US02/13135

WO 02/085308 4533,A1125651,,20,70,AATTGTTAGTGTCTTGCACG,, 4534,A1125651,,20,64,TAGTGTCTTGCACGTGATGT, 4535,AI125651,,20,58,CTTGCACGTGATGTTCCTTA,, 4536,Al125651,,20,52,CGTGATGTTCCTTATAACCA,, 4537,A1125651,,20,46,GTTCCTTATAACCATGTAAT,, 4538,A1125651,,20,40,TATAACCATGTAATAAATAC,, 4539,AI125651,,20,34,CATGTAATAAATACAGTGTG,, 4540,A1125651,,20,28,ATAAATACAGTGTGAAGTCT,, 4541,A1125651,,20,22,ACAGTGTGAAGTCTCAAAAA,, 4542,A1125651,,20,16,TGAAGTCTCAAAAAAAAAAAA,, 4543,AI125651,,20,10,CTCAAAAAAAAAAAAAAAAAA,, 4544,A1125651,,20,4,AAAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI001174) TCATGGGTCACTGAGGCTTTTTATTTTGAGCACAAAACCACCGGGGATCTAGCCTGTGGCACCCCGGAGATGACACGAGGCTCACAT GACTCTAGACACTTGGTGGAAAGTGAGGCGAGAAAAACAATGACTTGGGCCAATTACACGACTGCAAAGCTAGAGCTGCCAACAG GGCTCCAGGGAGCTTGGCTTCTGTAGAAGTTCTGTGACGTTCAGTTTCTTGCTAACCAGGGCAGGCGCAATAGTTTTATTGATGTGCT CAACAGCCTTTGAGACACCCTTCCCCATATATGCGAGTCTTATCATTGTCCCGGAGCTCTAGGGCCTCATAGATACCAGTTTGAAGC ACCACTGGGCACAGCAGCTCTGAAGAGCCTTTTCAGGTGAACAGATCAACCTCAACAGTGGGATTCCCGCGAGAGTCCAAGATCT CCCGGCATGGATCTCGAGAATAGACATGGTGAACTTTCAGCCACTGGGTCTCGTCGCCTAGAGAGGAAGCGGAGTGTGCTTCAGAC 20 (SEQ ID NO: 4545) 4546,AI001174,,20,502,GTGTCTGAAGCACACTCCGC,, 4547,A1001174,,20,496,GAAGCACACTCCGCTTCCTC,, 4548,A1001174,,20,490,CACTCCGCTTCCTCTAGG,, 25 4549,A1001174,,20,484,GCTTCCTCTAGGCGACGA, 4550,A1001174,,20,478,TCTCTAGGCGACGAGACCCA,, 4551,AI001174,,20,472,GGCGACGAGACCCAGTGGCT,, 4552,AI001174,,20,466,GAGACCCAGTGGCTGAAAGT,, 30 4553,AI001174,,20,460,CAGTGGCTGAAAGTTCACCA,, 4554,A1001174,,20,454,CTGAAAGTTCACCATGTCTA,, 4555,AI001174,,20,448,GTTCACCATGTCTATTCTCG,, 4556,A1001174,,20,442,CATGTCTATTCTCGAGATCC,, 4557,A1001174,,20,436,TATTCTCGAGATCCATGCCG, 4558,AI001174,,20,430,CGAGATCCATGCCGGGAGAT,, 4559,AI001174,,20,424,CCATGCCGGGAGATCTTGGA,, 4560,AI001174,,20,418,CGGGAGATCTTGGACTCTCG, 4561,AI001174,,20,412,ATCTTGGACTCTCGCGGGAA,, 4562,AI001174,,20,406,GACTCTCGCGGGAATCCCAC,, 4563,AI001174,,20,400,CGCGGGAATCCCACTGTTGA,, 4564,AI001174,,20,394,AATCCCACTGTTGAGGTTGA,, 4565,A1001174,,20,388,ACTGTTGAGGTTGATCTGTT,, 4566,AI001174,,20,382,GAGGTTGATCTGTTCACCTG,, 4567,A1001174,,20,376,GATCTGTTCACCTGAAAAGG,, 4568,AI001174,,20,370,TTCACCTGAAAAGGTCTCTT,, 4569,A1001174,,20,364,TGAAAAGGTCTCTTCAGAGC,,

4570,A1001174,,20,358,GGTCTCTTCAGAGCTGCTGT,, 4571,AI001174,,20,352,TTCAGAGCTGCTGTGCCCAG,, 4572,AI001174,,20,346,GCTGCTGTGCCCAGTGGTGC,, 4573,AI001174,,20,340,GTGCCCAGTGGTGCTTCAAA,, 4574,AI001174,,20,334,AGTGGTGCTTCAAACTGGTA,, 4575,AI001174,,20,328,GCTTCAAACTGGTATCTATG,, 4576,AI001174,,20,322,AACTGGTATCTATGAGGCCC,, 4577,AI001174,,20,316,TATCTATGAGGCCCTAGAGC,,

4578,AI001174,,20,310,TGAGGCCCTAGAGCTCCGGG,, 4579,AI001174,,20,304,CCTAGAGCTCCGGGACAATG,, 4580,AI001174,,20,298,GCTCCGGGACAATGATAAGA,, 4581,AI001174,,20,292,GGACAATGATAAGACTCGCA,, 4582,A1001174,,20,286,TGATAAGACTCGCATATATG,, 4583,A1001174,,20,280,GACTCGCATATATGGGGAAG,, 4584,AI001174,,20,274,CATATATGGGGAAGGGTGTC,, 4585,AI001174,,20,268,TGGGGAAGGGTGTCTCAAAG,, 4586,A1001174,,20,262,AGGGTGTCTCAAAGGCTGTT,,

55

4593,AI001174,,20,220,CGCCTGCCCTGGTTAGCAAG,, 4594,AI001174,,20,214,CCCTGGTTAGCAAGAAACTG,, 4595,AI001174,,20,208,TTAGCAAGAAACTGAACGTC,, 4596,AI001174,,20,202,AGAAACTGAACGTCACAGAA,, 4597,AI001174,,20,196,TGAACGTCACAGAACTTCTA,, 75 4598,AI001174,,20,190,TCACAGAACTTCTACAGAAG,,

```
4599,AI001174,,20,184,AACTTCTACAGAAGCCAAGC,,
      4600,A1001174,,20,178,TACAGAAGCCAAGCTCCCTG,,
      4601,AI001174,,20,172,AGCCAAGCTCCCTGGAGCCC,,
      4602,AI001174,,20,166,GCTCCCTGGAGCCCTGTTGG,,
      4603,AI001174,,20,160,TGGAGCCCTGTTGGCAGCTC,,
      4604,AI001174,,20,154,CCTGTTGGCAGCTCTAGCTT,,
      4605,AI001174,,20,148,GGCAGCTCTAGCTTTGCAGT,,
      4606,AI001174,,20,142,TCTAGCTTTGCAGTCGTGTA,,
      4607,AI001174,,20,136,TTTGCAGTCGTGTAATTGGC,,
      4608,AI001174,,20,130,GTCGTGTAATTGGCCCAAGT,,
10
      4609,AI001174,,20,124,TAATTGGCCCAAGTCATTGT,,
      4610,AI001174,,20,118,GCCCAAGTCATTGTTTTCT,,
      4611,AI001174,,20,112,GTCATTGTTTTTCTCGCCTC,,
      4612,AI001174,,20,106,GTTTTTCTCGCCTCACTTTC,,
15
      4613,AI001174,,20,100,CTCGCCTCACTTTCCACCAA,,
      4614,AI001174,,20,94,TCACTTTCCACCAAGTGTCT,,
      4615,AI001174,,20,88,TCCACCAAGTGTCTAGAGTC,,
      4616,AI001174,,20,82,AAGTGTCTAGAGTCATGTGA,,
      4617,AI001174,,20,76,CTAGAGTCATGTGAGCCTCG,,
      4618,AI001174,,20,70,TCATGTGAGCCTCGTGTCAT,,
20
      4619,A1001174,,20,64,GAGCCTCGTGTCATCTCCGG,,
      4620,AI001174,,20,58,CGTGTCATCTCCGGGGTGCC,,
      4621,AI001174,,20,52,ATCTCCGGGGTGCCACAGGC,,
      4622,AI001174,,20,46,GGGGTGCCACAGGCTAGATC,,
25
      4623,AI001174,,20,40,CCACAGGCTAGATCCCCGGT,
      4624,AI001174,,20,34,GCTAGATCCCCGGTGGTTTT,,
      4625,AI001174,,20,28,TCCCCGGTGGTTTTTGTGCTC,,
      4626,AI001174,,20,22,GTGGTTTTGTGCTCAAAATA,,
      4627,AI001174,,20,16,TTGTGCTCAAAATAAAAAGC,,
      4628,AI001174,,20,10,TCAAAATAAAAAGCCTCAGT,,
30
      4629,AI001174,,20,4,TAAAAAGCCTCAGTGACCCA,,
      (GENBANK ACCESSION NO. AI024215)
      TTTTTTTTTTTTTTTTTTTTTTTTTGACCAGTTGATGAAGTGGTGGCTTTAATTTGCGATTCTTGTGCAAACATTTGATAATGGGAATTG
      GGCCAGCGTCAAATTTGAAGATGAAGTCTGACTGAAGGTCATCGTTTGGAGTTGGGGTGGGGTGAAGAGTAGACAAACTCGGCCAG
35
      AGTGATCGGAGTTGGCGGCTGTCTGGGGGAGTTGGGTCAGGAAGCCCCTTCTTTCGCCACCGATGGGGCACGTC
      (SEO ID NO: 4630)
      4631,AI024215,,20,318,GACGTGCCCCATCGGTGGCG,,
40
      4632,AI024215,,20,312,CCCCATCGGTGGCGAAAGAA,,
      4633,AI024215,,20,306,CGGTGGCGAAAGAAGGGGGCT,,
      4634,AI024215,,20,300,CGAAAGAAGGGGCTTCCTGA,,
4635,AI024215,,20,294,AAGGGGCTTCCTGACCCAAC,,
      4636,AI024215,,20,288,CTTCCTGACCCAACTCCCCC,,
45
      4637,A1024215,,20,282,GACCCAACTCCCCCAGACAG,,
      4638,AI024215,,20,276,ACTCCCCAGACAGCCGCCA,,
      4639,AI024215,,20,270,CCAGACAGCCGCCAACTCCG,
4640,AI024215,,20,264,AGCCGCCAACTCCGATCACT,
      4641,AI024215,,20,258,CAACTCCGATCACTCTGGCC,,
      4642,AI024215,,20,252,CGATCACTCTGGCCGAGTTT,,
4643,AI024215,,20,246,CTCTGGCCGAGTTTGTCTAC,,
      4644,AI024215,,20,240,CCGAGTTTGTCTACTCTTCA,,
      4645,AI024215,,20,234,TTGTCTACTCTTCACCCCAC,,
      4646,AI024215,,20,228,ACTCTTCACCCCACCCCAAC,
4647,AI024215,,20,222,CACCCCACCCCAACTCCAAA,
55
      4648,AI024215,,20,216,ACCCCAACTCCAAACGATGA,,
      4649,AI024215,,20,210,ACTCCAAACGATGACCTTCA.,
      4650,AI024215,,20,204,AACGATGACCTTCAGTCAGA,,
      4651,AI024215,,20,198,GACCTTCAGTCAGACTTCAT,,
4652,AI024215,,20,192,CAGTCAGACTTCATCTTCAA,,
60
      4653,AI024215,,20,186,GACTTCATCTTCAAATTTGA,,
      4654,AI024215,,20,180,ATCTTCAAATTTGACGCTGG,,
      4655,AI024215,,20,174,AAATTTGACGCTGGCCCCTA,,
      4656,AI024215,,20,168,GACGCTGGCCCCTAGCACCA,,
65
      4657,AI024215,,20,162,GGCCCCTAGCACCATTCTCT,,
      4658,AI024215,,20,156,TAGCACCATTCTCTATACAG,,
      4659,AI024215,,20,150,CATTCTCTATACAGGAAATA,,
4660,AI024215,,20,144,CTATACAGGAAATAAGGTGT,,
      4661,AI024215,,20,138,AGGAAATAAGGTGTTGTTCA,,
      4662,AI024215,,20,132,TAAGGTGTTGTTCAATGAAT,,
4663,AI024215,,20,126,GTTGTTCAATGAATGGAATT,,
70
      4664,AI024215,,20,120,CAATGAATGGAATTTCAGTG,,
      4665,AI024215,,20,114,ATGGAATTTCAGTGTCCACG,,
      4666,AI024215,,20,108,TTTCAGTGTCCACGAGAAAG,,
```

4667,AI024215,,20,102,TGTCCACGAGAAAGCCCAAT,,

4668,AI024215,,20,96,CGAGAAAGCCCAATACCTAC,, 4669,AI024215,,20,90,AGCCCAATACCTACACATCC,, 4670,AI024215,,20,84,ATACCTACACATCCAATTCC,, 4671,AI024215,,20,78,ACACATCCAATTCCCATTAT,, 4672,AI024215,,20,72,CCAATTCCCATTATCAAATG,, 4673,AI024215,,20,66,CCCATTATCAAATGTTTGCA,, 4674,AI024215,,20,60,ATCAAATGTTTGCACAAGAA,, 4675,AI024215,,20,54,TGTTTGCACAAGAATCGCAA,, 4676,AI024215,,20,48,CACAAGAATCGCAAATTAAA,, 10 4677,AI024215,,20,42,AATCGCAAATTAAAGCCACC,, 4678,AI024215,,20,36,AAATTAAAGCCACCACTTCA,, 4679,A1024215,,20,30,AAGCCACCACTTCATCAACT,, 4680,AI024215,,20,24,CCACTTCATCAACTGGTCAA,, 4681,AI024215,,20,18,CATCAACTGGTCAAAAAAAA,, 4682,A1024215,,20,12,CTGGTCAAAAAAAAAAAAAA,, 15 4683,AI024215,,20,6,AAAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AI034360) TGTCTCAGGCTAGATTTGGTATTGTATAAGTAAGCTTTGTGTTAGAGGATGATAAGAATAAAATTTTAAAATTTTAATTGAACAATTCC 20 TCATGCAACAAAATATAAAATCT (SEQ ID NO: 4684) 4685,A1034360,,20,267,AGATTTTATATTTTTGTTGC,, 25 4686,AI034360,,20,261,TATATTTTTGTTGCATGATG,, 4687,A1034360,,20,255,TTTGTTGCATGATGGTAAAC,, 4688,AI034360,,20,249,GCATGATGGTAAACAGCTGT,, 4689,A1034360,,20,243,TGGTAAACAGCTGTAACCAC, 4690,A1034360,,20,237,ACAGCTGTAACCACCAGCTT, 30 4691,AI034360,,20,231,GTAACCACCAGCTTGGCCTT,, 4692,A1034360,,20,225,ACCAGCTTGGCCTTTTTGGC,, 4693,A1034360,,20,219,TTGGCCTTTTTGGCAGCTGG, 4694,A1034360,,20,213,TTTTTGGCAGCTGGCTTTAT,, 4695,A1034360,,20,207,GCAGCTGGCTTTATTTAGCA,, 4696,AI034360,,20,201,GGCTTTATTTAGCATTTTAA,, 4697,AI034360,,20,195,ATTTAGCATTTTAAGCTTTA,, 4698,AI034360,,20,189,CATTTTAAGCTTTAAGTTTG,, 4699,AI034360,,20,183,AAGCTTTAAGTTTGCCTCTG,, 4700,AI034360,,20,177,TAAGTTTGCCTCTGGTGCCT,, 4701,AI034360,,20,171,TGCCTCTGGTGCCTGGAATT,, 4702,AI034360,,20,165,TGGTGCCTGGAATTGTTCAA,, 4703,AI034360,,20,159,CTGGAATTGTTCAATTAAAA,, 4704,AI034360,,20,153,TTGTTCAATTAAAATTTTAA,, 4705,AI034360,,20,147,AATTAAAATTTTAAATTTAT,, 45 4706,A1034360,,20,141,AATTTTAAATTTATTCTTAT,, 4707,AI034360,,20,135,AAATTTATTCTTATCATCCT,, 4708,AI034360,,20,129,ATTCTTATCATCCTCTAACA,, 4709,A1034360,,20,123,ATCATCCTCTAACACAAAGC,, 4710,A1034360,,20,117,CTCTAACACAAAGCTTACTT,, 50 4711,AI034360,,20,111,CACAAAGCTTACTTATACAA,, 4712,AI034360,,20,105,GCTTACTTATACAATACCAA,, 4713,AI034360,,20,99,TTATACAATACCAAATCTAG,, 4714,AI034360,,20,93,AATACCAAATCTAGCCTGAG,, 4715,AI034360,,20,87,AAATCTAGCCTGAGACACTT,, 55 4716,AI034360,,20,81,AGCCTGAGACACTTGTTCTT,, 4717,AI034360,,20,75,AGACACTTGTTCTTGAATCG,, 4718,AI034360,,20,69,TTGTTCTTGAATCGATTCTT,, 4719,A1034360,,20,63,TTGAATCGATTCTTTTTAA,, 4720,AI034360,,20,57,CGATTCTTTTTTAAATAATA,, 4721,AI034360,,20,51,TTTTTTAAATAATAAGTTCA,, 4722,AI034360,,20,45,AAATAATAAGTTCAATATGA,, 4723,AI034360,,20,39,TAAGTTCAATATGAAATAAA,, 4724,AI034360,,20,33,CAATATGAAATAAATCTATT,, 4725,AI034360,,20,27,GAAATAAATCTATTCTGCTA,, 4726,AI034360,,20,21,AATCTATTCTGCTACAACAA,, 4727,AI034360,,20,15,TTCTGCTACAACAACCAAAA,, 4728,AI034360,,20,9,TACAACAACCAAAAAAAAAA,, 4729,AI034360,,20,3,AACCAAAAAAAAAAAAAAAAA., (GENBANK ACCESSION NO. AA465687) TTTTTTTTTTTTTTTTTTAAAATTTCAGATGTTTTTTATTCAAAAGGTTCTCAAAAGAAATAAAACAGAAAAAGCTAACAATCTGA TAAGTTACCACTGGCAAGTCTGTGGCACTAGTAAAACAAAAATAAAAAATTAACTCTCTTGATCATATAGATATCTCTATGAAAATC

75 (SEQ ID NO: 4730)

TTTTTTTTTATGT

4731,AA465687,,20,348,ACATAAAAAAAAAAAAAATCA,, 4732,AA465687,,20,342,AAAAAAAAAAAATCAGTTAAA,, 4733,AA465687,,20,336,AAAAATCAGTTAAACATCAC,, 4734,AA465687,,20,330,CAGTTAAACATCACATAGTA,, 4735,AA465687,,20,324,AACATCACATAGTAGACAGC,, 4736,AA465687,,20,318,ACATAGTAGACAGCCATTAA,, 4737,AA465687,,20,312,TAGACAGCCATTAAATTATA,, 4738,AA465687,,20,306,GCCATTAAATTATAAAAAAA,, 4739,AA465687,,20,300,AAATTATAAAAAAAATTAATT,, 4740,AA465687,,20,294,TAAAAAAATTAATTTATGAA,, 4741,AA465687,,20,288,AATTAATTTATGAAGAAAGA,, 4742,AA465687,,20,282,TTTATGAAGAAGACCTTTT,, 4743,AA465687,,20,276,AAGAAAGACCTTTTGTACAG,, 4744,AA465687,,20,270,GACCTTTTGTACAGATTGAA,, 4745,AA465687,,20,264,TTGTACAGATTGAAAAAAA,, 4746,AA465687,,20,258,AGATTGAAAAAAAAAAGATTT,, 4747,AA465687,,20,252,AAAAAAAAAAAGATTTTCATAG,, 4748,AA465687,,20,246,AAAGATTTTCATAGAGATAT,, 4749,AA465687,,20,240,TTTCATAGAGATATCTATAT,, 4750,AA465687,,20,234,AGAGATATCTATATGATCAA,, 4751,AA465687,,20,228,ATCTATATGATCAAGAGAGT,, 4752,AA465687,,20,222,ATGATCAAGAGAGTTAATTT, 4753,AA465687,,20,216,AAGAGAGTTAATTTTTATT,, 25 4754,AA465687,,20,210,GTTAATTTTTTTTTTTTTTTT,, 4755,AA465687,,20,204,TTTTTATTTTTGTTTTACTA,, 4756,AA465687,,20,198,TTTTTGTTTTACTAGTGCCA,, 4757,AA465687,,20,192,TTTTACTAGTGCCACAGACT,, 4758,AA465687,,20,186,TAGTGCCACAGACTTGCCAG,, 4759,AA465687,,20,180,CACAGACTTGCCAGTGGTAA,, 30 4760,AA465687,,20,174,CTTGCCAGTGGTAACTTATT,, 4761,AA465687,,20,168,AGTGGTAACTTATTTGTCCG,, 4762,AA465687,,20,162,AACTTATTTGTCCGGTTCAA,, 4763,AA465687,,20,156,TTTGTCCGGTTCAAGATAAC,, 4764, AA465687,,20,150, CGGTTCAAGATAACTCTGTA,, 35 4765,AA465687,,20,144,AAGATAACTCTGTAGTTTTC,, 4766,AA465687,,20,138,ACTCTGTAGTTTTCTTTCCT,, 4767,AA465687,,20,132,TAGTTTTCTTTCCTAGGACT,, 4768,AA465687,,20,126,TCTTTCCTAGGACTTGTTGT, 4769,AA465687,,20,120,CTAGGACTTGTTGTTAAACG,, 4770,AA465687,,20,114,CTTGTTGTTAAACGCCAAAA,, 4771, AA465687, 20, 108, GTTAAACGCCAAAAGACATT, 4772,AA465687,,20,102,CGCCAAAAGACATTTTTGAA,, 4773,AA465687,,20,96,AAGACATTTTTGAACTGTAC,, 4774,AA465687,,20,90,TTTTTGAACTGTACATTTGA,, 4775,AA465687,,20,84,AACTGTACATTTGATCAGAT,, 4776,AA465687,,20,78,ACATTTGATCAGATTGTTAG., 4777,AA465687,,20,72,GATCAGATTGTTAGCTTTTC,, 4778,AA465687,,20,66,ATTGTTAGCTTTTCTGTTTT, 50 4779,AA465687,,20,60,AGCTTTTCTGTTTTATTTCT,, 4780,AA465687,,20,54,TCTGTTTTATTTCTTTTGAG,, 4781,AA465687,,20,48,TTATTTCTTTTGAGAACCTT,, 4782,AA465687,,20,42,CTTTTGAGAACCTTTGAATA,, 4783,AA465687,,20,36,AGAACCTTTGAATAAAAAC,, 4784,AA465687,,20,30,TTTGAATAAAAAACATCTGA,, 4785,AA465687,,20,24,TAAAAAACATCTGAAATTTT,, 4786,AA465687,,20,18,ACATCTGAAATTTTAAAAAA,, 4787,AA465687,,20,12,GAAATTTTAAAAAAAAAAAA,, 4788,AA465687,,20,6,TTAAAAAAAAAAAAAAAAAA,, 60 (GENBANK ACCESSION NO. A[085559) TCGAGACAGACAACCTCAAAATAAGGTCCAAATATTGGTTCCTTCAAATGGTGTCAAAAAGAATAGTATTATATGAGGAGGATAGT TGACCTACCAAAAAAACCACCACATAAGGAGAGGCCAATATAATTTGCCAGTCTGACAAGACAGTTGGTATTATAAGTGGAAGAGA (SEQ ID NO: 4789) 4790,AI085559,,20,382,CAGTATGTATGTGTGCCTGT,, 4791,A1085559,,20,376,GTATGTGTGCCTGTGTGTGT,, 70 4792,AI085559,,20,370,GTGCCTGTGTGTGTATAAAA,, 4793,AI085559,,20,364,GTGTGTGTATAAAAATAACC,, 4794,A1085559,,20,358,GTATAAAAATAACCATTGAA,, 4795,A1085559,,20,352,AAATAACCATTGAAGCTAAC,, 4796,AI085559,,20,346,CCATTGAAGCTAACTTGCTA,, 75 4797,A1085559,,20,340,AAGCTAACTTGCTAATGTAC,,

4798,AI085559,,20,334,ACTTGCTAATGTACTTAGGC,, 4799,AI085559,,20,328,TAATGTACTTAGGCAAGCCA,, 4800,AI085559,,20,322,ACTTAGGCAAGCCACTTCCC,, 4801,AI085559,,20,316,GCAAGCCACTTCCCATCTCT,, 4802,AI085559,,20,310,CACTTCCCATCTCTGGGCCT,, 4803,AI085559,,20,304,CCATCTCTGGGCCTCGTCTT,, 4804,A1085559,,20,298,CTGGGCCTCGTCTTTCCTCC,, 4805,A1085559,,20,292,CTCGTCTTTCCTCCCTCTAA,, 4806,AI085559,,20,286,TTTCCTCCCTCTAAAATCAA,, 10 4807,AI085559,,20,280,CCCTCTAAAATCAAAGAGCT,, 4808,AI085559,,20,274,AAAATCAAAGAGCTGAATTA,, 4809,AI085559,,20,268,AAAGAGCTGAATTATGTGAT,, 4810,AI085559,,20,262,CTGAATTATGTGATCCTTGA,, 4811,AI085559,,20,256,TATGTGATCCTTGAAGTCTC,, 4812,AI085559,,20,250,ATCCTTGAAGTCTCTTCCAC,, 4813,AI085559,,20,244,GAAGTCTCTTCCACTTATAA,, 4814,AI085559,,20,238,TCTTCCACTTATAATACCAA,, 4815,AI085559,,20,232,ACTTATAATACCAACTGTCT,, 4816,AI085559,,20,226,AATACCAACTGTCTTGTCAG,, 20 4817,AI085559,,20,220,AACTGTCTTGTCAGACTGGC,, 4818,AI085559,,20,214,CTTGTCAGACTGGCAAATTA,, 4819,AI085559,,20,208,AGACTGGCAAATTATATTGG,, 4820,AI085559,,20,202,GCAAATTATATTGGCCTCTC,, 4821,AI085559,,20,196,TATATTGGCCTCTCCTTATG,, 25 4822,AI085559,,20,190,GGCCTCTCCTTATGTGGTGG,, 4823,AI085559,,20,184,TCCTTATGTGGTGGTTTTTT,, 4824,AI085559,,20,178,TGTGGTGGTTTTTTTGGTAG,, 4825,AI085559,,20,172,GGTTTTTTTGGTAGGTCATA,, 4826,AI085559,,20,166,TTTGGTAGGTCATAGTTCCT,, 30 4827,AI085559,,20,160,AGGTCATAGTTCCTTATACA,, 4828,A1085559,,20,154,TAGTTCCTTATACACAGACA,, 4829,AI085559,,20,148,CTTATACACAGACACCTGCA,, 4830,AI085559,,20,142,CACAGACACCTGCATCATCG,, 4831,AI085559,,20,136,CACCTGCATCATCGAAGGTC,, 35 4832,AI085559,,20,130,CATCATCGAAGGTCTTTTTT,, 4833,AI085559,,20,124,CGAAGGTCTTTTTTTCCTAA,, 4834,AI085559,,20,118,TCTTTTTTTCCTAAAAAAA,, 4835,AI085559,,20,112,TTTCCTAAAAAAAAAAATG,, 4836,AI085559,,20,106,AAAAAAAAAAAAATGGGATTT,, 40 4837,AI085559,,20,100,AAAAAATGGGATTTTAGTTC,, 4838,AI085559,,20,94,TGGGATTTTAGTTCTTATTC,, 4839,A1085559,,20,88,TTTAGTTCTTATTCTGTGAT,, 4840,A1085559,,20,82,TCTTATTCTGTGATAACTAT,, 4841,AI085559,,20,76,TCTGTGATAACTATCCTCCT,, 45 4842,AI085559,,20,70,ATAACTATCCTCCTCATATA,, 4843,AI085559,,20,64,ATCCTCCTCATATAATACTA,, 4844,AI085559,,20,58,CTCATATAATACTATTCTTT,, 4845,AI085559,,20,52,TAATACTATTCTTTTTGACA,, 4846,AI085559,,20,46,TATTCTTTTTGACACCATTT,, 50 4847,A1085559,,20,40,TTTTGACACCATTTGAAGGA,, 4848,AI085559,,20,34,CACCATTTGAAGGAACCAAT,, 4849,AI085559,20,28,TTGAAGGAACCAATATTTGG,, 4850,AI085559,,20,22,GAACCAATATTTGGACCTTA,, 4851,AI085559,,20,16,ATATTTGGACCTTATTTTGA,, 55 4852,AI085559,,20,10,GGACCTTATTTTGAGGTTGT,, 4853,A1085559,,20,4,TATTTTGAGGTTGTCTGTCT,, (GENBANK ACCESSION NO. AI654215) TTTTTTTTTTTTTTTTTTTTTTGATGTTTCCCAGTACCACTTCAGCCTTGCCGGCTGCGTAAACTTTTGCTGTATCGAAAAGGTT GATGCCATTATCATAGGCCAAGGTCATGAGCTGCTCTGCCATCTCATCGGTGATCTGGCCTCCGAAGGTCACCCATGTTCCAAGTCC GGGAGCCCGTCGTTGATTCTGGATACATGGAGCCAGCCTCACTTATCCAGACTTGCTCGGTTTTTTACAGGGGGAAAATTCTGCTCC TGAACGGGAACGACCGGAGACAAGGCCATTTTCCGAGCACTCAGGGGAACGCCAGGTCAC (SEQ ID NO: 4854) 4855,Al654215,,20,391,GTGACCTGGCGTTCCCCTGA,, 4856,Al654215,,20,385,TGGCGTTCCCCTGAGTGCTC,, 4857,AI654215,,20,379,TCCCCTGAGTGCTCGGAAAA,, 4858,AI654215,,20,373,GAGTGCTCGGAAAATGGCCT,, 4859,AI654215,,20,367,TCGGAAAATGGCCTTGTCTC,, 4860,AI654215,,20,361,AATGGCCTTGTCTCCGGTCG,, 4861,AI654215,,20,355,CTTGTCTCCGGTCGTTCCCG,, 4862,AI654215,,20,349,TCCGGTCGTTCCCGTTCAGG,, 4863,AI654215,,20,343,CGTTCCCGTTCAGGAGCAGA,,

4864,AI654215,,20,337,CGTTCAGGAGCAGAATTTTC,,

4865,AI654215,,20,331,GGAGCAGAATTTTCCCCCCTG,,

```
4866,AI654215,,20,325,GAATTTTCCCCCTGTAAAAA,,
      4867,AI654215,,20,319,TCCCCCTGTAAAAAACCGAG,,
      4868,AI654215,,20,313,TGTAAAAAACCGAGCAAGTC,,
      4869,AI654215,,20,307,AAACCGAGCAAGTCTGGATA,,
      4870,A1654215,,20,301,AGCAAGTCTGGATAAGTGAG,,
      4871,AI654215,,20,295,TCTGGATAAGTGAGGCTGGC,,
      4872,AI654215,,20,289,TAAGTGAGGCTGGCTCCATG,,
      4873,AI654215,,20,283,AGGCTGGCTCCATGTATCCA,
      4874,AI654215,,20,277,GCTCCATGTATCCAGAATCA,,
      4875,A1654215,,20,271,TGTATCCAGAATCAACGACG,,
      4876,AI654215,,20,265,CAGAATCAACGACGGGCTCC,,
      4877,AI654215,,20,259,CAACGACGGGCTCCCCGGCT,,
      4878,AI654215,,20,253,CGGGCTCCCCGGCTCGGCTC,,
     4879,AI654215,,20,247,CCCCGGCTCGGCTCTCGCTG,
4880,AI654215,,20,241,CTCGGCTCTCGCTGCGGCAG,
      4881,AI654215,,20,235,TCTCGCTGCGGCAGACGGGC,,
      4882,AI654215,,20,229,TGCGGCAGACGGGCTCCCCC,,
      4883,AI654215,,20,223,AGACGGGCTCCCCCGGGATG,,
      4884, A1654215, 20, 217, GCTCCCCGGGATGATTTAC,
20
      4885,AI654215,,20,211,CCGGGATGATTTACAGGAAC,,
      4886,AI654215,,20,205,TGATTTACAGGAACCTGGGC,,
      4887,AI654215,,20,199,ACAGGAACCTGGGCAAGTTT,,
      4888,AI654215,,20,193,ACCTGGGCAAGTTTGGCCTG,,
      4889,AI654215,,20,187,GCAAGTTTGGCCTGCGGGTT,,
      4890,AI654215,,20,181,TTGGCCTGCGGGTTTCCTGC,,
      4891,AI654215,,20,175,TGCGGGTTTCCTGCCTGGGA,,
      4892,AI654215,,20,169,TTTCCTGCCTGGGACTTGGA,,
      4893,AI654215,,20,163,GCCTGGGACTTGGAACATGG,,
      4894,AI654215,,20,157,GACTTGGAACATGGGTGACC,,
      4895,AI654215,,20,151,GAACATGGGTGACCTTCGGA,,
      4896,AI654215,,20,145,GGGTGACCTTCGGAGGCCAG,,
      4897,AI654215,,20,139,CCTTCGGAGGCCAGATCACC,,
      4898,AI654215,,20,133,GAGGCCAGATCACCGATGAG,,
      4899,AI654215,,20,127,AGATCACCGATGAGATGGCA,,
      4900,AI654215,,20,121,CCGATGAGATGGCAGAGCAG,
      4901,AI654215,,20,115,AGATGGCAGAGCAGCTCATG,,
      4902,AI654215,,20,109,CAGAGCAGCTCATGACCTTG,,
      4903,AI654215,,20,103,AGCTCATGACCTTGGCCTAT,,
      4904, AI654215, 20,97, TGACCTTGGCCTATGATAAT,
40
      4905,AI654215,,20,91,TGGCCTATGATAATGGCATC,,
      4906,AI654215,,20,85,ATGATAATGGCATCAACCTT,,
      4907,AI654215,,20,79,ATGGCATCAACCTTTTCGAT,,
      4908,AI654215,,20,73,TCAACCTTTTCGATACAGCA,,
      4909,AI654215,,20,67,TTTTCGATACAGCAAAAGTT,,
      4910,AI654215,,20,61,ATACAGCAAAAGTTTACGCA,,
45
      4911,AI654215,,20,55,CAAAAGTTTACGCAGCCGGC,,
      4912, AI654215, 20,49, TTTACGCAGCCGGCAAGGCT,
      4913,AI654215,,20,43,CAGCCGGCAAGGCTGAAGTG,,
      4914,AI654215,,20,37,GCAAGGCTGAAGTGGTACTG,,
      4915,AI654215,,20,31,CTGAAGTGGTACTGGGAAAC,,
50
      4916,AI654215,,20,25,TGGTACTGGGAAACATCAAA,,
     4917,AI654215,,20,19,TGGGAAACATCAAAAAAAA,,
     4918,AI654215,,20,13,ACATCAAAAAAAAAAAAAAAA,,
      4919,AI654215,,20,7,AAAAAAAAAAAAAAAAAAAAAA,,
55
      4920,AI654215,,20,1,AAAAAAAAAAAAAAAAAAAAA,,
      (GENBANK ACCESSION NO. AA505075)
      TTTTTTTTTTTTTTTTTTTTTTTTTAAAATAACAACAAAATGTATTTAAAAACAGACTTCTCCAGTTGGCATTTTGAAT
      GAAATTGCTAACAACTCCAACCCTCTATATTGTGTTTCTTTTGCTCCTGGAGTCCTCTTGCAGCTTTAATTCTTGAAACTCAGGCGGC
      (SEQ ID NO: 4921)
     4922,AA505075,,20,159,GCCGCCTGAGTTTCAAGAAT,,
     4923,AA505075,,20,153,TGAGTTTCAAGAATTAAAGC,,
      4924,AA505075,,20,147,TCAAGAATTAAAGCTGCAAG,,
     4925,AA 505075,,20,141,ATTAAAGCTGCAAGAGGACT.,
4926,AA 505075,,20,135,GCTGCAAGAGGACTCCAGGA.,
4927,AA 505075,,20,129,AGAGGACTCCAGGAGCAAAA.,
      4928,AA505075,,20,123,CTCCAGGAGCAAAAGAAACA,,
     4929,AA505075,,20,117,GAGCAAAAGAAACACAATAT,,
4930,AA505075,,20,111,AAGAAACACAATATAGAGGG,,
4931,AA505075,,22,105,CACAATATAGAGGGTTGGAG,
70
      4932,AA505075,,20,99,ATAGAGGGTTGGAGTTGTTA,,
      4933,AA505075,,20,93,GGTTGGAGTTGTTAGCAATT,,
     4934,AA 505075,,20,87,AGTTGTTAGCAATTTCATTC,,
4935,AA 505075,,20,81,TAGCAATTTCATTCAAAATG,,
```

75

4936,AA505075,,20,75,TTTCATTCAAAATGCCAACT,,

4937,AA505075,,20,69,TCAAAATGCCAACTGGAGAA,, 4938,AA505075,,20,63,TGCCAACTGGAGAAGTCTGT,, 4939,AA505075,,20,57,CTGGAGAAGTCTGTTTTTAA,, 4940,AA505075,,20,51,AAGTCTGTTTTTAAATACAT,, 4941,AA505075,,20,45,GTTTTTAAATACATTTTGTT,, 4942,AA505075,,20,39,AAATACATTTTGTTGTTATT,, 4943,AA505075,,20,33,ATTTTGTTGTTATTTTAAAA... 4944,AA505075,,20,27,TTGTTATTTTAAAAAAAAAAA, 4945,AA505075,,20,21,TTTTAAAAAAAAAAAAAAAAA, 4946,AA505075,,20,15,AAAAAAAAAAAAAAAAAAAA,, 4947,AA505075,,20,9,AAAAAAAAAAAAAAAAAAAA,, 4948,AA505075,,20,3,AAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AA906703) ACACGCCTCATGGATTGCTGCCATCAGTTTAACTAATAAATTAAAACTAAAAAGAGGGATGTGAGGGGAGGGGAACTAACGGCAAA CTITTCATGTTTTATCTGGTAAGAAATTGTGAATTTCTCAGAATTTCCCTGGGCAAAAACCTGTGACCAGAGAATCTGTGAAATAAA CATTCCACTTCATACTCTGGCT (SEQ ID NO: 4949) 20 4950,AA906703,,20,350,AGCCAGAGTATGAAGTGGAA,, 4951,AA906703,,20,344,AGTATGAAGTGGAATGAATG,, 4952,AA906703,,20,338,AAGTGGAATGAATGCTCCTG,, 4953,AA906703,,20,332,AATGAATGCTCCTGTTCTGA,, 4954,AA906703,,20,326,TGCTCCTGTTCTGAGAAGCA,, 4955,AA906703,,20,320,TGTTCTGAGAAGCACACTTG, 4956,AA906703,,20,314,GAGAAGCACACTTGTAACTG,, 4957,AA906703,,20,308,CACACTTGTAACTGCATCTT,, 4958,AA906703,,20,302,TGTAACTGCATCTTTTGGAA,, 30 4959,AA906703,,20,296,TGCATCTTTTGGAATTTTTT,, 4960, AA906703, 20, 290, TTTTGGAATTTTTTTTTT, 4961,AA906703,,20,284,AATTTTTTTTTTTTTTTC,, 4962,AA906703,,20,278,TTTTTTTTTTTTCCAAGGG, 4963,AA906703,,20,272,TTTTTTTCCAAGGGGTAGAG,, 35 4964,AA906703,,20,266,TCCAAGGGGTAGAGATTTAT,, 4965,AA906703,,20,260,GGGTAGAGATTTATGTATTT,, 4966,AA906703,,20,254,AGATTTATGTATTTTATTTC, 4967,AA906703,,20,248,ATGTATTTTATTTCACAGAT, 4968,AA906703,,20,242,TTTATTTCACAGATTCTCTG,, 4969,AA906703,,20,236,TCACAGATTCTCTGGTCACA,, 40 4970,AA906703,,20,230,ATTCTCTGGTCACAGGTTTT,, 4971,AA906703,,20,224,TGGTCACAGGTTTTTGCCCA, 4972,AA906703,,20,218,CAGGTTTTTGCCCAGGGAAA,, 4973,AA906703,,20,212,TTTGCCCAGGGAAATTCTGA,, 4974,AA906703,,20,206,CAGGGAAATTCTGAGAAATT,, 4975,AA906703,,20,200,AATTCTGAGAAATTCACAAT,, 4976,AA906703,,20,194,GAGAAATTCACAATTTCTTA,, 4977,AA906703,,20,188,TTCACAATTTCTTACCAGAT,, 4978,AA906703,,20,182,ATTTCTTACCAGATAAAACA,, 4979,AA906703,,20,176,TACCAGATAAAACATGAAAA, 4980,AA906703,,20,170,ATAAAACATGAAAAGTTTGC,, 4981,AA906703,,20,164,CATGAAAAGTTTGCCGTTAG,, 4982,AA906703,,20,158,AAGTTTGCCGTTAGTTCCCC,, 4983,AA906703,,20,152,GCCGTTAGTTCCCCTCCCCT,, 55 4984,AA906703,,20,146,AGTTCCCCTCCCTCACATC,, 4985,AA906703,,20,140,CCTCCCTCACATCCCTCTT,, 4986,AA906703,,20,134,CTCACATCCCTCTTTTAGT,, 4987,AA906703,,20,128,TCCCTCTTTTTAGTTTTAAT,, 4988,AA906703,,20,122,TTTTTAGTTTTAATTTATTA,, 60 4989,AA906703,,20,116,GTTTTAATTTATTAGTTAAA,, 4990,AA906703,,20,110,ATTTATTAGTTAAACTGATG., 4991,AA906703,,20,104,TAGTTAAACTGATGGCAGCA,, 4992,AA906703,,20,98,AACTGATGGCAGCAATCCAT,, 4993,AA906703,,20,92,TGGCAGCAATCCATGAGGCG, 4994,AA906703,,20,86,CAATCCATGAGGCGTGTCAA,, 65 4995,AA906703,,20,80,ATGAGGCGTGTCAAAGAGTG,, 4996,AA906703,,20,74,CGTGTCAAAGAGTGTACATA,, 4997,AA906703,,20,68,AAAGAGTGTACATATGTATG... 4998,AA906703,,20,62,TGTACATATGTATGTGTGTA,, 4999,AA906703,,20,56,TATGTATGTGTGTATATTGA,, 5000,AA906703,,20,50,TGTGTGTATATTGAATGCTA,, 5001,AA906703,,20,44,TATATTGAATGCTAAACATA,, 5002,AA906703,,20,38,GAATGCTAAACATATTACTG,, 5003,AA906703,,20,32,TAAACATATTACTGAAAGAC,,

75

5004,AA906703,,20,26,TATTACTGAAAGACACATTT...

5005,AA906703,,20,20,TGAAAGACACATTTTAATAA,, 5006,AA906703,,20,14,ACACATTTTAATAAAGATTT,, 5007,AA906703,,20,8,TTTAATAAAGATTTCTGTCA,, 5008,AA906703,,20,2,AAAGATTTCTGTCATAATTC,, (GENBANK ACCESSION NO. AI369870)

- 10 ACGAAGGATTGTGGGAAATAGAAAATAACCCAGGAGTAAAGTTTACTGGCTACCAGGCAATTCAGCAACAGAGCTCTTCAGAAACT GAGGGAGAAGGTGGAAATACTGCAGATGCAAGCAGTGA (SEQ ID NO: 5009)
- 5010,AI369870,,20,448,TCACTGCTTGCATCTGCAGT,,
 5011,AI369870,,20,442,CTTGCATCTGCAGTATTTCC,,
 5012,AI369870,,20,436,TCTGCAGTATTTCCACCTTC,,
 5013,AI369870,,20,430,GTATTTCCACCTTCTCCCTC,,
 5014,AI369870,,20,424,CCACCTTCTCCCTCAGTTTC,,
 5015,AI369870,,20,418,TCTCCCTCAGTTTCTGAAGA,
- 20 5016,A1369870,,20,412,TCAGTTTCTGAAGAGCTCTG,, 5017,A1369870,,20,406,TCTGAAGAGCTCTGTTGCTG,, 5018,A1369870,,20,400,GAGCTCTGTTGCTGAATTGC,, 5019,A1369870,,20,394,TGTTGCTGAATTGCCTGGTA,, 5020,A1369870,,20,388,TGAATTGCCTGGTAGCCAGT,
- 25 5021,AI369870,,20,382,GCCTGGTAGCCAGTAAACTT,, 5022,AI369870,,20,376,TAGCCAGTAAACTTTACTCC,, 5023,AI369870,,20,370,GTAAACTTTACTCCTGGGTT,, 5024,AI369870,,20,364,TTTACTCCTGGGTTATTTTC,, 5025,AI369870,,20,358,CCTGGGTTATTTTCTATTTC,
- 30 5026,AI369870,,20,352,TTATTTTCTATTTCCCACAA,, 5027,AI369870,,20,346,TCTATTTCCCACAATCCTTC,, 5028,AI369870,,20,340,TCCCACAATCCTTCGTTAAA,, 5029,AI369870,,20,334,AATCCTTCGTTAAATCCTTT,, 5030,AI369870,,20,328,TCGTTAAATCCTTTCCGTTT,
- 35 5031,Al369870,,20,322,AATCCTTTCCGTTTGTTTGA,, 5032,Al369870,,20,316,TTCCGTTTGTTTGACTTTCC,, 5033,Al369870,,20,310,TTGTTTGACTTTCCAAACTT,, 5034,Al369870,,20,304,GACTTTCCAAACTTGTCTTT,, 5035,Al369870,,20,298,CCAAACTTGTCTTTGTACTC,
- 40 5036,AI369870,,20,292,TTGTCTTTGTACTCCTTATA., 5037,AI369870,,20,286,TTGTACTCCTTATATGGAAA., 5038,AI369870,,20,280,TCCTTATATGGAAAAAGGTC., 5039,AI369870,,20,274,TATGGAAAAAGGTCTTTGGG.,
- 5040,Al369870,,20,268,AAAAGGTCTTTGGGACCTAG,, 5041,Al369870,,20,262,TCTTTGGGACCTAGAAATGC,, 5042,Al369870,,20,256,GGACCTAGAAATGCAGTTTC,, 5043,Al369870,,20,250,AGAAATGCAGTTTCATGGGT,, 5044,Al369870,,20,244,GCAGTTTCATGGGTGCCAAA,, 5045,Al369870,,20,238,TCATGGGTGCCAAAAAAGAA,
- 50 5046,AI369870,20,232,GTGCCAAAAAAGAAGATAGG,, 5047,AI369870,20,226,AAAAAGAAGATAGGATACTT,, 5048,AI369870,20,220,AAGATAGGATACTTGTTTGC,, 5049,AI369870,,20,214,GGATACTTGTTTGCTGGAGG,, 5050,AI369870,,20,208,TTGTTTGCTGGAGGCTTCAC,,
- 55 5051,Al369870,,20,202,GCTGGAGGCTTCACAGCGCC., 5052,Al369870,,20,196,GGCTTCACAGCGCCCTCTGG,, 5053,Al369870,,20,190,ACAGCGCCCTCTGGGAGTTC., 5054,Al369870,,20,184,CCCTCTGGGAGTTCATCAAT., 5055,Al369870,,20,178,GGGAGTTCATCAATCCGGGC.,
- 5056,AI369870,,20,172,TCATCAATCCGGGCCGGCCA,, 5057,AI369870,,20,166,ATCCGGGCCGGCCAGTGCGG,, 5058,AI369870,,20,160,GCCGGCCAGTGCGGGTAGCC,, 5059,AI369870,,20,154,CAGTGCGGGTAGCCCTTCAT,, 5060,AI369870,,20,148,GGGTAGCCCTTCATCTTGGC,
- 65 5061,AI369870,,20,142,CCCTTCATCTTGGCGAAGAC,, 5062,AI369870,,20,136,ATCTTGGCGAAGACCAGGTC,, 5063,AI369870,,20,130,GCGAAGACCAGGTCGCCCGC,, 5064,AI369870,,20,124,ACCAGGTCGCCCGCTTTGTA,, 5065,AI369870,,20,118,TCGCCCGCTTTGTACTCGCG,
- 70 5066,AI369870,,20,112,GCTTTGTACTCGCGGGGCCG,, 5067,AI369870,,20,106,TACTCGCGGGGCCGCGGACG, 5068,AI369870,,20,100,CGGGGCCGCGGACGCGCCAT,, 5069,AI369870,,20,94,CGCGGACGCCCATCCCAGC,, 5070,AI369870,20,88,CGCGCCATCCCAGCCGCTCC,
- 75 5071,AI369870,,20,82,ATCCCAGCCGCTCCCCTTCC,,

5072,AI369870,,20,76,GCCGCTCCCCTTCCTGGTAG,, 5073,AI369870,,20,70,CCCCTTCCTGGTAGTCCTTG,, 5074,AI369870,,20,64,CCTGGTAGTCCTTGGTCGCC,, 5075,AI369870,,20,58,AGTCCTTGGTCGCCGCGAAG,, 5076,A1369870,,20,52,1'GGTCGCCGCGAAGATGCCG,, 5077,AI369870,,20,46,CCGCGAAGATGCCGGGAGGC,, 5078,AI369870,,20,40,AGATGCCGGGAGGCCGCCCC,, 5079,AI369870,,20,34,CGGGAGGCCGCCCCCCGCG,, 5080,AI369870,,20,28,GCCGCCCCCCGCGGGCCGA,, 5081,AI369870,,20,22,CCCCGCGGGCCGACGAATT,, 10 5082,AI369870,,20,16,CGGGCCGACGAATTGCGCCG,, 5083,AI369870,,20,10,GACGAATTGCGCCGCGCTCC,, 5084,AI369870,,20,4,TTGCGCCGCGCTCCCCGCGG, (GENBANK ACCESSION NO. AA463249) 15 TTTTTTTTTTTTTTTTTCCTCAAGAAAAAAGTTTAATAGCAAGGAGTTTCCATCAGTCCCGGTCTTTGTGAGGATTACCACAACA CTCTGCTGCCCAGCCTGAAGTGCAGTGGTGTGATCTCGGCTCACTGCAACCTCCGGCCTTCCAGGTTTAGGTGATTCTCTTGCCTCGGC CTCCCGAGTAGCTGGGATGGACTACAGGCACATGTCACCATGCCCAGCTAATTTTTTGTATTTTTAGTA (SEQ ID NO: 5085) 20 5086,AA463249,,20,315,TACTAAAAATACAAAAATT,, 5087,AA463249,,20,309,AAATACAAAAAATTAGCTGG,, 5088,AA463249,,20,303,AAAAAATTAGCTGGGCATGG, 5089, AA463249, 20, 297, TTAGCTGGGCATGGTGACAT, 5090,AA463249,,20,291,GGGCATGGTGACATGTGCCT, 5091,AA463249,,20,285,GGTGACATGTGCCTGTAGTC,, 5092,AA463249,,20,279,ATGTGCCTGTAGTCCATCCC,, 5093,AA463249,,20,273,CTGTAGTCCATCCCAGCTAC,, 5094,AA463249,,20,267,TCCATCCCAGCTACTCGGGA,, 5095,AA463249,,20,261,CCAGCTACTCGGGAGGCCGA,, 5096,AA463249,,20,255,ACTCGGGAGGCCGAGGCAAG, 5097, AA463249,, 20, 249, GAGGCCGAGGCAAGAGAATC,, 5098,AA463249,,20,243,GAGGCAAGAGAATCACCTAA,, 5099,AA463249,,20,237,AGAGAATCACCTAAACCTGG,, 5100,AA463249,,20,231,TCACCTAAACCTGGAAGGCG,, 5101,AA463249,,20,225,AAACCTGGAAGGCGGAGGTT,, 5102,AA463249,,20,219,GGAAGGCGGAGGTTGCAGTG,, 5103,AA463249,,20,213,CGGAGGTTGCAGTGAGCCGA, 5104,AA463249,,20,207,TTGCAGTGAGCCGAGATCAC, 5105,AA463249,,20,201,TGAGCCGAGATCACACCACT,, 5106,AA463249,,20,195,GAGATCACACCACTGCACTT,, 5107,AA463249,,20,189,ACACCACTGCACTTCAGGCT,, 5108,AA463249,,20,183,CTGCACTTCAGGCTGGGCAG, 5109,AA463249,,20,177,TTCAGGCTGGGCAGCAGAGC, 5110,AA463249,,20,171,CTGGGCAGCAGAGCGAGACT, 5111,AA463249,,20,165,AGCAGAGCGAGACTCCATCT,, 5112,AA463249,,20,159,GCGAGACTCCATCTCAAAAA,, 5113,AA463249,,20,153,CTCCATCTCAAAAAAAAAAA,, 5114,AA463249,,20,147,CTCAAAAAAAAAAAAAAAAAAAA, 50 5115,AA463249,,20,141,AAAAAAAAAAAAAAGGAAGAG,, 5116,AA463249,,20,135,AAAAAAAGGAAGAGGTAAAA,, 5117,AA463249,,20,129,AGGAAGAGGTAAAAGGCAAG,, 5118,AA463249,,20,123,AGGTAAAAGGCAAGGCAGCA,, 5119,AA463249,,20,117,AAGGCAAGGCAGCATTTAAT,, 5120,AA463249,,20,111,AGGCAGCATTTAATAAGTAC,, 5121,AA463249,,20,105,CATTTAATAAGTACCTGTTG,, 5122,AA463249,,20,99,ATAAGTACCTGTTGTATCCT,, 5123,AA463249,,20,93,ACCTGTTGTATCCTTTTAAG,, 5124,AA463249,,20,87,TGTATCCTTTTAAGTGTTTG,, 60 5125,AA463249,,20,81,CTTTTAAGTGTTTGTTGTGG,, 5126,AA463249,,20,75,AGTGTTTGTTGTGGTAATCC,, 5127,AA463249,,20,69,TGTTGTGGTAATCCTCACAA,, 5128,AA463249,,20,63,GGTAATCCTCACAAAGACCG,, 5129,AA463249,,20,57,CCTCACAAAGACCGGGACTG,, 65 5130,AA463249,,20,51,AAAGACCGGGACTGATGGAA,, 5131,AA463249,,20,45,CGGGACTGATGGAAACTCCT,, 5132,AA463249,,20,39,TGATGGAAACTCCTTGCTAT,, 5133,AA463249,,20,33,AAACTCCTTGCTATTAAACT, 5134,AA463249,,20,27,CTTGCTATTAAACTTTTTT, 5135,AA463249,,20,21,ATTAAACTTTTTTTTTTGAG., 5136,AA463249,,20,15,CTTTTTTCTTGAGGAAAAA,,

5137,AA463249,,20,9,TTCTTGAGGAAAAAAAAAAA,, 5138,AA463249,,20,3,AGGAAAAAAAAAAAAAAAA,,

(GENBANK ACCESSION NO. R38894)

5140,R38894,,20,152,GCCCTATCTCANCCTCCCNT,, 5141,R38894,,20,146,TCTCANCCTCCCNTTCTACT,, 5142,R38894,,20,140,CCTCCCNTTCTACTCTCTCT,, 5143,R38894,,20,134,NTTCTACTCTCTAGTGTC,, 5144,R38894,,20,128,CTCTCTCTAGTGTCTCACTT,, 5145,R38894,,20,122,CTAGTGTCTCACTTGAGAAA,, 5146,R38894,,20,116,TCTCACTTGAGAAAGACCAT,, 5147,R38894,,20,110,TTGAGAAAGACCATAGATTT,, 5148,R38894,,20,104,AAGACCATAGATTTGAGTGG,, 5149,R38894,,20,98,ATAGATTTGAGTGGGAAGAG,, 5150,R38894,,20,92,TTGAGTGGGAAGAGTTATGC,, 5151,R38894,,20,86,GGGAAGAGTTATGCCTTAAA,, 5152,R38894,,20,80,AGTTATGCCTTAAACTGTCT,, 5153,R38894,,20,74,GCCTTAAACTGTCTTCATTA,, 5154,R38894,,20,68,AACTGTCTTCATTATAAATT,, 5155,R38894,,20,62,CTTCATTATAAATTCAAAAT,, 5156,R38894,,20,56,TATAAATTCAAAATGTACTT,, 5157,R38894,,20,50,TTCAAAATGTACTTGAAGAA,, 5158,R38894,,20,44,ATGTACTTGAAGAATACAGA,, 5159,R38894,,20,38,TTGAAGAATACAGATCGACT,, 25 5160,R38894,,20,32,AATACAGATCGACTGTATGA,, 5161,R38894,,20,26,GATCGACTGTATGATGGCAT,, 5162,R38894,,20,20,CTGTATGATGGCATGAATAA,, 5163,R38894,,20,14,GATGGCATGAATAAACCGCT,, 5164,R38894,,20,8,ATGAATAAACCGCTATGCTG,, 30 5165,R38894,,20,2,AAACCGCTATGCTGTAAAAA,, (GENBANK ACCESSION NO. R49144) TTTTTTTTTTTTTGGAGATGACCTGNACTTTTAATGGCACAGCCCCAGCTCCAGCAAAGCAGCAAGACAGGAAGCTATGCAAAGC TGCTCAGAGGTGCAGTGGCCAAACAACTCTAGGAGATCGCCTGTNTTCCCTCCCATCCCCAAGCTTATGACGTGGCTCCATGCCCA GGGAACTTTGGGCCANCCCANCCCCANTCCCAAACCCTCATAATNCACAGAGGGAGCCTGGGCCAAG 35 (SEQ ID NO: 5166) 5167,R49144,,20,222,CTTGGCCCAGGCTCCCTCTG., 5168,R49144,,20,216,CCAGGCTCCCTCTGTGNATT,, 5169,R49144,,20,210,TCCCTCTGTGNATTATGAGG,, 40 5170,R49144,,20,204,TGTGNATTATGAGGGTTTGG,, 5171,R49144,,20,198,TTATGAGGGTTTGGGANTGG,, 5172,R49144,,20,192,GGGTTTGGGANTGGGGNTGG,, 5173,R49144,,20,186,GGGANTGGGGNTGGC,, 5174,R49144,,20,180,GGGGNTGGGNTGGCCCAAAG,, 45 5175,R49144,,20,174,GGGNTGGCCCAAAGTTCCCT,, 5176,R49144,,20,168,GCCCAAAGTTCCCTGGGCAT,, 5177,R49144,,20,162,AGTTCCCTGGGCATGGAGCC,, 5178,R49144,,20,156,CTGGGCATGGAGCCACGTCA,, 5179,R49144,,20,150,ATGGAGCCACGTCATAAGCT,, 5180,R49144,,20,144,CCACGTCATAAGCTTGGGGG,, 5181,R49144,,20,138,CATAAGCTTGGGGGATGGGA,, 5182,R49144,,20,132,CTTGGGGGATGGGAGGGAAN,, 5183,R49144,,20,126,GGATGGGAGGGAANACAGGC,, 5184,R49144,,20,120,GAGGGAANACAGGCGATCTC,, 5185,R49144,,20,114,ANACAGGCGATCTCCTAGAG,, 55 5186,R49144,,20,108,GCGATCTCCTAGAGTTGTTT,, 5187,R49144,,20,102,TCCTAGAGTTGTTTGGCCAC,, 5188,R49144,,20,96,AGTTGTTTGGCCACTGCACC,, 5189,R49144,,20,90,TTGGCCACTGCACCTCTGAG,, 60 5190,R49144,,20,84,ACTGCACCTCTGAGCAGCTT,, 5191,R49144,,20,78,CCTCTGAGCAGCTTTGCATA,, 5192,R49144,,20,72,AGCAGCTTTGCATAGCTTCC,, 5193,R49144,,20,66,TTTGCATAGCTTCCTGTCTT, 5194,R49144,,20,60,TAGCTTCCTGTCTTGCTGCT,, 5195,R49144,,20,54,CCTGTCTTGCTGCTTTGCTG,, 65 5196,R49144,,20,48,TTGCTGCTTTGCTGGAGCTG,, 5197,R49144,,20,42,CTTTGCTGGAGCTGGGGCTG,, 5198,R49144,,20,36,TGGAGCTGGGGCTGTGCCAT,, 5199,R49144,,20,30,TGGGGCTGTGCCATTAAAAG,, 5200,R49144,,20,24,TGTGCCATTAAAAGTNCAGG,, 5201,R49144,,20,18,ATTAAAAGTNCAGGTCATCT,, 70 5202,R49144,,20,12,AGTNCAGGTCATCTCCAAAA,,

5203,R49144,,20,6,GGTCATCTCCAAAAAAAAAAA,, (GENBANK ACCESSION NO. AA398883)

- (SEQ ID NO: 5204) 5205,AA398883,,20,514,TCCATGTATCACCCTTCCTA,, 5206,AA398883,,20,508,TATCACCCTTCCTATCTACA,, 5207,AA398883,,20,502,CCTTCCTATCTACATAAGCA,, 5208,AA398883,,20,496,TATCTACATAAGCAAAATAA,, 5209,AA398883,,20,490,CATAAGCAAAATAAGCCCAC,, 5210,AA398883,,20,484,CAAAATAAGCCCACAGCATC,, 5211,AA398883,,20,478,AAGCCCACAGCATCCTCTCT,, 5212,AA398883,,20,472,ACAGCATCCTCTATGGCA,, 5213,AA398883,,20,466,TCCTCTCTATGGCAGATTCT,, 5214,AA398883,,20,460,CTATGGCAGATTCTCATCCC,, 5215,AA398883,,20,454,CAGATTCTCATCCCCGTAGA,, 5216,AA398883,,20,448,CTCATCCCCGTAGATGCAAT,, 5217,AA398883,,20,442,CCCGTAGATGCAATTAGTCT,, 5218,AA398883,,20,436,GATGCAATTAGTCTGTCACT, 5219,AA398883,,20,430,ATTAGTCTGTCACTCCATTT,, 5220,AA398883,,20,424,CTGTCACTCCATTTGGAAAA,, 5221,AA398883,,20,418,CTCCATTTGGAAAATGTTCA,, 5222,AA398883,,20,412,TTGGAAAATGTTCACCTGCA,, 5223,AA398883,,20,406,AATGTTCACCTGCAGATGTT,, 5224,AA398883,,20,400,CACCTGCAGATGTTCTGGTA,, 5225,AA398883,,20,394,CAGATGTTCTGGTAAACTGA,, 5226,AA398883,,20,388,TTCTGGTAAACTGATTGCTG,, 5227,AA398883,,20,382,TAAACTGATTGCTGGCAACA,, 5228,AA398883,,20,376,GATTGCTGGCAACAACAGAT,, 5229,AA398883,,20,370,TGGCAACAACAGATTCTCTT,, 5231,AA398883,,20,358,ATTCTCTTGGCTCATATTTC,,
- 5237,AA398883,,20,322,GATGATGATCGTCATCATCA,, 5238,AA398883,,20,316,GATCGTCATCATCAAGAATT,, 5239,AA398883,,20,310,CATCATCAAGAATTTAATGA,, 5240,AA398883,,20,304,CAAGAATTTAATGATTAAAA,, 5241,AA398883,,20,298,TTTAATGATTAAAATAGCAT,,
- 5241,AA398883,,20,298,TTTAATGATTAAAATAGCAT,, 5242,AA398883,,20,292,GATTAAAATAGCATGCCTTT,, 5243,AA398883,,20,286,AATAGCATGCCTTTCTCTCT,, 5244,AA398883,,20,280,ATGCCTTTCTCTCTTTCTCTT, 5245,AA398883,,20,274,TTCTCTCTTTCTCTTAATAA,
- 5246,AA398883,,20,268,CTTTCTCTTAATAAGCCCAC,, 5247,AA398883,,20,262,CTTAATAAGCCCACATATAA,, 5248,AA398883,,20,256,AAGCCCACATATAAATGTAC,, 5249,AA398883,,20,250,ACATATAAATGTACTTTTC,
- 55 5250,AA398883,,20,244,AAATGTACTTTTTCTTCCAG,, 5251,AA398883,,20,238,ACTTTTTCTTCCAGAAAAAT,, 5252,AA398883,,20,232,TCTTCCAGAAAAATTCTCCT,, 5253,AA398883,,20,226,AGAAAAATTCTCCTTGAGGA,, 5254,AA398883,,20,220,ATTCTCCTTGAGGAAAAATG,,
- 60 5255,AA398883,20,214,CTTGAGGAAAAATGTCCAAA,, 5256,AA398883,20,208,GAAAAATGTCCAAAATAAGA,, 5257,AA398883,20,202,TGTCCAAAATAAGATGAATC,, 5258,AA398883,20,196,AAATAAGATGAATCACTTAA,, 5259,AA398883,20,190,GATGAATCACTTAATACCGT,,
- 65 5260,AA398883,,20,184,TCACTTAATACCGTATCTTC., 5261,AA398883,,20,178,AATACCGTATCTTCTAAATT., 5262,AA398883,,20,172,GTATCTTCTAAATTTGAAAT, 5263,AA398883,,20,166,TCTAAATTTGAAATATAATT., 5264,AA398883,,20,160,TTTGAAATATAATTCTGTTT.,
- 5265,AA398883,,20,154,ATATAATTCTGTTTGTGACC,,
 5266,AA398883,,20,148,TTCTGTTTGTGACCTGTTTT,,
 5267,AA398883,,20,142,TTGTGACCTGTTTTAAATGA,,
 5268,AA398883,,20,136,CCTGTTTTAAATGAACCAAAC,,
 5269,AA398883,,20,130,TTAAATGAACCAAACCAAAT,,
 5270,AA398883,,20,124,GAACCAAACCAAATCATACT,,

5271,AA398883,,20,118,AACCAAATCATACTTTTTCT,, 5272,AA398883,,20,112,ATCATACTTTTCTTTGAAT,, 5273,AA398883,,20,106,CTTTTTCTTTGAATTTAGCA,, 5274,AA398883,,20,100,CTTTGAATTTAGCAACCTAG,, 5275,AA398883,,20,94,ATTTAGCAACCTAGAAACAC,, -- 5276,AA398883,,20,88,CAACCTAGAAACACACATTT,, 5277,AA398883,,20,82,AGAAACACACATTTCTTTGA,, 5278,AA398883,,20,76,ACACATTTCTTTGAATTTAG,, 5279,AA398883,,20,70,TTCTTTGAATTTAGGTGATA,, 5280,AA398883,,20,64,GAATTTAGGTGATACCTAAA,, 5281,AA398883,,20,58,AGGTGATACCTAAATCCTTC,, 5282,AA398883,,20,52,TACCTAAATCCTTCTTATGT,, 5283,AA398883,,20,46,AATCCTTCTTATGTTTCTAA,, 5284,AA398883,,20,40,TCTTATGTTTCTAAATTTTG,, 5285,AA398883,,20,34,GTTTCTAAATTTTGTGATTC,, 15 5286,AA398883,,20,28,AAATTTTGTGATTCTATAAA,, 5287,AA398883,,20,22,TGTGATTCTATAAAACACAT., 5288,AA398883,,20,16,TCTATAAAACACATCATCAA,, 5289,AA398883,,20,10,AAACACATCATCAATAAAAT,, 20 5290,AA398883,,20,4,ATCATCAATAAAATAGTGAC,, (GENBANK ACCESSION NO. AA425700) CACATTTTATTTAATCTTTTATTTGAATCAAGGGAACCCTCATATGGAGAATAGAGACCCAAAGAACAGTTGGGATCAAGAGCTTAT TTACTTTTTAAAGAAATGATACATTTGTGGAAAATTGATCAAATAAAGAGCTTTAGGCTAAGGGCAGTAAATTGTGGCATGACTAAG 25 CAGTAAGGATGTTCTTCTCTGGAACAGAAGGGGCACTTTCTCATGGGAAAATTGTATTACCTGCTTTTTAGGGAGACAGCAGGTCA GGGAACCCTTCCTG (SEQ ID NO: 5291) 5292,AA425700,,20,343,CAGGAAGGGTTCCCTGACCT,, 5293,AA425700,,20,337,GGGTTCCCTGACCTGCTGTC,, 30 5294,AA425700,,20,331,CCTGACCTGCTGTCTCCCTA,, 5295,AA425700,,20,325,CTGCTGTCTCCCTAAAAGCA,, 5296,AA425700,,20,319,TCTCCCTAAAAGCAGGTAAT,, 5297,AA425700,,20,313,TAAAAGCAGGTAATACAATT,, 35 5298,AA425700,,20,307,CAGGTAATACAATTTCCCAT,, 5299,AA425700,,20,301,ATACAATTTCCCATGAGAAA,, 5300,AA425700,,20,295,TTTCCCATGAGAAAGTGCCC,, 5301,AA425700,,20,289,ATGAGAAAGTGCCCCTTCTG,, 5302,AA425700,,20,283,AAGTGCCCCTTCTGTTCCAG,, 5303,AA425700,,20,277,CCCTTCTGTTCCAGAAGAGA,, 5304,AA425700,,20,271,TGTTCCAGAAGAGAAGAACA,, 5305,AA425700,,20,265,AGAAGAGAAGAACATCCTTA,, 5306,AA425700,,20,259,GAAGAACATCCTTACTGGAG,, 5307,AA425700,,20,253,CATCCTTACTGGAGACTGGG, 45 5308,AA425700,,20,247,TACTGGAGACTGGGAGTAGA,, 5309,AA425700,,20,241,AGACTGGGAGTAGATGACGA,, 5310,AA425700,,20,235,GGAGTAGATGACGAAATGGA,, 5311,AA425700,,20,229,GATGACGAAATGGATCTGTA,, 5312,AA425700,,20,223,GAAATGGATCTGTACAAACA,, 50 5313,AA425700,,20,217,GATCTGTACAAACAAATCTA,, 5314,AA425700,,20,211,TACAAACAAATCTACTGAAA,, 5315,AA425700,,20,205,CAAATCTACTGAAATACTCC., 5316,AA425700,,20,199,TACTGAAATACTCCTTATCT., 5317,AA425700,,20,193,AATACTCCTTATCTTCCACT,, 55 5318,AA425700,,20,187,CCTTATCTTCCACTCATATC,, 5319,AA425700,,20,181,CTTCCACTCATATCCACCAT,, 5320,AA425700,,20,175,CTCATATCCACCATCTATTT, 5321,AA425700,,20,169,TCCACCATCTATTTCTTAGT,, 5322,AA425700,,20,163,ATCTATTTCTTAGTCATGCC,, 5323,AA425700,,20,157,TTCTTAGTCATGCCACAATT,, 5324,AA425700,,20,151,GTCATGCCACAATTTACTGC,, 5325,AA425700,,20,145,CCACAATTTACTGCCCTTAG,, 5326,AA425700,,20,139,TTTACTGCCCTTAGCCTAAA,, 5327,AA425700,,20,133,GCCCTTAGCCTAAAGCTCTT,, 65 5328,AA425700,,20,127,AGCCTAAAGCTCTTTATTTG,, 5329,AA425700,,20,121,AAGCTCTTTATTTGATCAAT,, 5330,AA425700,,20,115,TTTATTTGATCAATTTTCCA,, 5331,AA425700,,20,109,TGATCAATTTTCCACAAATG,,

5332,AA425700,,20,103,ATTTTCCACAAATGTATCAT,,

5333,AA425700,,20,97,CACAAATGTATCATTTCTTT,, 5334,AA425700,,20,91,TGTATCATTTCTTTAAAAAG,, 5335,AA425700,,20,85,ATTTCTTTAAAAAGTAAATA,, 5336,AA425700,,20,79,TTAAAAAGTAAATAAGCTCT,, 5337,AA425700,,20,73,AGTAAATAAGCTCTTGATCC,,

5338,AA425700,,20,67,TAAGCTCTTGATCCCAACTG,

70

75

5339,AA425700,,20,61,CTTGATCCCAACTGTTCTTT,, 5340,AA425700,,20,55,CCCAACTGTTCTTTGGGTCT,, 5341,AA425700,,20,49,TGTTCTTTGGGTCTCTATTC,, 5342,AA425700,,20,43,TTGGGTCTCTATTCTCCATA,, 5343,AA425700,,20,37,CTCTATTCTCCATATGAGGG,, 5344,AA425700,,20,31,TCTCCATATGAGGGTTCCCT,, 5345, AA425700, 20, 25, TATGAGGGTTCCCTTGATTC,, 5346,AA425700,,20,19,GGTTCCCTTGATTCAAATAA,, 5347,AA425700,,20,13,CTTGATTCAAATAAAAGATT,, 10 5348,AA425700,,20,7,TCAAATAAAAGATTAAATAA,, 5349,AA425700,,20,1,AAAAGATTAAATAAAATGTG,, (GENBANK ACCESSION NO. AA459692) CAGACACCTGCCTGATATTCTCACTACAAACATTTCGTGGTCAAAATTGTCTTCTGACGATGATGGTCATTTGGAGAACAAAAACAG 15 CAAAGCAAGAGAGAGAACAAGAGTATCCTGAGGCGGTCTCCTGCAGTGCTCATAGCTGTTCCTCCTTAGCCTTCCACCTGGTGGCC CTGGACTAGACCTCCAGAGAATTCC (SEQ ID NO: 5350) 5351,AA459692,,20,267,GGAATTCTCTGGAGGTCTAG,, 5352,AA459692,,20,261,CTCTGGAGGTCTAGTCCAGG,, 20 5353,AA459692,,20,255,AGGTCTAGTCCAGGGCCACC,, 5354,AA459692,,20,249,AGTCCAGGGCCACCAGGTGG,, 5355,AA459692,,20,243,GGGCCACCAGGTGGAAGGCT,, 5356,AA459692,,20,237,CCAGGTGGAAGGCTAAGGAG,, 25 5357,AA459692,,20,231,GGAAGGCTAAGGAGGAACAG,, 5358,AA459692,,20,225,CTAAGGAGGAACAGCTATGA,, 5359,AA459692,,20,219,AGGAACAGCTATGAGCACTG,, 5360,AA459692,,20,213,AGCTATGAGCACTGCAGGAG,, 5361,AA459692,,20,207,GAGCACTGCAGGAGACCGCC,, 30 5362,AA459692,,20,201,TGCAGGAGACCGCCTCAGGA,, 5363,AA459692,,20,195,AGACCGCCTCAGGATACTCT,, 5364,AA459692,,20,189,CCTCAGGATACTCTTGTTCT,, 5365,AA459692,,20,183,GATACTCTTGTTCTCTCTC, 5366,AA459692,,20,177,CTTGTTCTCTCTCTTGCTT,, 35 5367,AA459692,,20,171,CTCTCCTCTTGCTTTGCTGT,, 5368,AA459692,,20,165,TCTTGCTTTTGCT,, 5369,AA459692,,20,159,TTTGCTGTTTTTGTTCTCCA,, 5370,AA459692,,20,153,GTTTTTGTTCTCCAAATGAC,, 5371, AA459692, 20, 147, GTTCTCCAAATGACCATCAT, 40 5372,AA459692,,20,141,CAAATGACCATCATCGTCAG,, 5373,AA459692,,20,135,ACCATCATCGTCAGAAGACA,, 5374,AA459692,,20,129,ATCGTCAGAAGACAATTTTG,, 5375,AA459692,,20,123,AGAAGACAATTTTGACCACG,, 5376,AA459692,,20,117,CAATTTTGACCACGAAATGT,, 5377,AA459692,,20,111,TGACCACGAAATGTTTGTAG,, 5378,AA459692,,20,105,CGAAATGTTTGTAGTGAGAA,, 5379,AA459692,,20,99,GTTTGTAGTGAGAATATCAG,, 5380,AA459692,,20,93,AGTGAGAATATCAGGCAGGT,, 5381,AA459692,,20,87,AATATCAGGCAGGTGTCTGA,, 50 5382,AA459692,,20,81,AGGCAGGTGTCTGATATTCC,, 5383,AA459692,,20,75,GTGTCTGATATTCCATGGTT,, 5384,AA459692,,20,69,GATATTCCATGGTTTACAGT,, 5385,AA459692,,20,63,CCATGGTTTACAGTTTATTC,, 5386,AA459692,,20,57,TTTACAGTTTATTCCAGGCA,, 55 5387,AA459692,,20,51,GTTTATTCCAGGCAGGTTTA,, 5388,AA459692,,20,45,TCCAGGCAGGTTTATGTTTC,, 5389, AA459692, 20, 39, CAGGTTTATGTTTCCTTGCT, 5390,AA459692,,20,33,TATGTTTCCTTGCTAATACA,, 5391,AA459692,,20,27,TCCTTGCTAATACACGTACA,, 60 5392, AA459692, 20, 21, CTAATACACGTACAATTTTA,, 5393,AA459692,,20,15,CACGTACAATTTTACAACTA,, 5394,AA459692,,20,9,CAATTTTACAACTACTGTAT,, 5395,AA459692,,20,3,TACAACTACTGTATTAACAG,, (GENBANK ACCESSION NO. AA487557) 65 TITTCAAATTTTAATTAAAATCITTATTGAATAAAAATGTTTCAGACTAGGTAAGACTAAGAAAGCAGAATGTTTTACATCTCTAAA ATATCAACTGTGTACAACAAATGTACTCAAGTTTATAATGTCCCCAAAACCTTAAGACTAGAAAATCATCCCAAGAAAAAGGCCTAT AGGGGACATC (SEQ ID NO: 5396) 70

5397,AA487557,,20,338,GATGTCCCCTTTTTGAGACA,, 5398,AA487557,,20,332,CCCTTTTTGAGACACTAATT,, 5399,AA487557,,20,326,TTGAGACACTAATTTTTAAA,, 5400,AA487557,,20,320,CACTAATTTTTAAATACTTA,,

5401,AA487557,,20,314,TTTTTAAATACTTACTAGCT,, 5402,AA487557,,20,308,AATACTTACTAGCTCTGAAA,, 5403,AA487557,,20,302,TACTAGCTCTGAAATATATT,, 5404,AA487557,,20,296,CTCTGAAATATATTGATTTT,, 5405,AA487557,,20,290,AATATATTGATTTTATCAC,, 5406,AA487557,,20,284,TTGATTTTTATCACAGTATT,, 5407, AA487557, 20, 278, TTTATCACAGTATTCTCAGG, 5408,AA487557,,20,272,ACAGTATTCTCAGGGTGAAA,, 5409,AA487557,,20,266,TTCTCAGGGTGAAATTAAAC,, 10 5410,AA487557,,20,260,GGGTGAAATTAAACCAACTA,, 5411,AA487557,,20,254,AATTAAACCAACTATAGGCC,, 5412,AA487557,,20,248,ACCAACTATAGGCCTTTTTC,, 5413,AA487557,,20,242,TATAGGCCTTTTTCTTGGGA,, 5414,AA487557,,20,236,CCTTTTTCTTGGGATGATTT,, 15 5415,AA487557,,20,230,TCTTGGGATGATTTTCTAGT,, 5416,AA487557,,20,224,GATGATTTTCTAGTCTTAAG,, 5417,AA487557,,20,218,TTTCTAGTCTTAAGGTTTGG,, 5418,AA487557,,20,212,GTCTTAAGGTTTGGGGACAT,, 5419,AA487557,,20,206,AGGTTTGGGGACATTATAAA,, 5420,AA487557,,20,200,GGGGACATTATAAACTTGAG,, 5421,AA487557,,20,194,ATTATAAACTTGAGTACATT,, 5422,AA487557,,20,188,AACTTGAGTACATTTGTTGT,, 5423,AA487557,,20,182,AGTACATTTGTTGTACACAG,, 5424,AA487557,,20,176,TTTGTTGTACACAGTTGATA,, 25 5425,AA487557,,20,170,GTACACAGTTGATATTCCAA,, 5426,AA487557,,20,164,AGTTGATATTCCAAATTGTA,, 5427, AA487557, 20, 158, TATTCCAAATTGTATGGATG,, 5428,AA487557,,20,152,AAATTGTATGGATGGGAGGG,, 5429,AA487557,,20,146,TATGGATGGGAGGGAGAGGT,, 30 5430,AA487557,,20,140,TGGGAGGGAGAGGTGTCTTA,, 5431,AA487557,,20,134,GGAGAGGTGTCTTAAGCTGT,, 5432,AA487557,,20,128,GTGTCTTAAGCTGTAGGCTT,, 5433,AA487557,,20,122,TAAGCTGTAGGCTTTTCTTT,, 5434,AA487557,,20,116,GTAGGCTTTTCTTTGTACTG,, 5435,AA487557,,20,110,TTTTCTTTGTACTGCATTTA,, 5436,AA487557,,20,104,TTGTACTGCATTTATAGAGA,, 5437,AA487557,,20,98,TGCATTTATAGAGATTTAGC,, 5438,AA487557,,20,92,TATAGAGATTTAGCTTTAAT,, 5439,AA487557,,20,86,GATTTAGCTTTAATATTTTT,, 5440,AA487557,,20,80,GCTTTAATATTTTTTAGAGA,, 5441,AA487557,,20,74,ATATTTTTTAGAGATGTAAA,, 40 5442,AA487557,,20,68,TTTAGAGATGTAAAACATTC,, 5443,AA487557,,20,62,GATGTAAAACATTCTGCTTT,, 5444,AA487557,,20,56,AAACATTCTGCTTTCTTAGT,, 5445,AA487557,,20,50,TCTGCTTTCTTAGTCTTACC,, 5446,AA487557,,20,44,TTCTTAGTCTTACCTAGTCT,, 5447,AA487557,,20,38,GTCTTACCTAGTCTGAAACA,, 5448,AA487557,,20,32,CCTAGTCTGAAACATTTTTA,, 5449,AA487557,,20,26,CTGAAACATTTTTATTCAAT,, 5450,AA487557,,20,20,CATTTTTATTCAATAAAGAT,, 50 5451,AA487557,,20,14,TATTCAATAAAGATTTTAAT,, 5452,AA487557,,20,8,ATAAAGATTTTAATTAAAAT,, 5453,AA487557,,20,2,ATTTTAATTAAAATTTGAAA,, (GENBANK ACCESSION NO. T69168) CAATAANGTGCNTTTCAACTCAGCAATATACATATCANTGCNTTTCCTCATTANTTAATTGATCCATCAATAAATATACAAAAACCA 55 GAGGAAGGGTGTGCTCTGAAAAGTCAAAGTAACAATAACAGTGGTCATTGTACAGCACAAGANTGAACAATGGGCTATTCTTTGAA AACTCAAAACAAATGATTTACACAAAGACATATCTATAACATAAAGGTGAATGGACCATGTTATTCTTATTCTTANGTACATTTTTGC TTTTCCAGNTAAGTCAAATGTTTCCTCTCCTTACTCCTTGATATTNCAGTNTTGAATGAATGTTGGCTACANAATCTNTTCT (SEQ ID NO: 5454) 60 5455,T69168,,20,326,AGAANAGATTNTGTAGCCAA,,

5455,T69168,,20,326,AGAANAGATTNTGTAGCCAA, 5456,T69168,,20,320,GATTNTGTAGCCAACATTCA,, 5457,T69168,,20,314,GTAGCCAACATTCATTCAANA, 5458,T69168,,20,308,AACATTCATTCAANACTGNA

55 5459,T69168,,20,302,CATTCAANACTGNAATATCA,, 5460,T69168,,20,296,ANACTGNAATATCAGAGGAG,, 5461,T69168,,20,290,NAATATCAGAGGAGTAAGGA,, 5462,T69168,,20,284,CAGAGGAGTAAGGAGAGAGGG,

5463,769168,20,278,AGTAAGGAGAGAGAGAACAT,,
70 5464,T69168,,20,272,GAGAGAGGAAACATTTGACT,,
5465,T69168,,20,266,GGAAACATTTGACTTANCTG,,
5466,T69168,,20,260,ATTTGACTTANCTGGAAAAG,,
5467,T69168,,20,254,CTTANCTGGAAAAGCAAAAT,,
5468,769168,,20,242,AGCAAAAGCAAAATGTACNT,,
75 5469,T69168,,20,242,AGCAAAATGTACNTAAGAAT,,

5470,T69168,,20,236,ATGTACNTAAGAATAAGAAT,, 5471,T69168,,20,230,NTAAGAATAAGAATAACATG,, 5472,T69168,,20,224,ATAAGAATAACATGGTCCAT,, 5473,T69168,,20,218,ATAACATGGTCCATTCACCT,, 5474,T69168,,20,212,TGGTCCATTCACCTTTATGT, 5475,T69168,,20,206,ATTCACCTTTATGTTATAGA,, 5476,T69168,,20,200,CTTTATGTTATAGATATGTC,, 5477,T69168,,20,194,GTTATAGATATGTCTTTGTG,, 5478,T69168,,20,188,GATATGTCTTTGTGTAAATC,, 5479,T69168,,20,182,TCTTTGTGTAAATCATTTGT,, 5480,T69168,,20,176,TGTAAATCATTTGTTTTGAG,, 5481,T69168,,20,170,TCATTTGTTTTTGAGTTTTCA,, 5482,T69168,,20,164,GTTTTGAGTTTTCAAAGAAT,, 5483,T69168,,20,158,AGTTTTCAAAGAATAGCCCA,, 15 5484,T69168,,20,152,CAAAGAATAGCCCATTGTTC,, 5485,T69168,,20,146,ATAGCCCATTGTTCANTCTT,, 5486,T69168,,20,140,CATTGTTCANTCTTGTGCTG,, 5487,T69168,,20,134,TCANTCTTGTGCTGTACAAT,, 5488,T69168,,20,128,TTGTGCTGTACAATGACCAC,, 20 5489,T69168,,20,122,TGTACAATGACCACTGTTAT,, 5490,T69168,,20,116,ATGACCACTGTTATTGTTAC,, 5491,T69168,,20,110,ACTGTTATTGTTACTTTGAC,, 5492,T69168,,20,104,ATTGTTACTTTGACTTTTCA,, 5493,T69168,,20,98,ACTTTGACTTTTCAGAGCAC,, 5494,T69168,,20,92,ACTTTTCAGAGCACACCCTT,, 5495,T69168,,20,86,CAGAGCACACCCTTCCTCTG,, 5496,T69168,,20,80,ACACCCTTCCTCTGGTTTTT,, 5497,T69168,,20,74,TTCCTCTGGTTTTTGTATAT,, 5498,T69168,,20,68,TGGTTTTTGTATATTTATTG,, 30 5499,T69168,,20,62,TTGTATATTTATTGATGGAT,, 5500,T69168,,20,56,ATTTATTGATGGATCAATTA,, 5501,T69168,,20,50,TGATGGATCAATTAANTAAT,, 5502,T69168,,20,44,ATCAATTAANTAATGAGGAA,, 5503,T69168,,20,38,TAANTAATGAGGAAANGCAN,, 5504,T69168,,20,32,ATGAGGAAANGCANTGATAT,, 5505,T69168,,20,26,AAANGCANTGATATGTATAT,, 5506,T69168,,20,20,ANTGATATGTATATTGCTGA,, 5507,T69168,,20,14,ATGTATATTGCTGAGTTGAA,, 5508,T69168,,20,8,ATTGCTGAGTTGAAANGCAC,, 40 5509,T69168,,20,2,GAGTTGAAANGCACNTTATT,, (GENBANK ACCESSION NO. AI313387) ATCCCCATATAGAAAACCTTTTTAAAAAAATTATATATACAATGTCAACCATAGAAGCTTTAAGTACCTTAAATCATAAACTCTGTAG TTTGTATAGTAGTCTTATAAAAATATAGTTAGCTCTCAAATGTTTAATGCCACTTAAGTCAGTTAAAGTGCAGATTGTAAAGCATATT 45 AGGAAGGTGCCCAGAATACCAATGTCTCCTGCACTTAACACATTAATACAAAGTTTGCCAATTGTTTTGAATTTCCAAATGTATTCC CCTACATGGATTGAAGTCAGNCCCTCAAAAGCTTTTCGGGCTGGCAT (SEQ ID NO: 5510) 5511,AI313387,,20,464,ATGCCAGCCCGAAAAGCTTT,, 50 5512,AI313387,,20,458,GCCCGAAAAGCTTTTGAGGG,, 5513,AI313387,,20,452,AAAGCTTTTGAGGGNCTGAC,, 5514,AI313387,,20,446,TTTGAGGGNCTGACTTCAAT,, 5515,AI313387,,20,440,GGNCTGACTTCAATCCATGT... 5516,AI313387,,20,434,ACTTCAATCCATGTAGGAAA,, 5517,AI313387,,20,428,ATCCATGTAGGAAAGTAGAA,, 5518,AI313387,,20,422,GTAGGAAAGTAGAATGGAAG,, 5519,AI313387,,20,416,AAGTAGAATGGAAGGAAATT,, 5520,AI313387,,20,410,AATGGAAGGAAATTGGGTGC,, 60 5521,AI313387,,20,404,AGGAAATTGGGTGCATTTCT,, 5522,AI313387,,20,398,TTGGGTGCATTTCTAGGACT,, 5523,AI313387,,20,392,GCATTTCTAGGACTTTTCTA,, 5524,AI313387,20,386,CTAGGACTTTTCTAACATAT,, 5525,AI313387,,20,380,CTTTTCTAACATATGTCTAT,, 65 5526,AI313387,,20,374,TAACATATGTCTATAATATA,, 5527,AI313387,,20,368,ATGTCTATAATATAGTGTTT,, 5528,AI313387,,20,362,ATAATATAGTGTTTAGGTTC,, 5529,AI313387,,20,356,TAGTGTTTAGGTTCTTTTTT, 5530,AI313387,,20,350,TTAGGTTCTTTTTTTTCA,, 70 5531,AI313387,,20,344,TCTTTTTTTTTTCAGGAATA,, 5532,AI313387,,20,338,TTTTTTCAGGAATACATTTG,,

5533,AI313387,,20,332,CAGGAATACATTTGGAAATT,, 5534,AI313387,,20,326,TACATTTGGAAATTCAAAAC,, 5535,AI313387,,20,320,TGGAAATTCAAAACAATTGG,, 5536,AI313387,,20,314,TTCAAAACAATTGGCAAACT,,

5537,AI313387,,20,308,ACAATTGGCAAACTTTGTAT,, 5538,AI313387,,20,302,GGCAAACTTTGTATTAATGT,, 5539,AI313387,,20,296,CTTTGTATTAATGTGTTAAG,, 5540,AI313387,,20,290,ATTAATGTGTTAAGTGCAGG,, 5541,AI313387,,20,284,GTGTTAAGTGCAGGAGACAT,, 5542,Al313387,,20,278,AGTGCAGGAGACATTGGTAT,, 5543,AI313387,,20,272,GGAGACATTGGTATTCTGGG,, 5544,AI313387,,20,266,ATTGGTATTCTGGGCACCTT,, 5545,AI313387,,20,260,ATTCTGGGCACCTTCCTAAT,, 5546,AI313387,,20,254,GGCACCTTCCTAATATGCTT,, 5547,AI313387,,20,248,TTCCTAATATGCTTTACAAT,, 5548,AI313387,,20,242,ATATGCTTTACAATCTGCAC,, 5549,AI313387,,20,236,TTTACAATCTGCACTTTAAC,, 5550,AI313387,,20,230,ATCTGCACTTTAACTGACTT,, 15 5551,AI313387,,20,224,ACTTTAACTGACTTAAGTGG,, 5552,AI313387,,20,218,ACTGACTTAAGTGGCATTAA,, 5553,AI313387,,20,212,TTAAGTGGCATTAAACATTT,, 5554,AI313387,,20,206,GGCATTAAACATTTGAGAGC,, 5555,AI313387,,20,200,AAACATTTGAGAGCTAACTA,, 20 5556,AI313387,,20,194,TTGAGAGCTAACTATATTTT,, 5557,AI313387,,20,188,GCTAACTATATTTTTATAAG,, 5558,AI313387,,20,182,TATATTTTTATAAGACTACT,, 5559,AI313387,,20,176,TTTATAAGACTACTATACAA,, 5560,AI313387,,20,170,AGACTACTATACAAACTACA,, 5561,AI313387,,20,164,CTATACAAACTACAGAGTTT,, 5562,AI313387,,20,158,AAACTACAGAGTTTATGATT,, 5563,AI313387,,20,152,CAGAGTTTATGATTTAAGGT,, 5564,AI313387,,20,146,TTATGATTTAAGGTACTTAA,, 5565,AI313387,,20,140,TTTAAGGTACTTAAAGCTTC,, 5566,AI313387,,20,134,GTACTTAAAGCTTCTATGGT,, 5567,AI313387,,20,128,AAAGCTTCTATGGTTGACAT,, 30 5568,AI313387,,20,122,TCTATGGTTGACATTGTATA,, 5569,AI313387,,20,116,GTTGACATTGTATATAAT,, 5570,AI313387,,20,110,ATTGTATATATAATTTTTTA,, 5571,AI313387,,20,104,TATATAATTTTTTAAAAAGG,, 5572,Al313387,,20,98,ATTTTTTAAAAAGGTTTTCT,, 5573,AI313387,,20,92,TAAAAAGGTTTTCTATATGG,, 5574,Al313387,,20,86,GGTTTTCTATATGGGGATTT,, 5575,AI313387,,20,80,CTATATGGGGATTTTCTATT, 5576,AI313387,,20,74,GGGGATTTTCTATTTATGTA,, 40 5577,AI313387,,20,68,TTTCTATTTATGTAGGTAAT,, 5578,AI313387,,20,62,TTTATGTAGGTAATATTGTT,, 5579,AI313387,,20,56,TAGGTAATATTGTTCTATTT,, 5580,AI313387,,20,50,ATATTGTTCTATTTGTATAT, 45 5581,AI313387,,20,44,TTCTATTTGTATATATTGAG,, 5582,AI313387,,20,38,TTGTATATATTGAGATAATT,, 5583,AI313387,,20,32,ATATTGAGATAATTTATTTA,, 5584,Al313387,,20,26,AGATAATTTATTTAATATAC,, 5585,Al313387,,20,20,TTTATTTAATATACTTTAAA,, 50 5586,AI313387,,20,14,TAATATACTTTAAATAAAGG,, 5587,AI313387,,20,8,ACTTTAAATAAAGGTGACTG,, 5588,AI313387,,20,2,AATAAAGGTGACTGGGAATT,, (GENBANK ACCESSION NO. AA909635) GGGTATTTTTACATATTTATTAAAACÁAGTTTCCTGAGAAGTTTGACTAGGCTATGTTGTTGTTGTTAACCTAGTTTGCTTAAAATGTACG AAAATGCAATCAAACTTACATATCTTTTAAATATTCGAAAGTCAGATTTTGTTCTGATTGCCCTATCCAATTAGGGCAAATTAGTGA GGGTTTTTTTGTTTTTGTTTTTCTAACAATAGTCTGAAACATAAAATTAAGTTTGTGTTTAAAAACAATTCTTGAAACTGTCA TAAACATATGATATCTATTGATTAAACAGTAATAAAAAGACACAAGGTACAAGAATTGAGGCTTGGCTGTTCTGGCTGTATACTAAC TTCATAT (SEQ ID NO: 5589) 5590,AA909635,,20,339,ATATGAAGTTAGTATACAGC,, 5591,AA909635,,20,333,AGTTAGTATACAGCCAGAAC,, 5592,AA909635,,20,327,TATACAGCCAGAACAGCCAA,, 5593,AA909635,,20,321,GCCAGAACAGCCAAGCCTCA,, 65 5594,AA909635,,20,315,ACAGCCAAGCCTCAATTCTT,, 5595,AA909635,,20,309,AAGCCTCAATTCTTGTACCT,, 5596,AA909635,,20,303,CAATTCTTGTACCTTGTGTC,, 5597,AA909635,,20,297,TTGTACCTTGTGTCTTTTTA,, 5598,AA909635,,20,291,CTTGTGTCTTTTTATTACTG,, 5599,AA909635,,20,285,TCTTTTTATTACTGTTTAAT,, 5600,AA909635,,20,279,TATTACTGTTTAATCAATAG,, 5601,AA909635,,20,273,TGTTTAATCAATAGATATCA,, 5602,AA909635,,20,267,ATCAATAGATATCATATGTT,, 5603,AA909635,,20,261,AGATATCATATGTTTATGAC,,

75

5604,AA909635,,20,255,CATATGTTTATGACAGTTTC,,

5605,AA909635,,20,249,TTTATGACAGTTTCAAGAAT,, 5606,AA909635,,20,243,ACAGTTTCAAGAATTGTTTT,, 5607,AA909635,,20,237,TCAAGAATTGTTTTTAAACA,, 5608,AA909635,,20,231,ATTGTTTTTAAACACAAACT,, 5609,AA909635,,20,225,TTTAAACACAAACTTAATTT,, 5610,AA909635,,20,219,CACAAACTTAATTTTATGTT,, 5611,AA909635,,20,213,CTTAATTTTATGTTTCAGAC,, 5612,AA909635,,20,207,TTTATGTTTCAGACTATTGT,, 5613,AA909635,,20,201,TTTCAGACTATTGTTAGAAA,, 10 5614,AA909635,,20,195,ACTATTGTTAGAAAAACAAA,, 5615,AA909635,,20,189,GTTAGAAAAACAAAACAAAA,, 5616,AA909635,,20,183,AAAACAAAACAAAAAAAAAAAAAA,, 5617,AA909635,,20,177,AAACAAAAAAAAAAAAACC,,, 5618,AA909635,,20,171,AAAACAAAAAAACCCTCACT,, 5619,AA909635,,20,165,AAAAAACCCTCACTAATTTG,, 5620,AA909635,,20,159,CCCTCACTAATTTGCCCTAA,, 5621,AA909635,,20,153,CTAATTTGCCCTAATTGGAT,, 5622,AA909635,,20,147,TGCCCTAATTGGATAGGGCA,, 5623,AA909635,,20,141,AATTGGATAGGGCAATCAGA,, 5624,AA909635,,20,135,ATAGGGCAATCAGAACAAAA,, 5625,AA909635,,20,129,CAATCAGAACAAAATCTGAC,, 5626,AA909635,,20,123,GAACAAAATCTGACTTTCGA,, 5627,AA909635,,20,117,AATCTGACTTTCGAATATTT,, 5628,AA909635,,20,111,ACTTTCGAATATTTAAAAGA,, 25 5629,AA909635,,20,105,GAATATTTAAAAGATATGTA,, 5630,AA909635,,20,99,TTAAAAGATATGTAAGTTTG,, 5631,AA909635,,20,93,GATATGTAAGTTTGATTGCA,, 5632,AA909635,,20,87,TAAGTTTGATTGCATTTTCG,, 5633,AA909635,,20,81,TGATTGCATTTTCGTACATT,, 30 5634,AA909635,,20,75,CATTTTCGTACATTTTAAGC,, 5635,AA909635,,20,69,CGTACATTTTAAGCAAACTA,, 5636,AA909635,,20,63,TTTTAAGCAAACTAGGTTAA,, 5637,AA909635,,20,57,GCAAACTAGGTTAACAACAA,, 5638,AA909635,,20,51,TAGGTTAACAACAACATAGC,, 35 5639,AA909635,,20,45,AACAACAACATAGCCTAGTC,, 5640,AA909635,,20,39,AACATAGCCTAGTCAAACTT,, 5641,AA909635,,20,33,GCCTAGTCAAACTTCTCAGG,, 5642,AA909635,,20,27,TCAAACTTCTCAGGAAACTT,, 5643,AA909635,,20,21,TTCTCAGGAAACTTGTTTTA,, 40 5644,AA909635,,20,15,GGAAACTTGTTTTAATAAAT,, 5645,AA909635,,20,9,TTGTTTTAATAAATATGTAA,, 5646,AA909635,,20,3,TAATAAATATGTAAAAATAC,, (GENBANK ACCESSION NO. R00103) CCTGCCAGGGTCCGCGGCGGCCCCTCCTCGACAGCTGAGGGGGCAGCCTCTTCAGCCACCGGGGCTGGGGTCTGGGGNTGGCTC GGGCTGGCCTCAGTAGGGGCCTCAGTGGGGCTTGGGGGTCTATGGGCTTCCTCCTCCTCCTCTAACATTGGGAAGCCGAGTGCTTC TGAAGGTTCATCAGGGGACAGATCGGGGAGAGTTGGCTTAAAGGTGGCAGCATCACTGTCATCTCCAGTAGTCGGCTCCGGCACAA GGTCTAGTNGGTNAGGGTNAGAGATGGGATTAAGGGTTCCTNCCCAGATCTCAAAGGGCAGCTTNAGATNGGGGAGCCCCACACAC GAAACTTCCATTTTATTTAT (SEQ ID NO: 5647) 50 5648,R00103,,20,346,ATAAAATAAAATGGAAGTTT,, 5649,R00103,,20,340,TAAAATGGAAGTTTCGTGTG,, 5650,R00103,,20,334,GGAAGTTTCGTGTGTGGGGC,, 5651,R00103,,20,328,TTCGTGTGTGGGGCTCCCCN,, 55 5652,R00103,,20,322,TGTGGGGCTCCCCNATCTNA,, 5653,R00103,,20,316,GCTCCCCNATCTNAAGCTGC,, 5654,R00103,,20,310,CNATCTNAAGCTGCCCTTTG,, 5655,R00103,20,304,NAAGCTGCCCTTTGAGATCT,, 5656,R00103,20,298,GCCCTTTGAGATCTGGGNAG,, 60 5657,R00103,,20,292,TGAGATCTGGGNAGGAACCC,, 5658,R00103,,20,286,CTGGGNAGGAACCCTTAATC,, 5659,R00103,,20,280,AGGAACCCTTAATCCCATCT,, 5660,R00103,,20,274,CCTTAATCCCATCTCTNACC,, 5661,R00103,,20,268,TCCCATCTCTNACCTNACCN,, 65 5662,R00103,,20,262,CTCTNACCTNACCNACTAGA,, 5663,R00103,,20,256,CCTNACCNACTAGACCTTGT,, 5664,R00103,,20,250,CNACTAGACCTTGTGCCGGA,, 5665,R00103,,20,244,GACCTTGTGCCGGAGCCGAC,, 5666,R00103,,20,238,GTGCCGGAGCCGACTACTGG,, 70 5667,R00103,,20,232,GAGCCGACTACTGGAGATGA,, 5668,R00103,,20,226,ACTACTGGAGATGACAGTGA,,

5669,R00103,,20,220,GGAGATGACAGTGATGCTGC,, 5670,R00103,,20,214,GACAGTGATGCTGCCACCTT,, 5671,R00103,,20,208,GATGCTGCCACCTTTAAGCC,,

5672,R00103,,20,202,GCCACCTTTAAGCCAACTCT,,

PCT/US02/13135

WO 02/085308 5673,R00103,,20,196,TTTAAGCCAACTCTCCCCGA,, 5674,R00103,,20,190,CCAACTCTCCCGATCTGTC,, 5675,R00103,,20,184,CTCCCCGATCTGTCCCCTGA,, 5676,R00103,,20,178,GATCTGTCCCCTGATGAACC,, 5677,R00103,,20,172,TCCCCTGATGAACCTTCAGA,, 5678,R00103,,20,166,GATGAACCTTCAGAAGCACT,, 5679,R00103,,20,160,CCTTCAGAAGCACTCGGCTT,, 5680,R00103,,20,154,GAAGCACTCGGCTTCCCAAT,, 5681,R00103,,20,148,CTCGGCTTCCCAATGTTAGA,, 10 5682,R00103,,20,142,TTCCCAATGTTAGAGAAGGA,, 5683,R00103,,20,136,ATGTTAGAGAAGGAGGAGGA,, 5684,R00103,,20,130,GAGAAGGAGGAGGAAGCCCA,, 5685,R00103,,20,124,GAGGAGGAAGCCCATAGACC,, 5686,R00103,,20,118,GAAGCCCATAGACCCCCAAG,, 15 5687,R00103,,20,112,CATAGACCCCCAAGCCCCAC,, 5688,R00103,,20,106,CCCCCAAGCCCCACTGAGGC,, 5689,R00103,,20,100,AGCCCCACTGAGGCCCCTAC,, 5690,R00103,,20,94,ACTGAGGCCCCTACTGAGGC,, 5691,R00103,,20,88,GCCCCTACTGAGGCCAGCCC, 5692,R00103,,20,82,ACTGAGGCCAGCCCCGAGCC,,5693,R00103,,20,76,GCCAGCCCGAGCCANCCCC, 5694,R00103,,20,70,CCCGAGCCANCCCCAGACCC,, 5695,R00103,,20,64,CCANCCCAGACCCCAGCCC,, 5696,R00103,,20,58,CCAGACCCCAGCCCCGGTGG,, 25 5697,R00103,,20,52,CCCAGCCCCGGTGGCTGAAG,, 5698,R00103,,20,46,CCCGGTGGCTGAAGAGGCTG,, 5699,R00103,,20,40,GGCTGAAGAGGCTGCCCCCT,, 5700,R00103,,20,34,AGAGGCTGCCCCTCAGCTG,, 5701,R00103,,20,28,TGCCCCCTCAGCTGTCGAGG, 30 5702,R00103,,20,22,CTCAGCTGTCGAGGAGGGGG, 5703,R00103,,20,16,TGTCGAGGAGGGGCCGCCG,, 5704,R00103,,20,10,GGAGGGGGCCGCCGCGGACC,, 5705,R00103,,20,4,GGCCGCCGCGGACCCTGGCA,, (GENBANK ACCESSION NO. N35316) 35 AACATACTTCCTATCAAAACCTCTAGCTG 40 (SEQ ID NO: 5706) 5707,N35316,,20,361,CAGCTAGAGGTTTTGATAGG,, 5708,N35316,,20,355,GAGGTTTTGATAGGAAGTAT,, 5709,N35316,,20,349,TTGATAGGAAGTATGTTTGT,, 5710,N35316,,20,343,GGAAGTATGTTTGTTTCTTA,,

GATTTAGGAAACTTAAAAAAGTTCTTTAAAAAATTCTAATAGGATTTACCCTATTTTACTGGCCAAGTGTAAAAAATAAACCCTAA ATGTGCCTTTCTCTAATTTTCCTTGTACAATCTTATTGACATTTTTTATAGCTAATCCATATATGCATAGAACCGAGGCTATTATTTTG CTGCAACAACTTTATAAAAAGGTTATGAAGTTTAAAAAGTATATTTTCGTATCAAGAGTACTTAATATTTGTAAACACTAAGAAACA

75

45 5711,N35316,,20,337,ATGTTTGTTTCTTAGTGTTT, 5712,N35316,,20,331,GTTTCTTAGTGTTTACAAAT,, 5713,N35316,,20,325,TAGTGTTTACAAATATTAAG,, 5714,N35316,,20,319,TTACAAATATTAAGTACTCT,, 50 5715,N35316,,20,313,ATATTAAGTACTCTTGATAC,, 5716,N35316,,20,307,AGTACTCTTGATACGAAAAT,, 5717,N35316,,20,301,CTTGATACGAAAATATACTT,, 5718,N35316,,20,295,ACGAAAATATACTTTTAAAC,, 5719,N35316,,20,289,ATATACTTTTAAACTTCATA,, 55 5720,N35316,,20,283,TTTTAAACTTCATAACCTTT,, 5721,N35316,,20,277,ACTTCATAACCTTTTTATAA,, 5722,N35316,,20,271,TAACCTTTTTATAAAAGTTG,, 5723,N35316,,20,265,TTTTATAAAAGTTGTTGCAG,, 5724,N35316,,20,259,AAAAGTTGTTGCAGCAAAAT,, 5725,N35316,,20,253,TGTTGCAGCAAAATAATAGC,, 60 5726,N35316,,20,247,AGCAAAATAATAGCCTCGGT,, 5727,N35316,,20,241,ATAATAGCCTCGGTTCTATG,, 5728,N35316,,20,235,GCCTCGGTTCTATGCATATA,, 5729,N35316,,20,229,GTTCTATGCATATATGGATT,, 5730,N35316,,20,223,TGCATATATGGATTAGCTAT,, 5731,N35316,,20,217,TATGGATTAGCTATAAAAAA,, 5732,N35316,,20,211,TTAGCTATAAAAAATGTCAA,, 5733,N35316,,20,205,ATAAAAAATGTCAATAAGAT,, 5734,N35316,,20,199,AATGTCAATAAGATTGTACA,, 5735,N35316,,20,193,AATAAGATTGTACAAGGAAA,, 5736,N35316,,20,187,ATTGTACAAGGAAAATTAGA,, 5737,N35316,,20,181,CAAGGAAAATTAGAGAAAGG,,

5738,N35316,,20,175,AAATTAGAGAAAGGCACATT,, 5739,N35316,,20,169,GAGAAAGGCACATTTAGGGT,,

5740,N35316,,20,163,GGCACATTTAGGGTTTATTT,,

5741,N35316,,20,157,TTTAGGGTTTATTTTTTACA,, 5742,N35316,,20,151,GTTTATTTTTTACACTTGGC,, 5743,N35316,,20,145,TTTTTACACTTGGCCAGTAA,, 5744,N35316,,20,139,CACTTGGCCAGTAAAATAGG,,

- 5 5745,N35316,,20,133,GCCAGTAAAATAGGGTAAAT, 5746,N35316,,20,127,AAAATAGGGTAAATCCTATT,, 5747,N35316,,20,121,GGGTAAATCCTATTAGAATT,, 5748,N35316,,20,115,ATCCTATTAGAATTTTTAA, 5749,N35316,,20,109,TTAGAATTTTTTAAAGAACT,
- 10 5750,N35316,20,103,TTTTTTAAAGAACTITTTTT, 5751,N35316,20,97,AAAGAACTITTTTTAAGTTT, 5752,N35316,20,91,CTTTTTTTAAGTTTCCTAAA, 5753,N35316,20,85,TTAAGTTTCCTAAATCTGTG, 5754,N35316,20,79,TTCCTAAATCTGTGTGTAA
- 15 5755,N35316,,20,73,AATCTGTGTGTGTATTGTGA,, 5756,N35316,,20,67,TGTGTGTATTGTGAAGTGGT,, 5757,N35316,,20,61,TATTGTGAAGTGGTATAAGA,, 5758,N35316,,20,55,GAAGTGGTATAAGAAATGAC,
- 5759,N35316,,20,49,GTATAAGAAATGACTTTGAA,, 20 5760,N35316,,20,43,GAAATGACTTTGAACCACTT,, 5761,N35316,,20,37,ACTTTGAACCACTTTGCAAT,, 5762,N35316,,20,31,AACCACTTTGCAATTGTAGA,, 5763,N35316,,20,25,TTTGCAATTGTAGATTCCCA, 5764,N35316,,20,19,ATTGTAGATTCCCAACAATA,
- 25 5765,N35316,,20,13,GATTCCCAACAATAAAATTG,, 5766,N35316,,20,7,CAACAATAAAATTGAAGATA,, 5767,N35316,,20,1,TAAAATTGAAGATAAGCTCN,, (GENBANK ACCESSION NO. AA293300)
- 35 5769,AA293300,,20,326,GAGAGACAGCGCGAGCTCA,, 5770,AA293300,,20,320,ACAGCGCGAGCTCAGGAGAG,, 5771,AA293300,,20,314,CGAGCTCAGGAGAGATTTCG,, 5772,AA293300,,20,308,CAGGAGAGATTTCGTGACAA,, 5773,AA293300,,20,302,AGATTTCGTGACAATGTACG,,
- 40 5774,AA293300,20,296,CGTGACAATGTACGCCTTTC,, 5775,AA293300,20,290,AATGTACGCCTTTCCTCAG,, 5776,AA293300,20,284,CGCCTTTCCCTCAGAATTCA,, 5777,AA293300,20,278,TCCCTCAGAATTCAGGGAAG,, 5778,AA293300,20,272,AGAATTCAGGGAAGAGCTG,,
- 45 5779,AA293300,,20,266,CAGGGAAGAGACTGTCGCCT,, 5780,AA293300,,20,260,AGAGACTGTCGCCTGCCTTC,, 5781,AA293300,,20,254,TGTCGCCTGCCTTCCTCCGT,, 5782,AA293300,,20,248,CTGCCTTCCTCCGTTGTTGC,, 5783,AA293300,,20,242,TCCTCCGTTGTTGCGTGAGA,
- 50 5784,AA293300,,20,236,GTTGTTGCGTGAGAACCCGT,, 5785,AA293300,,20,230,GCGTGAGAACCCGTGTGCCC,, 5786,AA293300,,20,224,GAACCCGTGTGCCCCTTCCC,, 5787,AA293300,,20,218,GTGTGCCCCTTCCCACCATA,, 5788,AA293300,,20,212,CCCTTCCCACCATATCCACC,
- 55 5789,AA293300,,20,206,CCACCATATCCACCCTCGCT., 5790,AA293300,,20,200,TATCCACCCTCGCTCCATCT., 5791,AA293300,,20,194,CCCTCGCTCCATCTTTGAAC., 5792,AA293300,,20,188,CTCCATCTTTGAACTCAAACAC, 5793,AA293300,,20,182,CTTTGAACTCAAACACGAGG.,
- 60 \$794,AA293300,20,176,ACTCAAACACGAGGAACTAA,, \$795,AA293300,20,170,ACACGAGGAACTAACTGCAC,, \$796,AA293300,20,164,GGAACTAACTGCACCCTGGT,, \$797,AA293300,20,158,AACTGCACCCTGGTCCTCTC,
- 5798,AA293300,,20,152,ACCCTGGTCCTCCCCAGT, 5799,AA293300,,20,146,GTCCTCCCCAGTCCCCAG, 5800,AA293300,,20,140,TCCCAGTCCCCAGTTCACC, 5801,AA293300,,20,134,GTCCCAGTTCACCCTCCAT, 5802,AA293300,,20,128,AGTTCACCCTCCATCCCTCA, 5803,AA293300,,20,122,CCCTCCATCCCTCACCTTCC,
- 70 5804,AA293300,,20,116,ATCCCTCACCTTCCTCACT,,
 5805,AA293300,,20,110,CACCTTCCTCCACTCTAAGG,,
 5806,AA293300,,20,104,CCTCCACTCTAAGGGATATC,,
 5807,AA293300,,20,98,CTCTAAGGGATATCAACACT,,
 5808,AA293300,,20,92,GGGATATCAACACTGCCCAG,,
 75 5809,AA293300,,20,86,TCAACACTGCCCAGCACAGG,

5810,AA293300,,20,80,CTGCCCAGCACAGGGCCCT,, 5811,AA293300,,20,74,AGCACAGGGGCCCTGAATTT,, 5812,AA293300,,20,68,GGGGCCCTGAATTTATGTGG,, 5813,AA293300,,20,62,CTGAATTTATGTGGTTTTTA,, 5814,AA293300,,20,56,TTATGTGGTTTTTATACATT,, 5815,AA293300,,20,50,GGTTTTTATACATTTTTTAA,, 5816,AA293300,,20,44,TATACATTTTTTAATAAGAT,, 5817,AA293300,,20,38,TTTTTTAATAAGATGCACTT,, 5818,AA293300,,20,32,AATAAGATGCACTTTATGTC,, 10 5819,AA293300,,20,26,ATGCACTTTATGTCATTTTT, 5820,AA293300,,20,20,TTTATGTCATTTTTTAATAA,, 5821,AA293300,,20,14,TCATTTTTTAATAAAGTCTG,, 5822,AA293300,,20,8,TTTAATAAAGTCTGAAGAAT,, 5823,AA293300,,20,2,AAAGTCTGAAGAATTACTGT, 15 (GENBANK ACCESSION NO. AA278764) TTTTTTTTTTTTTTTTTTTTTGACAGGAACTGTTTTTATTCCAACCACCTCACCTCCTTAGAATGGGAGCGAACAGTGAAATAGTGCA TTTATCTTAAAAGTGAAATAATTCCAGGATGGTAGGGCGAGACCCTGTGATGGGTGAATTTACCTCACTTGATACCAAGGGCCCTTA GTCACTTTCTATGTGATGGCTGTCTCCCTCTCACCAGACTGCATAGCGGTTGCAGATGAACATTTGGCACCTAGATGGGGGTCAAGG 20 AGCTGGGGCTGTGATTCAGGGAAGATGCTGAGGGGGACTGGGAGTCTCTGTTTGAATCTTGAAGCAAGGGGTGA (SEQ ID NO: 5824) 5825,AA278764,,20,404,TCACCCCTTGCTTCAAGATT,, 5826,AA278764,,20,398,CTTGCTTCAAGATTCAAACA,, 25 5827, AA278764, 20,392, TCAAGATTCAAACAGAGACT, 5828,AA278764,,20,386,TTCAAACAGAGACTCCCAGT,, 5829,AA278764,,20,380,CAGAGACTCCCAGTCCCCCT,, 5830,AA278764,,20,374,CTCCCAGTCCCCTCAGCAT,, 5831,AA278764,,20,368,GTCCCCCTCAGCATCTTCCC,, 5832,AA278764,,20,362,CTCAGCATCTTCCCTGAATC,, 5833,AA278764,,20,356,ATCTTCCCTGAATCACAGCC,, 5834,AA278764,,20,350,CCTGAATCACAGCCCCAGCT,, 5835,AA278764,,20,344,TCACAGCCCCAGCTCCTTGA,, 5836,AA278764,,20,338,CCCCAGCTCCTTGACCCCCA,, 5837,AA278764,,20,332,CTCCTTGACCCCCATCTAGG,, 35 5838,AA278764,,20,326,GACCCCCATCTAGGTGCCAA,, 5839,AA278764,,20,320,CATCTAGGTGCCAAATGTTC,, 5840, AA278764, 20, 314, GGTGCCAAATGTTCATCTGC, 5841,AA278764,,20,308,AAATGTTCATCTGCAACCGC,, 40 5842,AA278764,,20,302,TCATCTGCAACCGCTATGCA,, 5843,AA278764,,20,296,GCAACCGCTATGCAGTCTGG,, 5844,AA278764,,20,290,GCTATGCAGTCTGGTGAGAG,, 5845,AA278764,,20,284,CAGTCTGGTGAGAGGGAGAC,, 5846,AA278764,,20,278,GGTGAGAGGGAGACAGCCAT,, 45 5847,AA278764,,20,272,AGGGAGACAGCCATCACATA,, 5848, AA278764, 20, 266, ACAGCCATCACATAGAAAGT, 5849,AA278764,,20,260,ATCACATAGAAAGTGACCGT,, 5850,AA278764,,20,254,TAGAAAGTGACCGTACGGGT,, 5851,AA278764,,20,248,GTGACCGTACGGGTTTTTAA,, 50 5852,AA278764,,20,242,GTACGGGTTTTTAATCACTG,, 5853,AA278764,,20,236,GTTTTTAATCACTGCTGGGT,, 5854,AA278764,,20,230,AATCACTGCTGGGTGGGGTG,, 5855,AA278764,,20,224,TGCTGGGTGGGGTGGGGGTA,, 5856,AA278764,,20,218,GTGGGGTGGGGGTAGGGGGA,, 55 5857,AA278764,,20,212,TGGGGGTAGGGGGATTGTCC,, 5858,AA278764,,20,206,TAGGGGGATTGTCCTGGCTT,, 5859,AA278764,,20,200,GATTGTCCTGGCTTTGTCGA,, 5860,AA278764,,20,194,CCTGGCTTTGTCGACAAAGT,, 5861,AA278764,,20,188,TTTGTCGACAAAGTCCCACT., 5862,AA278764,,20,182,GACAAAGTCCCACTTCCCCG,, 5863,AA278764,,20,176,GTCCCACTTCCCCGAGTATT,, 5864,AA278764,,20,170,CTTCCCCGAGTATTAAGGGC,, 5865, AA278764, 20,164, CGAGTATTAAGGGCCCTTGG, 5866,AA278764,,20,158,TTAAGGGCCCTTGGTATCAA,, 65 5867,AA278764,,20,152,GCCCTTGGTATCAAGTGAGG,, 5868,AA278764,,20,146,GGTATCAAGTGAGGTAAATT,, 5869,AA278764,,20,140,AAGTGAGGTAAATTCACCCA,, 5870,AA278764,,20,134,GGTAAATTCACCCATCACAG,, 5871,AA278764,,20,128,TTCACCCATCACAGGGTCTC,, 70 5872,AA278764,,20,122,CATCACAGGGTCTCGCCCTA,, 5873,AA278764,,20,116,AGGGTCTCGCCCTACCATCC,, 5874,AA278764,,20,110,TCGCCCTACCATCCTGGAAT,,

5875,AA278764,20,104,TACCATCCTGGAATTATTTC,, 5876,AA278764,20,98,CCTGGAATTATTTCACTTTT,, 5877,AA278764,20,92,ATTATTTCACTTTTAAGATA,

5878,AA278764,,20,86,TCACTTTTAAGATAAATGCA,, 5879,AA278764,,20,80,TTAAGATAAATGCACTATTT,, 5880,AA278764,,20,74,TAAATGCACTATTTCACTGT., 5881,AA278764,,20,68,CACTATTTCACTGTTCGCCT,, 5882, AA278764, 20,62, TTCACTGTTCGCCTCCCATT, 5883,AA278764,,20,56,GTTCGCCTCCCATTCTAAGG,, 5884,AA278764,,20,50,CTCCCATTCTAAGGAGGTGA,, 5885,AA278764,,20,44,TTCTAAGGAGGTGAGGTGGT,, 5886,AA278764,,20,38,GGAGGTGAGGTGGTTGGAAT,, 5887, AA278764, 20,32, GAGGTGGTTGGAATAAAAC,, 5888,AA278764,,20,26,GTTGGAATAAAAACAGTTCC,, 5889,AA278764,,20,20,ATAAAAACAGTTCCTGTCAA,, 5890,AA278764,,20,14,ACAGTTCCTGTCAAAAAAAA,, 5891,AA278764,,20,8,CCTGTCAAAAAAAAAAAAAA,, 5892,AA278764,,20,2,AAAAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AA678160) ACCAATCITAATTTAGCATTTTTTTAATGGGGCCACAGTCTTTTTCTCTATTATTGTAAATGTTTCTTTTTTAAAGATTTGCCCTAGT ACAATCCAAGTCCGCTTCCAAATAAAGTAAAAGTATTAGTATGAAAAAACCCTGGCTACAATAAATTAGAGACCATTTAATCCTGC AATCTTGGTCAAGTTCATATTTCCACCATAGCACATTAG 20 (SEQ ID NO: 5893) 5894,AA678160,,20,195,CTAATGTGCTATGGTGGAAA,, 5895,AA678160,,20,189,TGCTATGGTGGAAATATGAA,, 5896,AA678160,,20,183,GGTGGAAATATGAACTTGAC,, 5897,AA678160,,20,177,AATATGAACTTGACCAAGAT,, 5898,AA678160,,20,171,AACTTGACCAAGATTGCAGG,, 5899,AA678160,,20,165,ACCAAGATTGCAGGATTAAA,, 5900,AA678160,,20,159,ATTGCAGGATTAAATGGTCT,, 5901,AA678160,,20,153,GGATTAAATGGTCTCTAATT,, 5902,AA678160,,20,147,AATGGTCTCTAATTTATTGT, 5903,AA678160,,20,141,CTCTAATTTATTGTAGCCAG,, 5904,AA678160,,20,135,TTTATTGTAGCCAGGGTTTT,, 5905,AA678160,,20,129,GTAGCCAGGGTTTTTCATAC,, 5906,AA678160,,20,123,AGGGTTTTTCATACTAATAC,, 5907,AA678160,,20,117,TTTCATACTAATACTTTTTA,, 5908,AA678160,,20,111,ACTAATACTTTTTACTTTAT,, 5909,AA678160,,20,105,ACTTTTTACTTTATTTGGAA,, 5910,AA678160,,20,99,TACTTTATTTGGAAGCGGAC,, 5911,AA678160,,20,93,ATTTGGAAGCGGACTTGGAT,, 40 5912,AA678160,,20,87,AAGCGGACTTGGATTGTACT,, 5913,AA678160,,20,81,ACTTGGATTGTACTAGGGCA,, 5914,AA678160,,20,75,ATTGTACTAGGGCAAATCTT,, 5915,AA678160,,20,69,CTAGGGCAAATCTTTAAAAA... 5916,AA678160,,20,63,CAAATCTTTAAAAAAAGAAA,, 45 5917,AA678160,,20,57,TITAAAAAAAGAAACATTTA,, 5918,AA678160,,20,51,AAAAGAAACATTTACAATAA,, 5919,AA678160,,20,45,AACATTTACAATAATAGAGA,, 5920,AA678160,,20,39,TACAATAATAGAGAAAAAGA,, 5921,AA678160,,20,33,AATAGAGAAAAAGACTGTGG,, 50 5922, AA678160, 20,27, GAAAAAGACTGTGGCCCCAT, 5923,AA678160,,20,21,GACTGTGGCCCCATTAAAAA,, 5924,AA678160,,20,15,GGCCCCATTAAAAAAATGCT,, 5925,AA678160,,20,9,ATTAAAAAAAATGCTAAATTA,, 5926,AA678160,,20,3,AAAATGCTAAATTAAGATTG,, (GENBANK ACCESSION NO. R42770) ATACTCAGTGTATACATTTTGCAGATTAAATTTAAATACGTATTTTGGACCAGTTATTTGATANAATTCCTTCAGACGTTGTTTTTCA AACCATCATCATAAATTTAACATATCTGCATTTTCGGTAAGTNCTTCAAACCCCTAGTCAAGGGGAAANCTGTAAATCTAATGAATA AGGANCTTCTCAGGGCAATTAGGACAATATTTNCAAACNGGGCTGCTTGACTCANGGGTGACTTCCTTAAATCCGNGGTTTCTCAGG (SEQ ID NO: 5927) 5928,R42770,,20,411,CCCCCTAAAACCCCGNTGT,, 5929,R42770,,20,405,TAAAACCCCGNTGTAGGGAC,, 5930,R42770,,20,399,CCCGNTGTAGGGACAGCCCC,, 5931,R42770,,20,393,GTAGGGACAGCCCCCCATA,, 5932,R42770,,20,387,ACAGCCCCCCATAACAAN,, 5933,R42770,,20,381,CCCCCATAACAAANAATTAC,, 5934,R42770,,20,375,TAACAAANAATTACCCCGCT,, 5935,R42770,,20,369,ANAATTACCCCGCTCAAAAC,, 5936,R42770,,20,363,ACCCCGCTCAAAACATCCCA,, 5937,R42770,,20,357,CTCAAAACATCCCACAGTGN,, 5938,R42770,,20,351,ACATCCCACAGTGNCGGGGC,, 5939,R42770,,20,345,CACAGTGNCGGGGCCTGAGA,,

5940,R42770,,20,339,GNCGGGGCCTGAGAAACCNC,,

5941,R42770,,20,333,GCCTGAGAAACCNCGGATTT,, 5942,R42770,,20,327,GAAACCNCGGATTTAAGGAA,, 5943,R42770,,20,321,NCGGATTTAAGGAAGTCACC,, 5944,R42770,,20,315,TTAAGGAAGTCACCCNTGAG,, 5945,R42770,,20,309,AAGTCACCCNTGAGTCAAGC,, 5946,R42770,,20,303,CCCNTGAGTCAAGCAGCCCN,, 5947,R42770,,20,297,AGTCAAGCAGCCCNGTTTGN,, 5948,R42770,,20,291,GCAGCCCNGTTTGNAAATAT,, 5949,R42770,,20,285,CNGTTTGNAAATATTGTCCT,, 5950,R42770,,20,279,GNAAATATTGTCCTAATTGC,, 5951,R42770,,20,273,ATTGTCCTAATTGCCCTGAG,, 5952,R42770,,20,267,CTAATTGCCCTGAGAAGNTC,, 5953,R42770,,20,261,GCCCTGAGAAGNTCCTTATT,, 5954,R42770,,20,255,AGAAGNTCCTTATTCATTAG,, 15 5955,R42770,,20,249,TCCTTATTCATTAGATTTAC,, 5956,R42770,,20,243,TTCATTAGATTTACAGNTTT,, 5957,R42770,,20,237,AGATTTACAGNTTTCCCCTT,, 5958,R42770,,20,231,ACAGNTTTCCCCTTGACTAG,, 5959,R42770,,20,225,TTCCCCTTGACTAGGGGTTT, 20 5960,R42770,,20,219,TTGACTAGGGGTTTGAAGNA,, 5961,R42770,,20,213,AGGGGTTTGAAGNACTTACC,, 5962,R42770,,20,207,TTGAAGNACTTACCGAAAAT,, 5963,R42770,,20,201,NACTTACCGAAAATGCAGAT,, 5964,R42770,,20,195,CCGAAAATGCAGATATGTTA,, 25 5965,R42770,,20,189,ATGCAGATATGTTAAATTTA,, 5966,R42770,,20,183,ATATGTTAAATTTATGATGA,, 5967,R42770,,20,177,TAAATTTATGATGATGGTTT,, 5968,R42770,,20,171,TATGATGATGGTTTGAAAAA,, 5969,R42770,,20,165,GATGGTTTGAAAAACAACGT,, 30 5970,R42770,,20,159,TTGAAAAACAACGTCTGAAG,, 5971,R42770,,20,153,AACAACGTCTGAAGGAATTN,, 5972,R42770,,20,147,GTCTGAAGGAATTNTATCAA,, 5973,R42770,,20,141,AGGAATTNTATCAAATAACT,, 5974,R42770,,20,135,TNTATCAAATAACTGGTCCA,, 5975,R42770,,20,129,AAATAACTGGTCCAAAATAC,, 35 5976,R42770,,20,123,CTGGTCCAAAATACGTATTT,, 5977,R42770,,20,117,CAAAATACGTATTTAAATTT,, 5978,R42770,,20,111,ACGTATTTAAATTTAATCTG,, 5979,R42770,,20,105,TTAAATTTAATCTGCAAAAT,, 40 5980,R42770,,20,99,TTAATCTGCAAAATGTATAC,, 5981,R42770,,20,93,TGCAAAATGTATACACTGAG,, 5982,R42770,,20,87,ATGTATACACTGAGTATTAA,, 5983,R42770,,20,81,ACACTGAGTATTAAAGAAAC,, 5984,R42770,,20,75,AGTATTAAAGAAACAGGAAA,, 45 5985,R42770,,20,69,AAAGAAACAGGAAATGTGTG,, 5986,R42770,,20,63,ACAGGAAATGTGTGTTTTTA,, 5987,R42770,,20,57,AATGTGTGTTTTTAGTCTTC,, 5988,R42770,,20,51,TGTTTTTAGTCTTCACATCA,, 5989,R42770,,20,45,TAGTCTTCACATCAAAATTG,, 50 5990,R42770,,20,39,TCACATCAAAATTGCTCTAT,, 5991,R42770,,20,33,CAAAATTGCTCTATTAATGA,, 5992,R42770,,20,27,TGCTCTATTAATGAACAAAT,, 5993,R42770,,20,21,ATTAATGAACAAATAAAAGA,, 5994,R42770,,20,15,GAACAAATAAAAGATTAAGT,, 55 5995,R42770,,20,9,ATAAAAGATTAAGTTACAAA,, 5996,R42770,,20,3,GATTAAGTTACAAAAAAAA,, (GENBANK ACCESSION NO. H93087) AAAACAAAATTCTGCATTTTTATAAAACTTGATAAAAAATAGTATTTCAAACTGTACAGTCACCAGAAGTACACAGTTATCAAAAAT GCACACACTTCACTTGGCATCTCCAGCACCTTCAGCTTTCTGTGCCTGGTCTGTTTTTGGCATCTCCATTTTCTGCAGGGTTATTCCCCT 60 CCAAAAGTACCAAGGGTAAGAGAAGTTTCTCCTCCTCCAAAAGTTTTTGGTGGTTGGCTTTCTTCTAGAATGTTGGATTTCCAGAA GCCCACTCAAATGTCCCACTTTGGCTACAGGCATCAGAAATTTCAGAACCAGCNAAACCCCAAGGGGCAAGAGTCCCAAGTAGAGG CAATGATTCCAAACCAGGCACTAACCATAATTCATGGGAAGCCAAGGGAATGGTTTTTTGGANGGTTTTTAGGTTCAGGNCAAG 65 (SEQ ID NO: 5997) 5998,H93087,,20,588,CTTGNCCTGAACCTAAAAAC,, 5999,H93087,,20,582,CTGAACCTAAAAACCNTCCA,, 6000,H93087,,20,576,CTAAAAACCNTCCAAAAACC,, 70 6001,H93087,,20,570,ACCNTCCAAAAACCATTCCC,,

6002,H93087,20,564,CAAAAACCATTCCCTTGGCT, 6003,H93087,20,558,CCATTCCCTTGGCTTCCCAT, 6004,H93087,20,552,CCTTGGCTTCCCATGAATTA, 6005,H93087,20,546,CTTCCCATGAATTATGGTTA, 6006,H93087,20,540,ATGAATTATGGTTAGTGCCT,

6007,H93087,,20,534,TATGGTTAGTGCCTGGTTTG,, 6008,H93087,,20,528,TAGTGCCTGGTTTGGAATCA,, 6009,H93087,,20,522,CTGGTTTGGAATCATTGCCT,, 6010,H93087,,20,516,TGGAATCATTGCCTCTACTT,, 6011,H93087,,20,510,CATTGCCTCTACTTGGGACT,, 6012,H93087,,20,504,CTCTACTTGGGACTCTTGCC, 5 6013,H93087,,20,498,TTGGGACTCTTGCCCCTTGG,, 6014,H93087,,20,492,CTCTTGCCCCTTGGGGTTTN,, 6015,H93087,,20,486,CCCCTTGGGGTTTNGCTGGT,, 6016,H93087,,20,480,GGGGTTTNGCTGGTTCTGAA,, 6017,H93087,,20,474,TNGCTGGTTCTGAAATTTCT,, 6018,H93087,,20,468,GTTCTGAAATTTCTGATGCC,, 6019,H93087,,20,462,AAATTTCTGATGCCTGTAGC,, 6020,H93087,,20,456,CTGATGCCTGTAGCCAAAGT,, 15 6021,H93087,,20,450,CCTGTAGCCAAAGTGGGACA,, 6022, H93087, 20,444, GCCAAAGTGGGACATTTGAG, 6023,H93087,,20,438,GTGGGACATTTGAGTGGGCT,, 6024,H93087,,20,432,CATTTGAGTGGGCTTCTGGA,, 6025, H93087, 20, 426, AGTGGGCTTCTGGAAATCCA, 20 6026,H93087,,20,420,CTTCTGGAAATCCAACATTC,, 6027,H93087,,20,414,GAAATCCAACATTCTAGAAG,, 6028,H93087,,20,408,CAACATTCTAGAAGAAAGCC,, 6029,H93087,,20,402,TCTAGAAGAAAGCCAACCAC,, 6030,H93087,,20,396,AGAAAGCCAACCACCAAAAA,, 6031,H93087,,20,390,CCAACCACCAAAAACTTTTG,, 6032,H93087,,20,384,ACCAAAAACTTTTGAGGAGG,, 6033,H93087,,20,378,AACTTTTGAGGAGGAGGAGA,, 6034,H93087,,20,372,TGAGGAGGAGGAGAAACTTC,, 6035,H93087,,20,366,GGAGGAGAAACTTCTCTTAC,, 6036,H93087,,20,360,GAAACTTCTCTTACCCTTGG,, 6037,H93087,,20,354,TCTCTTACCCTTGGTACTTT,, 6038, H93087, 20,348, ACCCTTGGTACTTTTGGTTG,, 6039,H93087,,20,342,GGTACTTTTGGTTGGTTGTG,, 6040,H93087,,20,336,TTTGGTTGGTTGTGGGTGGT,, 35 6041,H93087,,20,330,TGGTTGTGGGTGGTTTTCTT,, 6042,H93087,,20,324,TGGGTGGTTTTCTTCAGTCC,, 6043,H93087,,20,318,GTTTTCTTCAGTCCATTGTA,, 6044,H93087,,20,312,TTCAGTCCATTGTACTGATG,, 6045,H93087,,20,306,CCATTGTACTGATGTTCACT,, 6046,H93087,,20,300,TACTGATGTTCACTTTTTCC,, 6047,H93087,,20,294,TGTTCACTTTTTCCTCTCTT,, 6048,H93087,,20,288,CTTTTTCCTCTCTCTCCCG, 6049,H93087,,20,282,CCTCTCTTCCTGCCAAAAAA,, 6050,H93087,,20,276,TTCCTGCCAAAAAAAAGAAAC,, 45 6051,H93087,,20,270,CCAAAAAAAGAAACCTGCTC,, 6052,H93087,,20,264,AAAGAAACCTGCTCCTCCAA,, 6053,H93087,,20,258,ACCTGCTCCTCCAAAGCCAG,, 6054,H93087,,20,252,TCCTCCAAAGCCAGAGCCCA,, 6055,H93087,,20,246,AAAGCCAGAGCCCAAGCCTA,, 50 6056,H93087,,20,240,AGAGCCCAAGCCTAAAAAGG,, 6057,H93087,,20,234,CAAGCCTAAAAAGGCCCCTG,, 6058,H93087,,20,228,TAAAAAGGCCCCTGCAAAGA,, 6059,H93087,,20,222,GGCCCCTGCAAAGAAGGGAG,, 6060,H93087,,20,216,TGCAAAGAAGGGAGAGAAGG,, 6061,H93087,,20,210,GAAGGGAGAGAAGGTACCCA,, 6062,H93087,,20,204,AGAGAAGGTACCCAAAGGGA,, 6063,H93087,,20,198,GGTACCCAAAGGGAAAAAGG,, 6064,H93087,,20,192,CAAAGGGAAAAAGGGAAAAG,, 6065,H93087,,20,186,GAAAAAGGGAAAAGCTGATG,, 60 6066,H93087,,20,180,GGGAAAAGCTGATGCTGGCA,, 6067,H93087,,20,174,AGCTGATGCTGGCAAGGAGG,, 6068,H93087,,20,168,TGCTGGCAAGGAGGGGAATA,, 6069,H93087,,20,162,CAAGGAGGGGAATAACCCTG,, 6070,H93087,,20,156,GGGGAATAACCCTGCAGAAA,, 65 6071, H93087,, 20, 150, TAACCCTGCAGAAAATGGAG,, 6072, H93087, 20, 144, TGCAGAAAATGGAGATGCCA,, 6073,H93087,,20,138,AAATGGAGATGCCAAAACAG,, 6074,H93087,,20,132,AGATGCCAAAACAGACCAGG,, 6075,H93087,,20,126,CAAAACAGACCAGGCACAGA,, 70 6076,H93087,,20,120,AGACCAGGCACAGAAAGCTG,, 6077,H93087,,20,114,GGCACAGAAAGCTGAAGGTG,, 6078,H93087,,20,108,GAAAGCTGAAGGTGCTGGAG,, 6079,H93087,,20,102,TGAAGGTGCTGGAGATGCCA,, 6080, H93087, 20,96, TGCTGGAGATGCCAAGTGAA,, 6081,H93087,,20,90,AGATGCCAAGTGAAGTGTGT,,

6082,H93087,,20,84,CAAGTGAAGTGTGCATTT,, 6083,H93087,,20,78,AAGTGTGTGCATTTTTGATA,, 6084,H93087,,20,72,GTGCATTTTTGATAACTGTG,, 6085,H93087,,20,66,TTTTGATAACTGTGTACTTC,, 6086,H93087,,20,60,TAACTGTGTACTTCTGGTGA,, 6087,H93087,,20,54,TGTACTTCTGGTGACTGTAC,, 6088,H93087,,20,48,TCTGGTGACTGTACAGTTTG,, 6089,H93087,,20,42,GACTGTACAGTTTGAAATAC,, 6090,H93087,,20,36,ACAGTTTGAAATACTATTTT,, 6091,H93087,,20,30,TGAAATACTATTTTTATCA,, 6092,H93087,,20,24,ACTATTTTTTATCAAGTTTT,, 6093,H93087,,20,18,TTTTATCAAGTTTTATAAAA,, 6094,H93087,,20,12,CAAGTTTTATAAAAATGCAG,,

6095,H93087,,20,6,TTATAAAAATGCAGAATTTT,,

6097,AA486518,,20,481,GATTTTTATTCTGTATTTTA,,

(GENBANK ACCESSION NO. AA486518) GAAGATGAAGGTGTCTCCAGAGGAAGTTTCTGGATGGCAACGAGCTCACCCTGGCTGACTGCAACCTGTTGCCAAAGTTACACAT $\tt CCCGGGAAGAATTCGCTTCCACCTGTCCAGATGAGGGGGGAGATCGAGCTCGCCTATGAGCAAGTGGCAAAGGCCCTCAAATAAGCC$ CCTCCTGGGACTCCCTCAACCCCCTCCATTTTCTCCACAAAGGCCCTGGTGGTTTCCACATTGCTACCCAATGGACACACTCCAAAA 20

GTCAGATTTTTATTGTGGGGTGGGATGAGTAGGACAACATATTTCAGTAATAAAATACAGAATAAAAATC

(SEQ ID NO: 6096)

25 6098,AA486518,,20,475,TATTCTGTATTTTATTACTG,, 6099,AA486518,,20,469,GTATTTTATTACTGAAATAT,, 6100,AA486518,,20,463,TATTACTGAAATATGTTGTC,, 6101,AA486518,,20,457,TGAAATATGTTGTCCTACTC,, 6102,AA486518,,20,451,ATGTTGTCCTACTCATCCCA,, 30 6103,AA486518,,20,445,TCCTACTCATCCCACCCCAC,, 6104,AA486518,,20,439,TCATCCCACCCCACAATAAA,, 6105,AA486518,,20,433,CACCCCACAATAAAAATCTG,, 6106,AA486518,,20,427,ACAATAAAAATCTGACCCAG,, 6107,AA486518,,20,421,AAAATCTGACCCAGGCCCCC,, 35 6108,AA486518,,20,415,TGACCCAGGCCCCCATTTC,, 6109,AA486518,,20,409,AGGCCCCCATTTCTTTCCC,, 6110,AA486518,,20,403,CCCATTTCTTTCCCTCATCC,, 6111,AA486518,,20,397,TCTTTCCCTCATCCCTCTT,, 6112,AA486518,,20,391,CCTCATCCCCTCTTCCACCA,, 40 6113,AA486518,,20,385,CCCCTCTTCCACCACACCAT,, 6114,AA486518,,20,379,TTCCACCACACCATCCCGGA,, 6115,AA486518,,20,373,CACACCATCCCGGAACAAGT,, 6116,AA486518,,20,367,ATCCCGGAACAAGTGCTCCA,, 6117,AA486518,,20,361,GAACAAGTGCTCCAGGATTC,, 6118,AA486518,,20,355,GTGCTCCAGGATTCCCTGCC,, 6119,AA486518,,20,349,CAGGATTCCCTGCCCACTGG,, 6120,AA486518,,20,343,TCCCTGCCCACTGGCCATTT,, 6121, AA486518, 20, 337, CCCACTGGCCATTTTGGAGT, 6122,AA486518,,20,331,GGCCATTTTGGAGTGTGTCC,, 6123,AA486518,,20,325,TTTGGAGTGTGTCCATTGGG,, 6124,AA486518,,20,319,GTGTGTCCATTGGGTAGCAA,, 6125,AA486518,,20,313,CCATTGGGTAGCAATGTGGA,, 6126,AA486518,,20,307,GGTAGCAATGTGGAAACCAC,, 6127,AA486518,,20,301,AATGTGGAAACCACCAGGGC,, 55 6128,AA486518,,20,295,GAAACCACCAGGGCCTTTGT,, 6129,AA486518,,20,289,ACCAGGGCCTTTGTGGAGAA,, 6130,AA486518,,20,283,GCCTTTGTGGAGAAAATGGA,, 6131,AA486518,,20,277,GTGGAGAAAATGGAGGGGGT,, 6132,AA486518,,20,271,AAAATGGAGGGGTTGAGGG, 60 6133,AA486518,,20,265,GAGGGGGTTGAGGGAGTCCC,, 6134,AA486518,,20,259,GTTGAGGGAGTCCCAGGAGG., 6135,AA486518,,20,253,GGAGTCCCAGGAGGGGCTTA,, 6136,AA486518,,20,247,CCAGGAGGGGCTTATTTGAG,, 6137,AA486518,,20,241,GGGGCTTATTTGAGGGCCTT,, 6138,AA486518,,20,235,TATTTGAGGGCCTTTGCCAC,, 65 6139,AA486518,,20,229,AGGGCCTTTGCCACTTGCTC, 6140,AA486518,,20,223,TTTGCCACTTGCTCATAGGC,, 6141,AA486518,,20,217,ACTTGCTCATAGGCGAGCTC,, 6142,AA486518,,20,211,TCATAGGCGAGCTCGATCTC,, 70 6143,AA486518,,20,205,GCGAGCTCGATCTCCTCATC, 6144,AA486518,,20,199,TCGATCTCCTCATCATCTGG,, 6145,AA486518,,20,193,TCCTCATCATCTGGACAGGT,, 6146,AA486518,,20,187,TCATCTGGACAGGTGGAAGC,, 6147,AA486518,,20,181,GGACAGGTGGAAGCGAATTC,,

6148,AA486518,,20,175,GTGGAAGCGAATTCTTCCCG,,

6149,AA486518,,20,169,GCGAATTCTTCCCGGGCGTA,, 6150,AA486518,,20,163,TCTTCCCGGGCGTAGGCATT,, 6151,AA486518,,20,157,CGGGCGTAGGCATTGCTCAA,, 6152,AA486518,,20,151,TAGGCATTGCTCAAGTACCG,, 6153,AA486518,,20,145,TTGCTCAAGTACCGATGCAC,, 6154,AA486518,,20,139,AAGTACCGATGCACTCCCCG,, 6155,AA486518,,20,133,CGATGCACTCCCCGGAAGGC,, 6156,AA486518,,20,127,ACTCCCCGGAAGGCCTCGGG,, 6157,AA486518,,20,121,CGGAAGGCCTCGGGGATGGT,, 6158,AA486518,,20,115,GCCTCGGGGATGGTGAATCC,, 6159,AA486518,,20,109,GGGATGGTGAATCCCCGGTA,, 6160,AA486518,,20,103,GTGAATCCCCGGTACTTCTT,, 6161,AA486518,,20,97,CCCCGGTACTTCTTACACAC,, 6162,AA486518,,20,91,TACTTCTTACACACCACCTG,, 6163,AA486518,,20,85,TTACACACCACCTGTACTAT,, 6164,AA486518,,20,79,ACCACCTGTACTATGTGTAA,, 6165,AA486518,,20,73,TGTACTATGTGTAACTTTGG,, 6166,AA486518,,20,67,ATGTGTAACTTTGGCAACAG,, 6167,AA486518,,20,61,AACTTTGGCAACAGGTTGCA,, 20 6168,AA486518,,20,55,GGCAACAGGTTGCAGTCAGC,, 6169,AA486518,,20,49,AGGTTGCAGTCAGCCAGGGT,, 6170,AA486518,,20,43,CAGTCAGCCAGGGTGAGCTC,, 6171,AA486518,,20,37,GCCAGGGTGAGCTCGTTGCC,, 6172,AA486518,,20,31,GTGAGCTCGTTGCCATCCAG,, 25 6173,AA486518,,20,25,TCGTTGCCATCCAGAAACTT,, 6174,AA486518,,20,19,CCATCCAGAAACTTCCTCTG,, 6175,AA486518,,20,13,AGAAACTTCCTCTGAGAGAC,, 6176,AA486518,,20,7,TTCCTCTGAGAGACACCTTC,, 6177,AA486518,,20,1,TGAGAGACACCTTCATCTTC,, 30 (GENBANK ACCESSION NO. AA464729) TCTGCTTTTCCAACTTTATTTAGAAAAACAAATCCAGGTCCCATGGCCAAGAAGCATGCTGGCGAGCGCGATAAGAAGCTGGCGGC CCCTCCCTCCAACTCTGTCTCTAAGTT (SEQ ID NO: 6178) . 35 6179,AA464729,,20,180,AACTTAGAGACAGAGTTGGA,, 6180,AA464729,,20,174,GAGACAGAGTTGGAGGGAGG,, 6181,AA464729,,20,168,GAGTTGGAGGGAGGGGACAG,, 6182,AA464729,,20,162,GAGGGAGGGGACAGGAGAGG,, 40 6183,AA464729,,20,156,GGGGACAGGAGAGGTTGGGG, 6184,AA464729,,20,150,AGGAGAGGTTGGGGTCACGG, 6185,AA464729,,20,144,GGTTGGGGTCACGGTGGAAG,, 6186, AA464729, 20, 138, GGTCACGGTGGAAGGAGGAA, 6187,AA464729,,20,132,GGTGGAAGGAGGAAGAGAGACC,, 6188,AA464729,,20,126,AGGAGGAAGAGAGCCCACTA,, 45 6189, AA464729, 20, 120, AAGAGAGCCCACTACAGCCC, 6190,AA464729,,20,114,GCCCACTACAGCCCCGCAGC,, 6191,AA464729,,20,108,TACAGCCCCGCAGCGCCCGC, 6192,AA464729,,20,102,CCCGCAGCGCCCGCTTCTTG, 6193,AA464729,,20,96,GCGCCCGCTTCTTGTCCGTC,, 50 6194,AA464729,,20,90,GCTTCTTGTCCGTCTTTTTC,, 6195,AA464729,,20,84,TGTCCGTCTTTTTCTTGGCC,, 6196,AA464729,,20,78,TCTTTTTCTTGGCCGCCAGC,, 6197,AA464729,,20,72,TCTTGGCCGCCAGCTTCTTA,, 55 6198,AA464729,,20,66,CCGCCAGCTTCTTATCGCGC,, 6199,AA464729,,20,60,GCTTCTTATCGCGCTCGCCA,, 6200, AA464729,, 20,54, TATCGCGCTCGCCAGCATGC,, 6201,AA464729,,20,48,GCTCGCCAGCATGCTTCTTG,, 6202, AA464729, 20,42, CAGCATGCTTCTTGGCCATG, 6203,AA464729,,20,36,GCTTCTTGGCCATGGGACCT,, 6204,AA464729,,20,30,TGGCCATGGGACCTGGATTT,, 6205,AA464729,,20,24,TGGGACCTGGATTTGTTTTT,, 6206,AA464729,,20,18,CTGGATTTGTTTTTCTAAAT,, 6207,AA464729,,20,12,TTGTTTTTCTAAATAAAGTT,, 6208,AA464729,,20,6,TTCTAAATAAAGTTGGAAAA,, (GENBANK ACCESSION NO. AA180912) GTGGTCGAGCCCTACAACTCTATCCTGACCACCCACACCACCCTGGAGCACTCAGACTGTGCCTTCATGGTGGACAACGAAGCAAT CTATGACATCTGCCGCGCAACCTAGACATCGAGCGCCCAACCTACACCAACCTCAATCGCCTCATTAGCCAAATTGTCTCCTCCAT CACAGCTTCTCGCGCTTTGACGGGGCCCTCAATGTGGACCTGACAGAGTTCCAGACCAGACCTGGTGCCCTACCCTCGCATCCACTT 70 TTTGAGCCTNCCAACCAGANGGTAAAGTGTGATTCCCGG (SEQ ID NO: 6209)

6210,AA180912,,20,366,CCGGGAATCACACTTTACCN,, 6211,AA180912,,20,360,ATCACACTTTACCNTCTGGT,,

6212,AA180912,,20,354,CTTTACCNTCTGGTTGGNAG,, 6213,AA180912,,20,348,CNTCTGGTTGGNAGGCTCAA,, 6214,AA180912,,20,342,GTTGGNAGGCTCAAAAGCAG,, 6215,AA180912,,20,336,AGGCTCAAAAGCAGGCATTG,, 6216,AA180912,,20,330,AAAAGCAGGCATTGGTGATC,, 6217,AA180912,,20,324,AGGCATTGGTGATCTCTGCC,, 6218,AA180912,,20,318,TGGTGATCTCTGCCACCGAC,, 6219,AA180912,,20,312,TCTCTGCCACCGACAGCTGC,, 6220,AA180912,,20,306,CCACCGACAGCTGCTCGTGG,, 6221,AA180912,,20,300,ACAGCTGCTCGTGGTATGCC,, 6222, AA180912,, 20, 294, GCTCGTGGTATGCCTTTTCT,, 6223,AA180912,,20,288,GGTATGCCTTTTCTGCAGAG,, 6224,AA180912,,20,282,CCTTTTCTGCAGAGATGACT,, 6225, AA180912, 20,276, CTGCAGAGATGACTGGTGCA, 6226,AA180912,,20,270,AGATGACTGGTGCATAGGTG,, 6227,AA180912,,20,264,CTGGTGCATAGGTGGCCAGG,, 6228,AA180912,,20,258,CATAGGTGGCCAGGGGGAAG,, 6229,AA180912,,20,252,TGGCCAGGGGGAAGTGGATG,, 6230,AA180912,,20,246,GGGGGAAGTGGATGCGAGGG,, 20 6231,AA180912,,20,240,AGTGGATGCGAGGGTAGGGC,, 6232,AA180912,,20,234,TGCGAGGGTAGGGCACCAGG,, 6233,AA180912,,20,228,GGTAGGGCACCAGGTTGGTC,, 6234,AA180912,,20,222,GCACCAGGTTGGTCTGGAAC,, 6235,AA180912,,20,216,GGTTGGTCTGGAACTCTGTC,, 25 6236,AA180912,,20,210,TCTGGAACTCTGTCAGGTCC,, 6237,AA180912,,20,204,ACTCTGTCAGGTCCACATTG,, 6238,AA180912,,20,198,TCAGGTCCACATTGAGGGCC,, 6239,AA180912,,20,192,CCACATTGAGGGCCCCGTCA,, 6240,AA180912,,20,186,TGAGGGCCCCGTCAAAGCGC,, 30 6241,AA180912,,20,180,CCCCGTCAAAGCGCAGAGAA,, 6242,AA180912,,20,174,CAAAGCGCAGAGAAGCTGTG,, 6243,AA180912,,20,168,GCAGAGAAGCTGTGATGGAG,, 6244,AA180912,,20,162,AAGCTGTGATGGAGGAGACA,, 6245,AA180912,,20,156,TGATGGAGGAGACAATTTGG,, 6246,AA180912,,20,150,AGGAGACAATTTGGCTAATG,, 6247,AA180912,,20,144,CAATTTGGCTAATGAGGCGA,, 6248,AA180912,,20,138,GGCTAATGAGGCGATTGAGG,, 6249,AA180912,,20,132,TGAGGCGATTGAGGTTGGTG,, 6250, AA180912, 20,126, GATTGAGGTTGGTGTAGGTT,, 6251,AA180912,,20,120,GGTTGGTGTAGGTTGGGCGC,, 6252,AA180912,,20,114,TGTAGGTTGGGCGCTCGATG,, 6253,AA180912,,20,108,TTGGGCGCTCGATGTCTAGG,, 6254,AA180912,,20,102,GCTCGATGTCTAGGTTGCGG,, 6255,AA180912,,20,96,TGTCTAGGTTGCGGCGGCAG,, 45 6256,AA180912,,20,90,GGTTGCGGCGGCAGATGTCA,, 6257,AA180912,,20,84,GGCGGCAGATGTCATAGATT,, 6258,AA180912,,20,78,AGATGTCATAGATTGCTTCG,, 6259,AA180912,,20,72,CATAGATTGCTTCGTTGTCC,, 6260,AA180912,,20,66,TTGCTTCGTTGTCCACCATG,, 50 6261,AA180912,,20,60,CGTTGTCCACCATGAAGGCA,, 6262,AA180912,,20,54,CCACCATGAAGGCACAGTCT,, 6263,AA180912,,20,48,TGAAGGCACAGTCTGAGTGC,, 6264,AA180912,,20,42,CACAGTCTGAGTGCTCCAGG,, 6265,AA180912,,20,36,CTGAGTGCTCCAGGGTGGTG, 55 6266,AA180912,,20,30,GCTCCAGGGTGGTGTGGGTG,, 6267,AA180912,,20,24,GGGTGGTGGTGGTCAGG,, 6268,AA180912,,20,18,TGTGGGTGGTCAGGATAGAG,, 6269,AA180912,,20,12,TGGTCAGGATAGAGTTGTAG,, 6270,AA180912,,20,6,GGATAGAGTTGTAGGGCTCG,, (GENBANK ACCESSION NO. AA436142)

(SEQ ID NO: 6271)

6272,AA436142,,20,428,TATCTGTTTCTCCTCCTTTA,,
70 6273,AA436142,,20,422,TTTCTCCTCCTTTACGCCCA,,
6274,AA436142,,20,416,CTCCTTTACGCCCATTTTCC,,
6275,AA436142,,20,410,TACGCCCATTTTCCTACCCA,,
6276,AA436142,,20,404,CATTTTCCTACCCACAGCAG,,
6277,AA436142,,20,398,CCTACCCACAGCAGCAAATG,,
75 6278,AA436142,,20,392,CACAGCAGCAAATGACAACG,,

6279,AA436142,,20,386,AGCAAATGACAACGTGTCTG,, 6280,AA436142,,20,380,TGACAACGTGTCTGTCCAGG,, 6281,AA436142,,20,374,CGTGTCTGTCCAGGTCTGTC, 6282,AA436142,,20,368,TGTCCAGGTCTGTCCCCCGG,, 6283,AA436142,,20,362,GGTCTGTCCCCCGGCTCATC,, 6284,AA436142,,20,356,TCCCCCGGCTCATCCCAGGA,, 6285,AA436142,,20,350,GGCTCATCCCAGGATGCCAC,, 6286,AA436142,,20,344,TCCCAGGATGCCACTCACAT,, 6287,AA436142,,20,338,GATGCCACTCACATTTTTTT,, 10 6288,AA436142,,20,332,ACTCACATTTTTTTCTTCTT,, 6289,AA436142,,20,326,ATTTTTTTTTTTTTTTTACC,, 6290,AA436142,,20,320,TTCTTCTTGTTACCTTGACC,, 6291,AA436142,,20,314,TTGTTACCTTGACCACGCTG,, 6292,AA436142,,20,308,CCTTGACCACGCTGTACAGT,, 6293,AA436142,,20,302,CCACGCTGTACAGTAACATC,, 15 6294,AA436142,,20,296,TGTACAGTAACATCCAAGAG,, 6295,AA436142,,20,290,GTAACATCCAAGAGCCCATT,, 6296,AA436142,,20,284,TCCAAGAGCCCATTCTACAG,, 6297,AA436142,,20,278,AGCCCATTCTACAGTGGGTG,, 6298,AA436142,,20,272,TTCTACAGTGGGTGGTTTTG,, 20 6299,AA436142,,20,266,AGTGGGTGGTTTTGGTCTTT,, 6300,AA436142,,20,260,TGGTTTTGGTCTTTTTATAA,, 6301,AA436142,,20,254,TGGTCTTTTTATAACTTTTT,, 6302,AA436142,,20,248,TTTTATAACTTTTTCTCAAA,, 25 6303,AA436142,,20,242,AACTTTTTCTCAAAGTCACT,, 6304,AA436142,,20,236,TTCTCAAAGTCACTGATGTT,, 6305,AA436142,,20,230,AAGTCACTGATGTTTGTTCC,, 6306,AA436142,,20,224,CTGATGTTTGTTCCTGTTAA,, 6307, AA436142,, 20, 218, TTTGTTCCTGTTAAATGTAT,, 30 6308,AA436142,,20,212,CCTGTTAAATGTATAGCATT,, 6309,AA436142,,20,206,AAATGTATAGCATTGTAATG,, 6310,AA436142,,20,200,ATAGCATTGTAATGAGAGCC,, 6311,AA436142,,20,194,TTGTAATGAGAGCCCATCAA,, 6312,AA436142,,20,188,TGAGAGCCCATCAAATCCTG,, 35 6313,AA436142,,20,182,CCCATCAAATCCTGAGTGTC,, 6314,AA436142,,20,176,AAATCCTGAGTGTCAGTTTG,, 6315,AA436142,,20,170,TGAGTGTCAGTTTGTTGTCC,, 6316,AA436142,,20,164,TCAGTTTGTTGTCCCTATTG,, 6317, AA436142, 20, 158, TGTTGTCCCTATTGTAGATG, 6318,AA436142,,20,152,CCCTATTGTAGATGAAATAG,, 6319,AA436142,,20,146,TGTAGATGAAATAGTGATGT,, 6320,AA436142,,20,140,TGAAATAGTGATGTAGCAAA,, 6321,AA436142,,20,134,AGTGATGTAGCAAAAACCTA,, 6322, AA436142, 20, 128, GTAGCAAAAACCTAGTAAAT, 6323,AA436142,,20,122,AAAACCTAGTAAATTCTGAA,, 45 6324,AA436142,,20,116,TAGTAAATTCTGAATGCTTT,, 6325,AA436142,,20,110,ATTCTGAATGCTTTTCCACG,, 6326,AA436142,,20,104,AATGCTTTTCCACGTAGACT,, 6327,AA436142,,20,98,TTTCCACGTAGACTTATCTG,, 50 6328,AA436142,,20,92,CGTAGACTTATCTGGAATGT,, 6329, AA436142,, 20, 86, CTTATCTGGAATGTGAACAC,, 6330,AA436142,,20,80,TGGAATGTGAACACAACTCT,, 6331,AA436142,,20,74,GTGAACACAACTCTTTGGTT,, 6332,AA436142,,20,68,ACAACTCTTTGGTTAATAGT,, 55 6333,AA436142,,20,62,CTTTGGTTAATAGTAAATGC,, 6334,AA436142,,20,56,TTAATAGTAAATGCTTAACT... 6335,AA436142,,20,50,GTAAATGCTTAACTGTAGTC,, 6336, AA436142,, 20,44, GCTTAACTGTAGTCCTGAGT,, 6337,AA436142,,20,38,CTGTAGTCCTGAGTAGGTGC,, 60 6338,AA436142,,20,32,TCCTGAGTAGGTGCATTTCT,, 6339,AA436142,,20,26,GTAGGTGCATTTCTGTCTGT,, 6340,AA436142,,20,20,GCATTTCTGTCTGTCTCAAT,, 6341,AA436142,,20,14,CTGTCTGTCTCAATAAATTT,, 6342,AA436142,,20,8,GTCTCAATAAATTTTACTTT,,

- AGAAGTCTGCAGCCGTGTCCACCCTTGGCAGCAGGATGCATGTCCTGCTGATAACATCAGCTGCAGTTCAGAGCCCCTGGTGGTCAC
 TTAGAGATCATAATTGGGGTTCTTCCGAAGATTAACAAAACCTTCCAGAATGGGGGTAACAGGAAGAAACTCCTCAGTGGCCAATT
 CTGCCCGTTCCCCGTGGGCCAACAACACTGGGGTTGTATGCGTCTGGAACCCTGTGATAGTCTTCGGNTTGCCAGCCTGGGCCCACC
 ACATCCACTGCCTGGGCCCACACGGACAGACACTGGGCAATGGGCCGCAGTTTCCTCATCAAACCTAAACCAGGCATTTCGGGGGT
 (SEQ ID NO: 6344)
- 6345,H05893,,20,414,ACCCCCGAAATGCCTGGTTT,, 75 6346,H05893,,20,408,GAAATGCCTGGTTTACGTTT,,

6347,H05893,,20,402,CCTGGTTTACGTTTGATGAG,, 6348,H05893,,20,396,TTACGTTTGATGAGGAAACT,, 6349,H05893,,20,390,TTGATGAGGAAACTGCGGCC,, 6350,H05893,,20,384,AGGAAACTGCGGCCCATTGC,, 6351,H05893,,20,378,CTGCGGCCCATTGCCCAGTG, 5 6352,H05893,,20,372,CCCATTGCCCAGTGTCTGTC,, 6353,H05893,,20,366,GCCCAGTGTCTGTCCGTGTG,, 6354,H05893,,20,360,TGTCTGTCCGTGTGGGCCCA,, 6355,H05893,,20,354,TCCGTGTGGGCCCAGGCAGT,, 6356,H05893,,20,348,TGGGCCCAGGCAGTGGATGT,, 10 6357,H05893,,20,342,CAGGCAGTGGATGTGGTGGG,, 6358,H05893,,20,336,GTGGATGTGGTGGGCCCAGG,, 6359,H05893,,20,330,GTGGTGGCCCAGGCTGGCA,, 6360,H05893,,20,324,GGCCCAGGCTGGCAANCCGA,, 15 6361,H05893,,20,318,GGCTGGCAANCCGAAGACTA,, 6362,H05893,,20,312,CAANCCGAAGACTATCACAG,, 6363,H05893,,20,306,GAAGACTATCACAGGGTTCC,, 6364,H05893,,20,300,TATCACAGGGTTCCAGACGC,, 6365,H05893,,20,294,AGGGTTCCAGACGCATACAA,, 6366,H05893,,20,288,CCAGACGCATACAACCCCAG,, 6367,H05893,,20,282,GCATACAACCCCAGTGTTGT, 6368,H05893,,20,276,AACCCCAGTGTTGTTGGCCC,, 6369,H05893,,20,270,AGTGTTGTTGGCCCACGGGG,, 6370,H05893,,20,264,GTTGGCCCACGGGGAACGGG,, 6371,H05893,,20,258,CCACGGGGAACGGGCAGAAT,, 6372,H05893,,20,252,GGAACGGGCAGAATTGGCCA,, 25 6373,H05893,,20,246,GGCAGAATTGGCCACTGAGG,, 6374,H05893,,20,240,ATTGGCCACTGAGGAGTTTC,, 6375,H05893,,20,234,CACTGAGGAGTTTCTTCCTG, 30 6376,H05893,,20,228,GGAGTTTCTTCCTGTTACCC,, 6377,H05893,,20,222,TCTTCCTGTTACCCCCATTC,, 6378,H05893,,20,216,TGTTACCCCCATTCTGGAAG,, 6379,H05893,,20,210,CCCCATTCTGGAAGGTTTTG,, 6380,H05893,,20,204,TCTGGAAGGTTTTGTTAATC,, 35 6381,H05893,,20,198,AGGTTTTGTTAATCTTCGGA,, 6382,H05893,,20,192,TGTTAATCTTCGGAAGAACC,, 6383,H05893,,20,186,TCTTCGGAAGAACCCCAATT,, 6384,H05893,,20,180,GAAGAACCCCAATTATGATC,, 6385,H05893,,20,174,CCCCAATTATGATCTCTAAG,, 40 6386,H05893,,20,168,TTATGATCTCTAAGTGACCA,, 6387,H05893,,20,162,TCTCTAAGTGACCACCAGGG,, 6388,H05893,,20,156,AOTGACCACCAGGGGCTCTG,, 6389,H05893,,20,150,CACCAGGGGCTCTGAACTGC,, 6390,H05893,,20,144,GGGCTCTGAACTGCAGCTGA,, 6391,H05893,,20,138,TGAACTGCAGCTGATGTTAT,, 6392,H05893,,20,132,GCAGCTGATGTTATCAGCAG,, 6393,H05893,,20,126,GATGTTATCAGCAGGACATG,, 6394,H05893,,20,120,ATCAGCAGGACATGCATCCT,, 6395,H05893,,20,114,AGGACATGCATCCTGCTGCC,, 50 6396,H05893,,20,108,TGCATCCTGCTGCCAAGGGT,, 6397,H05893,,20,102,CTGCTGCCAAGGGTGGACAC,, 6398,H05893,,20,96,CCAAGGGTGGACACGGCTGC,, 6399,H05893,,20,90,GTGGACACGGCTGCAGACTT,, 6400,H05893,,20,84,ACGGCTGCAGACTTCTGGGG,, 6401,H05893,,20,78,GCAGACTTCTGGGGGAATTG,, 55 6402,H05893,,20,72,TTCTGGGGGAATTGTCGCCT,, 6403,H05893,,20,66,GGGAATTGTCGCCTCCTGCT,, 6404,H05893,,20,60,TGTCGCCTCCTGCTCTTTTG,, 6405,H05893,,20,54,CTCCTGCTCTTTTGTTACTG,, 60 6406,H05893,,20,48,CTCTTTTGTTACTGAGTGAG,, 6407,H05893,,20,42,TGTTACTGAGTGAGATAAGG,, 6408,H05893,,20,36,TGAGTGAGATAAGGTTGTTC,, 6409,H05893,,20,30,AGATAAGGTTGTTCAATAAA,, 6410,H05893,,20,24,GGTTGTTCAATAAAGACTTT,, 6411,H05893,,20,18,TCAATAAAGACTTTTATCCC,, 6412,H05893,,20,12,AAGACTTTTATCCCCAAGGT,, 65 6413,H05893,,20,6,TTTATCCCCAAGGTNAAAAA,, (GENBANK ACCESSION NO. H37989)

75' (SEQ ID NO: 6414)

6415,H37989,,20,425,CTTCCTTATATAGTGNCTTC,, 6416,H37989,,20,419,TATATAGTGNCTTCTACCCA,, 6417,H37989,,20,413,GTGNCTTCTACCCACTACNC,, 6418,H37989,,20,407,TCTACCCACTACNCTTCTAC,, 6419,H37989,,20,401,CACTACNCTTCTACCATTTT,, 6420,H37989,,20,395,NCTTCTACCATTTTCTACTT,, 6421,H37989,,20,389,ACCATTTTCTACTTTGGGCT, 6422,H37989,,20,383,TTCTACTTTGGGCTTAGGAT, 6423,H37989,,20,377,TTTGGGCTTAGGATGATGGC,, 6424,H37989,,20,371,CTTAGGATGATGGCCATTAT,, 6425,H37989,,20,365,ATGATGGCCATTATCTACAT,, 6426,H37989,,20,359,GCCATTATCTACATGTGTTT,, 6427,H37989,,20,353,ATCTACATGTGTTTTCAGCA,, 6428,H37989,,20,347,ATGTGTTTTCAGCACCTGGT,, 6429,H37989,,20,341,TTTCAGCACCTGGTTGGTTC, 6430,H37989,,20,335,CACCTGGTTGGTTCTAAATG, 6431,H37989,,20,329,GTTGGTTCTAAATGGGATCT,, 6432,H37989,,20,323,TCTAAATGGGATCTGGAGAC,, 6433,H37989,,20,317,TGGGATCTGGAGACCCAGCT,, 6434,H37989,,20,311,CTGGAGACCCAGCTTCTTGG,, 6435,H37989,,20,305,ACCCAGCTTCTTGGAGATTT,, 6436,H37989,,20,299,CTTCTTGGAGATTTTTAAGA,, 6437,H37989,,20,293,GGAGATTTTTAAGAGGAAGT,, 6438,H37989,,20,287,TTTTAAGAGGAAGTATTAAC,, 6439,H37989,,20,281,GAGGAAGTATTAACTGGACA,, 6440,H37989,,20,275,GTATTAACTGGACAAATGGA,, 6441,H37989,,20,269,ACTGGACAAATGGAATGGGC,, 6442,H37989,,20,263,CAAATGGAATGGGCACCAGA,, 30 6443,H37989,,20,257,GAATGGGCACCAGAAAGAAA,, 6444,H37989,,20,251,GCACCAGAAAGAAATACAGG,, 6445,H37989,,20,245,GAAAGAAATACAGGGTCACC,, 6446,H37989,,20,239,AATACAGGGTCACCCAGAAT,, 6447,H37989,,20,233,GGGTCACCCAGAATGGCAGA,, 6448,H37989,,20,227,CCCAGAATGGCAGAAACCTA,, 6449,H37989,,20,221,ATGGCAGAAACCTAGGTTTC,, 6450,H37989,,20,215,GAAACCTAGGTTTCCCAGAG,, 6451,H37989,,20,209,TAGGTTTCCCAGAGTGGAAA,, 6452,H37989,,20,203,TCCCAGAGTGGAAAGAGAGA,, 6453,H37989,,20,197,AGTGGAAAGAGAGAGAGAGAC,, 6454,H37989,,20,191,AAGAGAGAGAGACATTCAA,, 6455,H37989,,20,185,GAGGAGACATTCAACAAACA,, 6456,H37989,,20,179,ACATTCAACAAACAAGTATT,, 6457,H37989,,20,173,AACAAACAAGTATTTATTGA,, 6458,H37989,,20,167,CAAGTATTTATTGAGCGCCT,, 6459,H37989,,20,161,TTTATTGAGCGCCTACTATG, 6460,H37989,,20,155,GAGCGCCTACTATGTGCCAG,, 6461,H37989,,20,149,CTACTATGTGCCAGGCACTG,, 6462,H37989,,20,143,TGTGCCAGGCACTGTTCTAG,, 6463,H37989,,20,137,AGGCACTGTTCTAGACCCCC,, 6464,H37989,,20,131,TGTTCTAGACCCCCCCAGA,, 6465,H37989,,20,125,AGACCCCCCCAGAAGAAAA,, 6466,H37989,,20,119,CCCCCAGAAGAAAAAAAAAAA,, 6467,H37989,,20,113,GAAGAAAAAAAAAAAAAAAAAAAAA 6469,H37989,,20,101,AAAAACAAGATAGAGGCAGC,, 6470,H37989,,20,95,AAGATAGAGGCAGCAAACAC,, 6471,H37989,,20,89,GAGGCAGCAAACACAAATTC,, 6472,H37989,,20,83,GCAAACACAAATTCTGAGGG,, 6473,H37989,,20,77,ACAAATTCTGAGGGAGAGGA,, 6474,H37989,,20,71,TCTGAGGGAGAGGAAAGGGG, 6475,H37989,,20,65,GGAGAGGAAAGGGGTAGTTG, 6476,H37989,,20,59,GAAAGGGGTAGTTGAGTAAG,, 6477,H37989,,20,53,GGTAGTTGAGTAAGACGGCT,, 6478,H37989,,20,47,TGAGTAAGACGGCTAAGGGA,, 6479,H37989,,20,41,AGACGGCTAAGGGAACTGAG,, 6480,H37989,,20,35,CTAAGGGAACTGAGAAGCCT,, 6481,H37989,,20,29,GAACTGAGAAGCCTGAGGTG,, 6482,H37989,,20,23,AGAAGCCTGAGGTGATGGGG,, 6483,H37989,,20,17,CTGAGGTGATGGGGCTCTNC, 6484,H37989,,20,11,TGATGGGGCTCTNCTTAGGC,, 6485,H37989,,20,5,GGCTCTNCTTAGGCCTCCNC,, (GENBANK ACCESSION NO. AA486238)

75

ÀAAGGGGACACCTAGTTTGGTCATTTGGCAAAGGAGATGACTTAAAAATCCGCTTAATCTCTTCCAGTGTCCGTGTTAATGTATTT GGCTATTAGATCACTAGCACTGCTTTACCGCTCCTCATCGCCAACACCCCCATGCTCTGTGGCCTTCTTACACTTCTCAGAGGGCAGA

6487,AA486238,,20,388,AAAAGGGATCTTGGCAAGTG,, 6488, AA486238, 20, 382, GATCTTGGCAAGTGGGAAAC, 6489, AA486238, 20,376, GGCAAGTGGGAAACTGCTCG,, 6490,AA486238,,20,370,TGGGAAACTGCTCGCCACTG,, 6491,AA486238,,20,364,ACTGCTCGCCACTGCAGAAT,, 6492, AA486238, 20,358, CGCCACTGCAGAATTTCTTC, 6493,AA486238,,20,352,TGCAGAATTTCTTCAGACCA,, 6494,AA486238,,20,346,ATTTCTTCAGACCAAGGAAG,, 6495,AA486238,,20,340,TCAGACCAAGGAAGGGACTG;, 6496,AA486238,,20,334,CAAGGAAGGGACTGAAACGG,, 6497,AA486238,,20,328,AGGGACTGAAACGGACTTGG,, 6498,AA486238,,20,322,TGAAACGGACTTGGAAAACT,, 6499,AA486238,,20,316,GGACTTGGAAAACTAAAGCA,, 6500,AA486238,,20,310,GGAAAACTAAAGCAAAACCA,, 6501,AA486238,,20,304,CTAAAGCAAAACCATGACTG,, 6502,AA486238,,20,298,CAAAACCATGACTGCCGGGA,, 6503,AA486238,,20,292,CATGACTGCCGGGATGGTCT,, 6504,AA486238,,20,286,TGCCGGGATGGTCTCGTGTG,, 6505, AA486238, 20, 280, GATGGTCTCGTGTGGTGATT, 25 6506,AA486238,,20,274,CTCGTGTGGTGATTCTGCAA,, 6507,AA486238,,20,268,TGGTGATTCTGCAAGAAATA,, 6508, AA486238, 20, 262, TTCTGCAAGAAATAATCACC, 6509,AA486238,,20,256,AAGAAATAATCACCAGAGCG,, 6510,AA486238,,20,250,TAATCACCAGAGCGAGGGGA,, 30 6511,AA486238,,20,244,CCAGAGCGAGGGGACAGGTA,, 6512,AA486238,,20,238,CGAGGGGACAGGTACTTGAG,, 6513,AA486238,,20,232,GACAGGTACTTGAGAGACAT,, 6514,AA486238,,20,226,TACTTGAGAGACATGTGGGC,, 6515,AA486238,,20,220,AGAGACATGTGGGCCTGGCT,, 35 6516,AA486238,,20,214,ATGTGGGCCTGGCTGCCACT,, 6517,AA486238,,20,208,GCCTGGCTGCCACTCTGCCC,, 6518,AA486238,,20,202,CTGCCACTCTGCCCTCTGAG,, 6519,AA486238,,20,196,CTCTGCCCTCTGAGTTTCTG,, 6520,AA486238,,20,190,CCTCTGAGTTTCTGTAGGGT,, 40 6521,AA486238,,20,184,AGTTTCTGTAGGGTGCCCGG,, 6522,AA486238,,20,178,TGTAGGGTGCCCGGCTGCCA,, 6523,AA486238,,20,172,GTGCCCGGCTGCCACTCTGC,, 6524,AA486238,,20,166,GGCTGCCACTCTGCCCTCTG,, 6525,AA486238,,20,160,CACTCTGCCCTCTGAGAAGT,, 6526,AA486238,,20,154,GCCCTCTGAGAAGTGTAAGA,, 6527,AA486238,,20,148,TGAGAAGTGTAAGAAGGCCA,, 6528,AA486238,,20,142,GTGTAAGAAGGCCACAGAGC,, 6529,AA486238,,20,136,GAAGGCCACAGAGCATGGGG,, 6530,AA486238,,20,130,CACAGAGCATGGGGGTGTTG,, 6531,AA486238,,20,124,GCATGGGGGTGTTGGCGATG,, 50 6532,AA486238,,20,118,GGGTGTTGGCGATGAGGAGC,, 6533,AA486238,,20,112,TGGCGATGAGGAGCGGTAAA,, 6534,AA486238,,20,106,TGAGGAGCGGTAAAGCAGTG,, 6535,AA486238,,20,100,GCGGTAAAGCAGTGCTAGTG,, 55 6536,AA486238,,20,94,AAGCAGTGCTAGTGATCTAA,, 6537, AA486238, 20,88, TGCTAGTGATCTAATAGCCA, 6538,AA486238,,20,82,TGATCTAATAGCCAAATACA,, 6539,AA486238,,20,76,AATAGCCAAATACATTAACA,, 6540,AA486238,,20,70,CAAATACATTAACACGGACA,, 60 6541,AA486238,,20,64,CATTAACACGGACACTGGAA,, 6542, AA486238, 20,58, CACGGACACTGGAAGAGATT., 6543,AA486238,,20,52,CACTGGAAGAGATTAAGCGG,, 6544,AA486238,,20,46,AAGAGATTAAGCGGATTTTA,, 6545,AA486238,,20,40,TTAAGCGGATTTTAAGTCAT,, 65 6546,AA486238,,20,34,GGATTTTAAGTCATCTCCTT,, 6547,AA486238,,20,28,TAAGTCATCTCCTTTGCCAA,, 6548,AA486238,,20,22,ATCTCCTTTGCCAAATGACA,, 6549,AA486238,,20,16,TTTGCCAAATGACAACCAAA,, 6550,AA486238,,20,10,AAATGACAACCAAACTAGGT,,

6551, AA486238, 20,4, CAACCAAACTAGGTGTCCCC,

(GENBANK ACCESSION NO. AA504461)

70

GGTGTCTCAGGCACTTAATAAATATTAAGGGTGACCGGTGACTCAGGCTCTGCCTCTGGGAAGTGGCATCATTTGGTGAATGAGTTT GGTCTCGGTGCCACC (SEQ ID NO: 6552)

```
6553,AA504461,,20,340,GGTGGCACCGAGACCAAACT,,
     6554,AA504461,,20,334,ACCGAGACCAAACTCATTCA,,
     6555,AA504461,,20,328,ACCAAACTCATTCACCAAAT,,
     6556,AA504461,,20,322,CTCATTCACCAAATGATGCC,,
     6557, AA504461, 20,316, CACCAAATGATGCCACTTCC,
     6558,AA504461,,20,310,ATGATGCCACTTCCCAGAGG,,
     6559,AA504461,,20,304,CCACTTCCCAGAGGCAGAGC,,
     6560,AA504461,,20,298,CCCAGAGGCAGAGCCTGAGT,
     6561,AA504461,,20,292,GGCAGAGCCTGAGTCACCGG,,
     6562,AA504461,,20,286,GCCTGAGTCACCGGTCACCC,,
     6563,AA504461,,20,280,GTCACCGGTCACCCTTAATA,,
     6564,AA504461,,20,274,GGTCACCCTTAATATTTATT,,
     6565,AA504461,,20,268,CCTTAATATTTATTAAGTGC,,
     6566,AA504461,,20,262,TATTTATTAAGTGCCTGAGA,,
     6567,AA504461,,20,256,TTAAGTGCCTGAGACACCCG,,
     6568,AA504461,,20,250,GCCTGAGACACCCGGTTACC,,
     6569,AA504461,,20,244,GACACCCGGTTACCTTGGCC,,
     6570,AA504461,,20,238,CGGTTACCTTGGCCGTGAGG,,
     6571,AA504461,,20,232,CCTTGGCCGTGAGGACACGT,,
     6572,AA504461,,20,226,CCGTGAGGACACGTGGCCTG,,
     6573,AA504461,,20,220,GGACACGTGGCCTGCACCCA,,
     6574,AA504461,,20,214,GTGGCCTGCACCCAGGTGTG,
     6575,AA504461,,20,208,TGCACCCAGGTGTGGCTGTC,,
     6576,AA504461,,20,202,CAGGTGTGGCTGTCAGGACA,,
     6577, AA504461,, 20,196, TGGCTGTCAGGACACCAGCC,,
     6578,AA504461,,20,190,TCAGGACACCAGCCTGGTGC.,
6579,AA504461,,20,184,CACCAGCCTGGTGCCCATCC,
30
     6580,AA504461,,20,178,CCTGGTGCCCATCCTCCCGA,,
     6581,AA504461,,20,172,GCCCATCCTCCCGACCCCTA,,
     6582,AA504461,,20,166,CCTCCCGACCCCTACCCACT,,
     6583,AA504461,,20,160,GACCCCTACCCACTTCCATT,,
     6584,AA504461,,20,154,TACCCACTTCCATTCCCGTG,,
     6585,AA504461,,20,148,CTTCCATTCCCGTGGTCTCC,,
     6586,AA504461,,20,142,TTCCCGTGGTCTCCTTGCAC,,
     6587,AA504461,,20,136,TGGTCTCCTTGCACTTTCTC,,
     6588,AA504461,,20,130,CCTTGCACTTCTCAGTTCA,,
     6589,AA504461,,20,124,ACTTTCTCAGTTCAGAGTTG,,
     6590,AA504461,,20,118,TCAGTTCAGAGTTGTACACT,,
     6591, AA504461, 20,112, CAGAGTTGTACACTGTGTAC,
     6592,AA504461,,20,106,TGTACACTGTGTACATTTGG,,
     6593,AA504461,,20,100,CTGTGTACATTTGGCATTTG,,
     6594,AA504461,,20,94,ACATTTGGCATTTGTGTTAT,,
     6595,AA504461,,20,88,GGCATTTGTGTTATTATTTT,,
     6596,AA504461,,20,82,TGTGTTATTATTTTGCACTG,,
     6597,AA504461,,20,76,ATTATTTTGCACTGTTTTCT,,
50
     6598,AA504461,,20,70,TTGCACTGTTTTCTGTCGTG,,
     6599,AA504461,,20,64,TGTTTTCTGTCGTGTGTGTT,,
     6600,AA504461,,20,58,CTGTCGTGTGTGTTGGGATG,,6601,AA504461,,20,52,TGTGTGTTTGGGATGGGATCA,,
     6602,AA504461,,20,46,TTGGGATGGGATCACAGGCC,,
55
     6603, AA504461,, 20,40, TGGGATCACAGGCCAGGGAA,,
     6604,AA504461,,20,34,CACAGGCCAGGGAAAGCCCG,,
     6605,AA504461,,20,28,CCAGGGAAAGCCCGTGTCAA,,
     6606,AA504461,,20,22,AAAGCCCGTGTCAATGAATG,,
     6607, AA504461,, 20,16, CGTGTCAATGAATGCCGGGG,
     6608,AA504461,,20,10,AATGAATGCCGGGGACAGAG,,
     6609,AA504461,,20,4,TGCCGGGGACAGAGAGGGGC,,
     (GENBANK ACCESSION NO. AA448400)
     TTTAAGGTTGGAATTGCTTTTATTGGGGGCGGATACCGCAAGCCCCGCCCACGGTCAGGTTAGTGTTCTGCCCTTGCAGAGGCGCCA
     GAGCCTGACACCTCCACCTGCCACCCGGCCCGGGGTGTAGTGGAACATGCAAAGCTCCGACGGTGGAGGCAGGGGTGGTCGCTGCTG
     GAGACGGCAGCGCACCCCAGTGTGGGGCTCCACAAGCTGGAGGGGCCCCTGGACCTACCAGGAGGACAGGTCTGCAGTTCCC
     AGCCATGCGGCTGGAACGTCCGCCTCCCCACTGGGTCTGGGTCCTCGGGGCCTGGGGTTAGAGGCCGACATGGAAGGACTTACTA
     GGGGAACAGAGGCTGAGGCTGACGCC
     (SEQ ID NO: 6610)
70
     6611,AA448400,,20,437,GGCGTCAGCCTCCAGCCTCT,,
```

6612,AA448400,,20,431,AGCCTCCAGCCTCTGTTCCC, 6613,AA448400,,20,425,CAGCCTCTGTTCCCCTAGTA,, 6614,AA448400,,20,419,CTGTTCCCCTAGTAAGTCCT,, 6615,AA448400,,20,413,CCCTAGTAAGTCCTTCCATG,,

6616,AA448400,,20,407,TAAGTCCTTCCATGTCGGCC,, 6617,AA448400,,20,401,CTTCCATGTCGGCCTCTAAC,, 6618,AA448400,,20,395,TGTCGGCCTCTAACCCCAGG,, 6619,AA448400,,20,389,CCTCTAACCCCAGGCCCCGA,, 6620,AA448400,,20,383,ACCCCAGGCCCCGAGGACCC,, 6621,AA448400,,20,377,GGCCCCGAGGACCCAGACCC,, 6622,AA448400,,20,371,GAGGACCCAGACCCAGTGGG,, 6623,AA448400,,20,365,CCAGACCCAGTGGGGAGGCG,, 6624,AA448400,,20,359,CCAGTGGGGAGGCGGACGTT,, 6625,AA448400,,20,353,GGGAGGCGGACGTTCCAGCC,, 6626,AA448400,,20,347,CGGACGTTCCAGCCGGCATG,, 6627,AA448400,,20,341,TTCCAGCCGGCATGGCTGGG,, 6628,AA448400,,20,335,CCGGCATGGCTGGGAACTGC,, 6629,AA448400,,20,329,TGGCTGGGAACTGCAGACCT,, 15 6630,AA448400,,20,323,GGAACTGCAGACCTGTCCTC,, 6631,AA448400,,20,317,GCAGACCTGTCCTCCTGGTA,, 6632,AA448400,,20,311,CTGTCCTCCTGGTAGGTCCA,, 6633,AA448400,,20,305,TCCTGGTAGGTCCAGGGGCC,, 6634,AA448400,,20,299,TAGGTCCAGGGGCCCCTCCA,, 20 6635,AA448400,,20,293,CAGGGGCCCCTCCAGCTTGT,, 6636,AA448400,,20,287,CCCCTCCAGCTTGTGGAGCC,, 6637,AA448400,,20,281,CAGCTTGTGGAGCCCCACAC, 6638,AA448400,,20,275,GTGGAGCCCCACACTGGGGT,, 6639,AA448400,,20,269,CCCCACACTGGGGTGCCGCC,, 25 6640,AA448400,,20,263,ACTGGGGTGCCGCCTGCCCG,, 6641,AA448400,,20,257,GTGCCGCCTGCCCGTCTCTC,, 6642,AA448400,,20,251,CCTGCCCGTCTCTCTCCCAT,, 6643,AA448400,,20,245,CGTCTCTCTCCCATGGAGCC,, 6644,AA448400,,20,239,TCTCCCATGGAGCCCCAGCC,, 6645,AA448400,,20,233,ATGGAGCCCCAGCCCCTTTG,, 6646,AA448400,,20,227,CCCCAGCCCCTTTGGGCCCA,, 6647,AA448400,,20,221,CCCCTTTGGGCCCAGGGACA,, 6648,AA448400,,20,215,TGGGCCCAGGGACACCAGCC,, 6649, AA448400,, 20, 209, CAGGGACACCAGCCAGGCTC,, 35 6650,AA448400,,20,203,CACCAGCCAGGCTCTGTGCT,, 6651,AA448400,,20,197,CCAGGCTCTGTGCTGACCCT,, 6652,AA448400,,20,191,TCTGTGCTGACCCTCCTGTT,, 6653,AA448400,,20,185,CTGACCCTCCTGTTGCACCC,, 6654,AA448400,,20,179,CTCCTGTTGCACCCAGCCCT,, 40 6655,AA448400,,20,173,TTGCACCCAGCCCTGGTCTC,, 6656,AA448400,,20,167,CCAGCCCTGGTCTCAGCAGC,, 6657,AA448400,,20,161,CTGGTCTCAGCAGCGACCAC,, 6658,AA448400,,20,155,TCAGCAGCGACCACCCCTGC,, 6659,AA448400,,20,149,GCGACCACCCCTGCCTCCAC,, 45 6660,AA448400,,20,143,ACCCCTGCCTCCACCGTCGG,, 6661,AA448400,,20,137,GCCTCCACCGTCGGAGCTTT,, 6662,AA448400,,20,131,ACCGTCGGAGCTTTGCATGT,, 6663,AA448400,,20,125,GGAGCTTTGCATGTTCCACT,, 6664,AA448400,,20,119,TTGCATGTTCCACTACACCC,, 50 6665,AA448400,,20,113,GTTCCACTACACCCCGGGCG,, 6666,AA448400,,20,107,CTACACCCCGGGCGGGTGGC, 6667, AA448400, 20,101, CCCGGGCGGGTGGCAGGTGG, 6668, AA448400,, 20,95, CGGGTGGCAGGTGGAGGTGT,, 6669,AA448400,,20,89,GCAGGTGGAGGTGTCAGGCT,, 55 6670,AA448400,,20,83,GGAGGTGTCAGGCTCTGGCG., 6671,AA448400,,20,77,GTCAGGCTCTGGCGCCTCTG,, 6672,AA448400,,20,71,CTCTGGCGCCTCTGCAAGGG,, 6673,AA448400,,20,65,CGCCTCTGCAAGGGCAGAAC,, 6674, AA448400, 20,59, TGCAAGGGCAGAACACTAAC, 6675,AA448400,,20,53,GGCAGAACACTAACCTGACC,, 6676,AA448400,,20,47,ACACTAACCTGACCGTGGGC,, 6677, AA448400, 20,41, ACCTGACCGTGGGCGGGGCT, 6678, AA448400, 20,35, CCGTGGGCGGGGCTTGCGGT, 6679,AA448400,,20,29,GCGGGGCTTGCGGTATCCGC,, 6680,AA448400,,20,23,CTTGCGGTATCCGCCCCAA,, 6681,AA448400,,20,17,GTATCCGCCCCCAATAAAAG,, 6682,AA448400,,20,11,GCCCCCAATAAAAGCAATTC,, 6683,AA448400,,20,5,AATAAAAGCAATTCCAACCT,, (GENBANK ACCESSION NO. AA480815) 70

CGGCTCACCATGTGTCACTCTCGCAGCTGCCACCCGACCATGACCATCCTGCAGGCCCCGACCCCGGCCCCCTCCACCATCCCGGGA
CCCCGCGTGCTCCGGTCGCTGAGATCTTCACCTTCGACCCTCTCCCGGAGCCCCGCAGCGCCCCTGCGGGCGCCCCAGCGTCNTCGCG
GGCACCGAAAGCGCAGCGCAGGGTTCTCTACCCTCGAGTGGTCCGGCGCCCAGTGCCTAGTCGAGGAACCGAACCCAGCCAAAAGG
CTTCTCTTTCTGCTGCTCACCATCGTCTTCTGCCAGATCCTGATGGCTGAAGAGGGGTGTGCCGGC
(SEQ ID NO: 6684)

6685,AA480815,,20,305,GCCGGCACACCCTCTTCAGC,, 6686,AA480815,,20,299,ACACCCTCTTCAGCCATCAG,, 6687,AA480815,,20,293,TCTTCAGCCATCAGGATCTG,, 6688,AA480815,,20,287,GCCATCAGGATCTGGCAGAA,, 6689,AA480815,,20,281,AGGATCTGGCAGAAGACGAT,, 6690,AA480815,,20,275,TGGCAGAAGACGATGGTGAG,, 6691,AA480815,,20,269,AAGACGATGGTGAGCAGCAG,, 6692,AA480815,,20,263,ATGGTGAGCAGCAGAAAGAG,, 6693,AA480815,,20,257,AGCAGCAGAAAGAGAAGCCT,, 10 6694,AA480815,,20,251,AGAAAGAGAAGCCTTTTGGC,, 6695,AA480815,,20,245,AGAAGCCTTTTGGCTGGGTT,, 6696,AA480815,,20,239,CTTTTGGCTGGGTTCGGTTC,, 6697, AA480815,, 20, 233, GCTGGGTTCGGTTCCTCGAC,, 6698,AA480815,,20,227,TTCGGTTCCTCGACTAGGCA,, 6699, AA480815, 20, 221, TCCTCGACTAGGCACTGGCG, 6700,AA480815,,20,215,ACTAGGCACTGGCGCCGGAC,, 6701,AA480815,,20,209,CACTGGCGCCGGACCACTCG,, 6702,AA480815,,20,203,CGCCGGACCACTCGAGGGTA,, 6703,AA480815,,20,197,ACCACTCGAGGGTAGAGAAC,, 20 6704,AA480815,,20,191,CGAGGGTAGAGAACCCTGCG,, 6705,AA480815,,20,185,TAGAGAACCCTGCGCTGCGC,, 6706,AA480815,,20,179,ACCCTGCGCTGCGCTTTCGG,, 6707,AA480815,,20,173,CGCTGCGCTTTCGGTGCCCG,, 6708,AA480815,,20,167,GCTTTCGGTGCCCGCGANGA,, 25 6709,AA480815,,20,161,GGTGCCCGCGANGACGCTGG,, 6710,AA480815,,20,155,CGCGANGACGCTGGGGCGCC,, 6711,AA480815,,20,149,GACGCTGGGGCGCCCGCAGG,, 6712,AA480815,,20,143,GGGGCGCCCGCAGGGGCGCT,, 6713,AA480815,,20,137,CCCGCAGGGGCGCTGCGGGC,, 30 6714,AA480815,,20,131,GGGGCGCTGCGGGCTCCGGG,, 6715,AA480815,,20,125,CTGCGGGCTCCGGGAGAGGG, 6716,AA480815,,20,119,GCTCCGGGAGAGGGTCGAAG,, 6717,AA480815,,20,113,GGAGAGGGTCGAAGGTGAAG,, 6718,AA480815,,20,107,GGTCGAAGGTGAAGATCTCA,, 6719,AA480815,,20,101,AGGTGAAGATCTCAGCGACC,, 6720,AA480815,,20,95,AGATCTCAGCGACCGGAGCA,, 6721,AA480815,,20,89,CAGCGACCGGAGCACGCGGG, 6722, AA480815,, 20,83, CCGGAGCACGCGGGGTCCCG,, 6723,AA480815,,20,77,CACGCGGGGTCCCGGGATGG,, 6724,AA480815,,20,71,GGGTCCCGGGATGGTGGAGG,, 6725,AA480815,,20,65,CGGGATGGTGGAGGGGCCG,, 6726,AA480815,,20,59,GGTGGAGGGGCCGGGGTCG,, 6727,AA480815,,20,53,GGGGGCCGGGGTCGGGGCCT,, 6728, AA480815,, 20,47, CGGGGTCGGGGCCTGCAGGA,, 45 6729,AA480815,,20,41,CGGGGCCTGCAGGATGGTCA,, 6730,AA480815,,20,35,CTGCAGGATGGTCATGGTCG,, 6731, AA480815,,20,29, GATGGTCATGGTCGGGTGGC,, 6732,AA480815,,20,23,CATGGTCGGGTGGCAGCTGC,, 6733,AA480815,,20,17,CGGGTGGCAGCTGCGAGAGT., 50 6734,AA480815,,20,11,GCAGCTGCGAGAGTGACACA,, 6735,AA480815,,20,5,GCGAGAGTGACACATGGTGA,, (GENBANK ACCESSION NO. AA102454) TGTGATTGCATGGGGTAACCNTTTATTTTATTTAACAGTACATTTGGAAGAAGATAAGGCAACAAGGCAAAATTTCTGTAATGTTG CTAGCATTTCCCAAGGTAAAGCCAGGAAACAAACTTGTGTCCTTTCTATAAGAACTTCTAAGTGATGTCCCCTCTAACTCCATGGA 55 CAGACACTAGTGGTGGTGAAGTTCATAAAAGTTTTTGAGGTGGCAAACAGCTTATTTTGTCCTTTATCATAATTGGTTTACAAATTGG ATGCCTGGTTTTGGCATACTGGTTCAGTTGATCAAGCGCAGGATCCCTTTTGGTCTTTGTAAGACCANGATGGTATAAGGCCGAATA GACAGAGGTGAGTCTTCTCCTGGACTCTCCAGATGCCTTGACAAGANTACTTCATGATATACCATGTTTCCCAGTTGGGCTCATG GGAAATGGGTAATCTTGGGACTGGTTGTTTGGGTAGAANAACAGCTGGCATTTTTAACCTGGAAG 60 (SEQ ID NO: 6736) 6737,AA102454,,20,569,CTTCCAGGTTAAAAATGCCA,, 6738,AA102454,,20,563,GGTTAAAAATGCCAGCTGTT,, 6739,AA102454,,20,557,AAATGCCAGCTGTTNTTCTA,, 6740,AA102454,,20,551,CAGCTGTTNTTCTACCCAAA,, 65 6741,AA102454,,20,545,TTNTTCTACCCAAACAACCA,, 6742, AA 102454, 20,539, TACCCAAACAACCAGTCCCA,, 6743,AA102454,,20,533,AACAACCAGTCCCAAGATTA,, 6744,AA102454,,20,527,CAGTCCCAAGATTACCCATT,, 70 6745,AA102454,,20,521,CAAGATTACCCATTTCCCAT,,

6746,AA102454,20,515,TACCCATTTCCCATGAGCCC, 6747,AA102454,20,509,TTTCCCATGAGCCCAACTGG, 6748,AA102454,20,503,ATGAGCCCAACTGGGAAACA, 6749,AA102454,20,497,CCAACTGGGAAACATGGTAT,

6750,AA102454,,20,491,GGGAAACATGGTATATCATG,,

6751.AA102454.,20,485,CATGGTATATCATGAAGTAN,, 6752,AA102454,,20,479,ATATCATGAAGTANTCTTGT,, 6753,AA102454,,20,473,TGAAGTANTCTTGTCAAGGC,, 6754,AA102454,,20,467,ANTCTTGTCAAGGCATCTGG,, 6755,AA102454,,20,461,GTCAAGGCATCTGGAGAGTC,, 6756,AA102454,,20,455,GCATCTGGAGAGTCCAGGAG, 6757,AA102454,,20,449,GGAGAGTCCAGGAGAGAAGA,, 6758,AA102454,,20,443,TCCAGGAGAGAAGACTCACC,, 6759,AA102454,,20,437,AGAGAAGACTCACCTCTGTC,, 6760,AA102454,,20,431,GACTCACCTCTGTCGCTTGG,, 6761,AA102454,,20,425,CCTCTGTCGCTTGGGTTNAA,, 6762, AA102454, 20,419, TCGCTTGGGTTNAACCAAGA, 6763,AA102454,,20,413,GGGTTNAACCAAGAGACAGG,, 6764,AA102454,,20,407,AACCAAGAGACAGGTTTTGT,, 6765,AA102454,,20,401,GAGACAGGTTTTGTAGAATA,, 6766,AA102454,,20,395,GGTTTTGTAGAATATTGATT,, 6767,AA102454,,20,389,GTAGAATATTGATTGGGTAA,, 6768,AA102454,,20,383,TATTGATTGGGTAAATAGTA,, 6769,AA102454,,20,377,TTGGGTAAATAGTAAATCGT,, 6770,AA102454,,20,371,AAATAGTAAATCGTTCTCCT,, 6771,AA102454,,20,365,TAAATCGTTCTCCTTACAAT,, 6772,AA102454,,20,359,GTTCTCCTTACAATCAAGTT,, 6773,AA102454,,20,353,CTTACAATCAAGTTCTTGAC,, 6774, AA102454, 20,347, ATCAAGTTCTTGACCCCTAT, 6775,AA102454,,20,341,TTCTTGACCCCTATTCGGCC,, 6776,AA102454,,20,335,ACCCCTATTCGGCCTTATAC,, 6777, AA102454, 20,329, ATTCGGCCTTATACCATCNT, 6778,AA102454,,20,323,CCTTATACCATCNTGGTCTT,, 6779,AA102454,,20,317,ACCATCNTGGTCTTACAAAG,, 6780,AA102454,,20,311,NTGGTCTTACAAAGACCAAA,, 6781,AA102454,,20,305,TTACAAAGACCAAAAGGGAT,, 6782,AA102454,,20,299,AGACCAAAAGGGATCCTGCG,, 6783,AA102454,,20,293,AAAGGGATCCTGCGCTTGAT,, 6784,AA102454,,20,287,ATCCTGCGCTTGATCAACTG,, 6785,AA102454,,20,281,CGCTTGATCAACTGAACCAG,, 6786,AA102454,,20,275,ATCAACTGAACCAGTATGCC,, 6787,AA102454,,20,269,TGAACCAGTATGCCAAAACC,, 6788,AA102454,,20,263,AGTATGCCAAAACCAGGCAT,, 6789,AA102454,,20,257,CCAAAACCAGGCATCCAATT,, 6790,AA102454,,20,251,CCAGGCATCCAATTTGTAAA,, 6791,AA102454,,20,245,ATCCAATTTGTAAACCAATT,, 6792,AA102454,,20,239,TTTGTAAACCAATTATGATA,, 6793,AA102454,,20,233,AACCAATTATGATAAAGGAC,, 6794,AA102454,,20,227,TTATGATAAAGGACAAAATA,, 6795,AA102454,,20,221,TAAAGGACAAAATAAGCTGT,, 6796,AA102454,,20,215,ACAAAATAAGCTGTTTGCCA,, 6797,AA102454,,20,209,TAAGCTGTTTGCCACCTCAA,, 6798,AA102454,,20,203,GTTTGCCACCTCAAAAACTT,, 6799,AA102454,,20,197,CACCTCAAAAACTTTTATGA,, 6800,AA102454,,20,191,AAAAACTTTTATGAACTTCA,, 6801,AA102454,,20,185,TTTTATGAACTTCACCACCA,, 6802,AA102454,,20,179,GAACTTCACCACCACTAGTG,, 6803,AA102454,,20,173,CACCACCACTAGTGTCTGTC,, 6804,AA102454,,20,167,CACTAGTGTCTGTCCATGGA,, 55 6805,AA102454,,20,161,TGTCTGTCCATGGAGTTAGA,, 6806,AA102454,,20,155,TCCATGGAGTTAGAGGGGAC,, 6807,AA102454,,20,149,GAGTTAGAGGGGACATCACT,, 6808,AA102454,,20,143,GAGGGGACATCACTTAGAAG,, 6809,AA102454,,20,137,ACATCACTTAGAAGTTCTTA,, 6810,AA102454,,20,131,CTTAGAAGTTCTTATAGAAA,, 6811,AA102454,,20,125,AGTTCTTATAGAAAGGACAC,, 6812,AA102454,,20,119,TATAGAAAGGACACAAGTTT,, 6813,AA102454,,20,113,AAGGACACAAGTTTGTTTCC,, 6814,AA102454,,20,107,ACAAGTTTGTTTCCTGGCTT,, 65 6815,AA102454,,20,101,TTGTTTCCTGGCTTTACCTT,, 6816,AA102454,,20,95,CCTGGCTTTACCTTGGGAAA,, 6817,AA102454,,20,89,TTTACCTTGGGAAAATGCTA,, 6818,AA102454,,20,83,TTGGGAAAATGCTAGCAACA,, 6819,AA102454,,20,77,AAATGCTAGCAACATTACAG,, 70 6820,AA102454,,20,71,TAGCAACATTACAGAAATTT,, 6821,AA102454,,20,65,CATTACAGAAATTTTGCCTT,, 6822,AA102454,,20,59,AGAAATTTTGCCTTGTTGCC,, 6823,AA102454,,20,53,TTTGCCTTGTTGCCTTATCT,, 6824,AA102454,,20,47,TTGTTGCCTTATCTTCTTCC,, 75 6825,AA102454,,20,41,CCTTATCTTCTTCCAAATGT,

PCT/US02/13135

WO 02/085308 6826,AA102454,,20,35,CTTCTTCCAAATGTACTGTT,, 6827,AA102454,,20,29,CCAAATGTACTGTTAAATAA,, 6828,AA102454,,20,23,GTACTGTTAAATAAAAATAA,, 6829,AA102454,,20,17,TTAAATAAAAATAAANGGTT,, 6830,AA102454,,20,11,AAAAATAAANGGTTACCCCA,, 6831, AA102454,,20,5, AAANGGTTACCCCATGCAAT,, (GENBANK ACCESSION NO. AA258396) TTTTTTTTTTTTTAAAAGTAATATCAGAGTTTTAATTTCAACCAGCTGGCACAACAATGAAAGTGTCAGACTTTCTGAAAGTACTC GAGAAATAATGAATAAATTCTTAATGTTTTCCCCTCCACCGCCCTTTTTTATTCTCCAAGATTAGGAATTACTACGGATTAGGTTTTT AATCAAAATACATTAAAATTACAGTACATCATCGCTCCTAGAAAATTCACCATACAAGACGATCCTTTCAAAGGTTCATAAA TAAAAGTCTTCTTGACTCGAAATCGTTTCCTGCATCGTGATGAAAAGTATGCAGAAAACTAAGAAGAATCGC (SEQ ID NO: 6832) 6833,AA258396,,20,403,GCGATTCTTCTTAGTTTTCT,, 6834,AA258396,,20,397,CTTCTTAGTTTTCTGCATAC,, 6835,AA258396,,20,391,AGTTTTCTGCATACTTTTCA,, 6836,AA258396,,20,385,CTGCATACTTTTCATCACGA,, 6837,AA258396,,20,379,ACTTTTCATCACGATGCAGG,, 6838,AA258396,,20,373,CATCACGATGCAGGAAACGA., 6839,AA258396,,20,367,GATGCAGGAAACGATTTCGA,, 6840,AA258396,,20,361,GGAAACGATTTCGAGTCAAG,, 6841,AA258396,,20,355,GATTTCGAGTCAAGAAGACT,, 6842,AA258396,,20,349,GAGTCAAGAAGACTTTTATT,, 6843,AA258396,,20,343,AGAAGACTTTTATTTATGAA,, 6844,AA258396,,20,337,CTTTTATTTATGAACCTTTG,, 6845,AA258396,,20,331,TTTATGAACCTTTGAAAGGA,, 6846,AA258396,,20,325,AACCTTTGAAAGGATCGTCT,, 6847,AA258396,,20,319,TGAAAGGATCGTCTTGTATG,, 6848, AA258396, 20,313, GATCGTCTTGTATGGTGAAT, 6849,AA258396,,20,307,CTTGTATGGTGAATTTTCTA,, 6850,AA258396,,20,301,TGGTGAATTTTCTAGGAGCG,, 6851,AA258396,,20,295,ATTTTCTAGGAGCGATGATG,, 6852,AA258396,,20,289,TAGGAGCGATGATGTACTGT,, 6853,AA258396,,20,283,CGATGATGTACTGTAATTTT,, 6854,AA258396,,20,277,TGTACTGTAATTTTATTTTA,, 6855,AA258396,,20,271,GTAATTTTATTTTAATGTAT,, 6856,AA258396,,20,265,TTATTTTAATGTATTTTGAT,, 6857,AA258396,,20,259,TAATGTATTTTGATTTATGA,,

6858,AA258396,,20,253,ATTTTGATTTATGATTATTT, 6859,AA258396,,20,247,ATTTATGATTATTTATTAGT,, 6860,AA258396,,20,241,GATTATTTATTAGTTTTTTT,, 6861,AA258396,,20,235,TTATTAGTTTTTTTTAAAT,, 6862,AA258396,,20,229,GTTTTTTTTAAATGCTTGT,,

15

20

35

6863,AA258396,,20,223,TTTTAAATGCTTGTTCTAAG,, 45 6864,AA258396,,20,217,ATGCTTGTTCTAAGACATTT,, 6865, AA258396, 20, 211, GTTCTAAGACATTTCTGAAT,, 6866,AA258396,20,205,AGACATTTCTGAATGTAGAC,, 6867,AA258396,,20,199,TTCTGAATGTAGACCATTTT,,

50 6868,AA258396,,20,193,ATGTAGACCATTTTCCAAAA,, 6869,AA258396,,20,187,ACCATTTTCCAAAAAGGAAA,, 6870,AA258396,,20,181,TTCCAAAAAGGAAACTTTAT,, 6871,AA258396,,20,175,AAAGGAAACTTTATTTTCAA,, 6872,AA258396,,20,169,AACTTTATTTTCAAAAACCT,,

6873,AA258396,,20,163,ATTTTCAAAAACCTAATCCG,, 6874,AA258396,,20,157,AAAAACCTAATCCGTAGTAA,, 6875,AA258396,,20,151,CTAATCCGTAGTAATTCCTA,, 6876,AA258396,,20,145,CGTAGTAATTCCTAATCTTG,, 6877,AA258396,,20,139,AATTCCTAATCTTGGAGAAT,,

6878,AA258396,,20,133,TAATCTTGGAGAATAAAAAA,, 6879,AA258396,,20,127,TGGAGAATAAAAAAGGGCGG,, 6880,AA258396,,20,121,ATAAAAAAGGGCGGTGGAGG,, 6881,AA258396,,20,115,AAGGGCGGTGGAGGGGAAAA,,

6882,AA258396,,20,109,GGTGGAGGGGAAAACATTAA,, 6883,AA258396,,20,103,GGGGAAAACATTAAGAATTT,, 65 6884,AA258396,,20,97,AACATTAAGAATTTATTCAT,, 6885,AA258396,,20,91,AAGAATTTATTCATTATTTC,, 6886,AA258396,,20,85,TTATTCATTATTTCTCGAGT,, 6887,AA258396,,20,79,ATTATTTCTCGAGTACTTTC...

6888,AA258396,,20,73,TCTCGAGTACTTTCAGAAAG,, 70 6889,AA258396,,20,67,GTACTTTCAGAAAGTCTGAC,, 6890,AA258396,,20,61,TCAGAAAGTCTGACACTTTC,, 6891,AA258396,,20,55,AGTCTGACACTTTCATTGTT,, 6892,AA258396,,20,49,ACACTTTCATTGTTGCCA,, 75 6893,AA258396,,20,43,TCATTGTTGTCCAGCTGGT,,

6894,AA258396,,20,37,TTGTGCCAGCTGGTTGAAAT,, 6895,AA258396,,20,31,CAGCTGGTTGAAATTAAAAC,, 6896,AA258396,,20,25,GTTGAAATTAAAACTCTGAT,, 6897,AA258396,,20,19,ATTAAAACTCTGATATTACT,, 6898,AA258396,,20,13,ACTCTGATATTACTTTTAAA,, 6899,AA258396,,20,7,ATATTACTTTTAAAAAAAAAA,, 6900,AA258396,,20,1,CTTTTAAAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. AA497002)

10 TTTTCCATCCTAAGTACCATTCTCTCATTTGGGCCCTTCTAGGGTTGGGGCCCTGAGCTTGGTTTGTAGAAGTTTGGTGCTAATATA ACCATAGCTTTAATCCCCATGAAGGACAGTGTAGACCTCATCTTTGTCTGCTCCCCGCTGCCTTTCAGTTTTACGTGATCCATCAAGA TCTTTTGAACTGTGGAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGG

(SEO ID NO: 6901) 6902,AA497002,,20,467,CCAATCTTCATGGACCAGAG,, 6903,AA497002,,20,461,TTCATGGACCAGAGATCTTG,, 6904,AA497002,,20,455,GACCAGAGATCTTGGATGTT,, 20 6905,AA497002,,20,449,AGATCTTGGATGTTCCTTCC,, 6906,AA497002,,20,443,TGGATGTTCCTTCCACAGTT,, 6907,AA497002,,20,437,TTCCTTCCACAGTTCAAAAG,, 6908,AA497002,,20,431,CCACAGTTCAAAAGACCCCT,, 6909,AA497002,,20,425,TTCAAAAGACCCCTTTCGTC,, 25 6910,AA497002,,20,419,AGACCCCTTTCGTCACCCAC,, 6911, AA497002, 20, 413, CTTTCGTCACCCACCCTGGG, 6912,AA497002,,20,407,TCACCCACCCTGGGCACTGT,, 6913,AA497002,,20,401,ACCCTGGGCACTGTTTTCGA,, 6914,AA497002,,20,395,GGCACTGTTTTCGAGTTCAG,, 30 6915,AA497002,,20,389,GTTTTCGAGTTCAGGTGAAT,, 6916,AA497002,,20,383,GAGTTCAGGTGAATTAGCCT,, 6917,AA497002,,20,377,AGGTGAATTAGCCTCAATCC,, 6918,AA497002,,20,371,ATTAGCCTCAATCCGCCGTG,, 6919,AA497002,,20,365,CTCAATCCGCCGTGTTCACT,, 6920,AA497002,,20,359,CCGCCGTGTTCACTGGCTCC,, 6921,AA497002,,20,353,TGTTCACTGGCTCCCATAGC,, 6922, AA497002, 20, 347, CTGGCTCCCATAGCCCTCTT, 6923,AA497002,,20,341,CCCATAGCCCTCTTGATGGA,, 6924,AA497002,,20,335,GCCCTCTTGATGGATCACGT,, 6925,AA497002,,20,329,TTGATGGATCACGTAAAACT,, 6926,AA497002,,20,323,GATCACGTAAAACTGAAAGG,, 6927,AA497002,,20,317,GTAAAACTGAAAGGCAGCGG,, 6928, AA497002, 20, 311, CTGAAAGGCAGCGGGAGCA,

6929,AA497002,,20,305,GGCAGCGGGGAGCAGACAAA,, 6930,AA497002,,20,299,GGGGAGCAGACAAAGATGAG,, 45 6931,AA497002,,20,293,CAGACAAAGATGAGGTCTAC,, 6932, AA497002, 20, 287, AAGATGAGGTCTACACTGTC, 6933,AA497002,,20,281,AGGTCTACACTGTCCTTCAT,,

6934,AA497002,,20,275,ACACTGTCCTTCATGGGGAT,, 6935,AA497002,,20,269,TCCTTCATGGGGATTAAAGC,, 50 6936,AA497002,,20,263,ATGGGGATTAAAGCTATGGT,, 6937,AA497002,,20,257,ATTAAAGCTATGGTTATATT,, 6938,AA497002,,20,251,GCTATGGTTATATTAGCACC,, 6939,AA497002,,20,245,GTTATATTAGCACCAAACTT,,

55 6940,AA497002,,20,239,TTAGCACCAAACTTCTACAA,, 6941,AA497002,,20,233,CCAAACTTCTACAAACCAAG,, 6942,AA497002,,20,227,TTCTACAAACCAAGCTCAGG,, 6943,AA497002,,20,221,AAACCAAGCTCAGGGCCCCA,, 6944,AA497002,,20,215,AGCTCAGGGCCCCAACCCTA,,

6945, AA497002, 20, 209, GGGCCCCAACCCTAGAAGGG, 6946,AA497002,,20,203,CAACCCTAGAAGGGCCCAAA,, 6947, AA497002, 20, 197, TAGAAGGGCCCAAATGAGAG, 6948, AA497002, 20, 191, GGCCCAAATGAGAGAATGGT, 6949,AA497002,,20,185,AATGAGAGAATGGTACTTAG,,

6950,AA497002,,20,179,AGAATGGTACTTAGGGATGG,, 6951,AA497002,,20,173,GTACTTAGGGATGGAAAACG,, 6952, AA497002, 20,167, AGGGATGGAAAACGGCCTG, 6953,AA497002,,20,161,GGAAAACGGGCCTGGCTAGA,, 6954,AA497002,,20,155,CGGGCCTGGCTAGAGCTTCG,,

70 6955,AA497002,,20,149,TGGCTAGAGCTTCGGGTGTG,, 6956,AA497002,,20,143,GAGCTTCGGGTGTGTGTCT, 6957, AA497002, 20,137, CGGGTGTGTGTGTCTGT, 6958,AA497002,,20,131,TGTGTGTCTGTCTGTGTGTA,, 6959, AA497002, 20,125, TCTGTCTGTGTGTATGCATA, 75 6960,AA497002,,20,119,TGTGTGTATGCATACATATG,,

6961,AA497002,,20,113,TATGCATACATATGTGTGTA,, 6962, AA497002, 20, 107, TACATATGTGTGTATATATG,, 6963,AA497002,,20,101,TGTGTGTATATATGGTTTTG,, 6964,AA497002,,20,95,TATATATGGTTTTGTCAGGT,, 6965,AA497002,,20,89,TGGTTTTGTCAGGTGTGTAA,, 6966,AA497002,,20,83,TGTCAGGTGTGTAAATTTGC,, 6967, AA497002, 20, 77, GTGTGTAAATTTGCAAATTG., 6968,AA497002,,20,71,AAATTTGCAAATTGTTTCCT,, 6969,AA497002,,20,65,GCAAATTGTTTCCTTTATAT,, 10 6970,AA497002,,20,59,TGTTTCCTTTATATATGTAT,, 6971,AA497002,,20,53,CTTTATATATGTATGTATAT,, 6972,AA497002,,20,47,ATATGTATGTATATATATAT, 6973,AA497002,,20,41,ATGTATATATATATATATATAAAA,, 6974, AA497002, 20, 35, ATATATATATGAAAATATAT,, 6975,AA497002,,20,29,ATATGAAAATATATATATAT, 15 6976,AA497002,,20,23,AAATATATATATATATATGAAA,,

6977,AA497002,,20,17,ATATATATATGAAAAATAAA, 6978,AA497002,,20,11,ATATGAAAAATAAAGCTTAA,,

6979,AA497002,,20,5,AAAATAAAGCTTAATTGTCC,, 20 (GENBANK ACCESSION NO. AA282906)

- 30 6981,AA282906,,20,530,GTAGCAGGATCTGCTGTGCT, 6982,AA282906,,20,524,GGATCTGCTGTGCTGTCGTG, 6983,AA282906,,20,518,GCTGTGCTGTCGTGATCCAA,, 6984,AA282906,,20,512,CTGTCGTGATCCAAGGACTG, 6985,AA282906,,20,506,TGATCCAAGGACTGTCTTCG,
- 35 6986,AA282906,,20,500,AAGGACTGTCTTCGTCTGGG,, 6987,AA282906,,20,494,TGTCTTCGTCTGGGATGGGT,, 6988,AA282906,,20,488,CGTCTGGGATGGGTGTACAG,, 6989,AA282906,,20,482,GGATGGGTGTACAGTAGAAA,, 6990,AA282906,,20,476,GTGTACAGTAGAAAAAGTGT,,
- 40 6991,AA282906,,20,470,AGTAGAAAAAAGTGTAAAAGA,, 6992,AA282906,,20,464,AAAAGTGTAAAAGATGTAAC,, 6993,AA282906,,20,458,GTAAAAGATGTAACCTCCTG,, 6994,AA282906,,20,452,GATGTAACCTCCTGAAGTGC,, 6995,AA282906,,20,446,ACCTCCTGAAGTGCTGCTCC,
- 45 6996,AA282906,,20,440,TGAAGTGCTGCTCCTTTCAC,, 6997,AA282906,,20,434,GCTGCTCCTTTCACTGGAGG,, 6998,AA282906,,20,428,CCTTTCACTGGAGGAGCCGC,, 6999,AA282906,,20,422,ACTGGAGGAGCCGCTGCTCA., 7000,AA282906,,20,416,GGAGCCGCTGCTCACGTCAT,,
- 50 7001,AA282906,,20,410,GCTGCTCACGTCATCATCCA,, 7002,AA282906,,20,404,CACGTCATCATCCAGTAGGG,, 7003,AA282906,,20,398,ATCATCCAGTAGGGTTGCTG,, 7004,AA282906,,20,392,CAGTAGGGTTGCTGGGGTAG,, 7005,AA282906,,20,386,GGTTGCTGGGGTAGATGTCT,,
- 55 7006,AA282906,20,380,TGGGGTAGATGTCTTCAGGA,, 7007,AA282906,20,374,AGATGTCTTCAGGATTCGTT,, 7008,AA282906,20,368,CTTCAGGATTCGTTCTGTAT, 7009,AA282906,20,362,GATTCGTTCTGTATTCTCCT, 7010,AA282906,20,356,TTCTGTATTCTCCTTTCTGG,
- 60 7011,AA282906,20,350,ATTCTCCTTTCTGGACATAG, 7012,AA282906,20,344,CTTTCTGGACATAGCGGGTG, 7013,AA282906,20,338,GGACATAGCGGGTGCCATCA., 7014,AA282906,20,332,AGCGGGTGCCATCACGGTTA,, 7015,AA282906,20,326,TGCCATCACGGTTAACAATA,
- 65 7016,AA282906,,20,320,CACGGTTAACAATAGTTATG,, 7017,AA282906,,20,314,TAACAATAGTTATGGTAATT,, 7018,AA282906,,20,308,TAGTTATGGTAATTGGTCCA,, 7019,AA282906,,20,302,TGGTAATTGGTCCATCAAAG,, 7020,AA282906,,20,296,TTGGTCCATCAAAGGCATTG,
- 70 7021,AA282906,20,290,CATCAAAAGGCATTGGGCAGG, 7022,AA282906,20,284,AGGCATTGGGCAGGTCTGTG, 7023,AA282906,20,278,TGGGCAGGTCTGTGACTGAT, 7024,AA282906,20,272,GGTCTGTGACTGATGTACAA, 7025,AA282906,20,266,TGACTGATGTACAATCTTCT, 7026,AA282906,20,260,ATGTACAATCTTCTTCAGGT.

7027,AA282906,,20,254,AATCTTCTTCAGGTGGAGCT,, 7028,AA282906,,20,248,CTTCAGGTGGAGCTGAAGCA,, 7029,AA282906,,20,242,GTGGAGCTGAAGCATTGAAG,, 7030,AA282906,,20,236,CTGAAGCATTGAAGCAATAT,, 7031,AA282906,,20,230,CATTGAAGCAATATGTGTCA,, 7032,AA282906,,20,224,AGCAATATGTGTCATACTGG,, 7033,AA282906,,20,218,ATGTGTCATACTGGGAGGTG,, 7034,AA282906,,20,212,CATACTGGGAGGTGTTGGAT,, 7035,AA282906,,20,206,GGGAGGTGTTGGATGTGAGG,, 10 7036,AA282906,,20,200,TGTTGGATGTGAGGATGTAC,, 7037,AA282906,,20,194,ATGTGAGGATGTACACCCCT,, 7038,AA282906,,20,188,GGATGTACACCCCTGTGTTG,, 7039,AA282906,,20,182,ACACCCCTGTGTTGTTTGCT,, 7040,AA282906,,20,176,CTGTGTTGTTTGCTGCACAG,, 15 7041,AA282906,,20,170,TGTTTGCTGCACAGATGGAG,, 7042,AA282906,,20,164,CTGCACAGATGGAGTTGGGG,, 7043,AA282906,,20,158,AGATGGAGTTGGGGTGGATC,, 7044,AA282906,,20,152,AGTTGGGGTGGATCCGGGGA,, 7045,AA282906,,20,146,GGTGGATCCGGGGAATCACC,, 20 7046,AA282906,,20,140,TCCGGGGAATCACCACGTGC,, 7047, AA282906,, 20, 134, GAATCACCACGTGCCCTTCT,, 7048,AA282906,,20,128,CCACGTGCCCTTCTATGAAC,, 7049,AA282906,,20,122,GCCCTTCTATGAACCCATAC,, 7050,AA282906,,20,116,CTATGAACCCATACCTGCAG,, 25 7051,AA282906,,20,110,ACCCATACCTGCAGGTCTCA,, 7052,AA282906,,20,104,ACCTGCAGGTCTCAAATCCG,, 7053,AA282906,,20,98,AGGTCTCAAATCCGATGCTC,, 7054,AA282906,,20,92,CAAATCCGATGCTCAGAGCT,, 7055,AA282906,,20,86,CGATGCTCAGAGCTTTCTCC,, 30 7056,AA282906,,20,80,TCAGAGCTTTCTCCATCTGG,, 7057,AA282906,,20,74,CTTTCTCCATCTGGGCCATT,, 7058,AA282906,,20,68,CCATCTGGGCCATTGTGGGC, 7059,AA282906,,20,62,GGGCCATTGTGGGCAAGGTG,, 7060,AA282906,,20,56,TTGTGGGCAAGGTGCTATTG,, 7061,AA282906,,20,50,GCAAGGTGCTATTGAAAGCC,, 7062,AA282906,,20,44,TGCTATTGAAAGCCTTGCAG,, 7063,AA282906,,20,38,TGAAAGCCTTGCAGAGGTCA,, 7064,AA282906,,20,32,CCTTGCAGAGGTCAGCGGCC,, 7065, AA282906, 20, 26, AGAGGTCAGCGGCCTCCGTC, 7066,AA282906,,20,20,CAGCGGCCTCCGTCCGAGAG,, 7067,AA282906,,20,14,CCTCCGTCCGAGAGATGCTG,,

7067,AA282906,,20,14,CCTCCGTCCGAGAGATGCTG,,
7068,AA282906,,20,8,TCCGAGAGATGCTGTAGCGA,,
7069,AA282906,,20,2,AGATGCTGTAGCGACCATTT,,
(GENBANK ACCESSION NO. AA156940)
45 ATTTTGCATAACAAGTTTATTTTTTTAAAAGGCATATAGACAATAAACAAAGTAAATCAGATCTTAACTTCTGTCCTAGACTTGT

TCCGTTAAGTTCTAGTCTGTAGGCACTTGTAGTTCAATAATCGTCATCTATCAGAGTCCATTACTTTTCTTCTGTTGAATTTCACTG
TTGTTGTCTTTTCTGTTTGTTGGCTTACTTTTTTTAAGGATTTCTATTAAACCTTGTTCTGATACCTTCTCACTTAGTTGTCCATATCTTG
CCATCTGTATAAGGTAATTCTCTACTGCTTTAGTTTTTTCAGGCTTTACAAGTGCTAAGTTACTTAACCTGGCCCGGGCCGACTGATC
CAGAACTTGGGCTAAGATACTGTTTCTCANTTCTGCTTCCCTGTGCTTGCTTCCTGTTTGGGCCGCATCACCAGGATCCCCGTGTTTGG
CCGCAGCTCGGCCAGNCTCTGTCTCCTCAGCGCCTCAAGCTCCTCGGTCNGCCATGGGCTCGGCGTCAGGCTGGGANGCAGCCGCG
TTCANTCTCGCCTCGTGCC

(SEQ ID NO: 7070)

- 7071,AA156940,,20,529,GGCACGAGGCGAGANTGAAC,,
 7072,AA156940,,20,523,AGGCGAGANTGAACGCGGCT,,
 7073,AA156940,,20,511,ACGCGGCTGCNTCCCAGCCT,,
 7075,AA156940,,20,505,CTGCNTCCCAGCCTGACGCC,,
 7076,AA156940,,20,499,CCCAGCCTGACGCCGAGCCC,,
 7077,AA156940,,20,493,CTGACGCCGAGCCCATGGCN,
- 7077,AA156940,,20,493,CTGACGCCGAGCCCA1GGCN,, 7078,AA156940,,20,487,CCGAGCCCATGGCNGACCGA, 7079,AA156940,,20,481,CCATGGCNGACCGAGGGGCT,, 7080,AA156940,,20,475,CNGACCGAGGAGCTTGAGGC,, 7081.AA156940.20,469.GAGGAGCTTGAGGCGCTGAG...
- 7081,AA156940,,20,469,GAGGAGCTTGAGGCGCTGAG,, 65 7082,AA156940,,20,463,CTTGAGGCGCTGAGGAGACA,, 7083,AA156940,,20,457,GCGCTGAGGAGACAGAGNCT,, 7084,AA156940,,20,451,AGGAGACAGAGNCTGGCCGA,, 7085,AA156940,,20,445,CAGAGNCTGGCCGAGCTGCG,, 7086,AA156940,,20,439,CTGGCCGAGCTGCGGCCAAA,,
- 70 7087,AA156940,,20,433,GAGCTGCGGCCAAACACGGG,, 7088,AA156940,,20,427,CGGCCAAACACGGGGATCCT,, 7089,AA156940,,20,421,AACACGGGGATCCTGGTGAT,, 7090,AA156940,,20,409,CTGGTGATGCGGCCCAACAG,,
- 75 7092,AA156940,,20,403,ATGCGGCCCAACAGGAAGCA,,

7093,AA156940,,20,397,CCCAACAGGAAGCAAGCACA,, 7094,AA156940,,20,391,AGGAAGCAAGCACAGGGAAG,, 7095,AA156940,,20,385,CAAGCACAGGGAAGCAGAAN,, 7096,AA156940,,20,379,CAGGGAAGCAGAANTGAGAA,, 7097,AA156940,,20,373,AGCAGAANTGAGAAACAGTA,, 7098,AA156940,,20,367,ANTGAGAAACAGTATCTTAG,, 7099,AA156940,,20,361,AAACAGTATCTTAGCCCAAG,, 7100,AA156940,,20,355,TATCTTAGCCCAAGTTCTGG,, 7101,AA156940,,20,349,AGCCCAAGTTCTGGATCAGT,, 7102,AA156940,,20,343,AGTTCTGGATCAGTCGGCCC,, 7103,AA156940,,20,337,GGATCAGTCGGCCCGGGCCA,, 7104,AA156940,,20,331,GTCGGCCCGGGCCAGGTTAA,, 7105,AA156940,,20,325,CCGGGCCAGGTTAAGTAACT,, 7106,AA156940,,20,319,CAGGTTAAGTAACTTAGCAC,, 7107,AA156940,,20,313,AAGTAACTTAGCACTTGTAA,, 7108,AA156940,,20,307,CTTAGCACTTGTAAAGCCTG,, 7109,AA156940,,20,301,ACTTGTAAAGCCTGAAAAAA,, 7110,AA156940,,20,295,AAAGCCTGAAAAAACTAAAG,, 7111,AA156940,,20,289,TGAAAAAACTAAAGCAGTAG,, 7112,AA156940,,20,283,AACTAAAGCAGTAGAGAATT,, 7113,AA156940,,20,277,AGCAGTAGAGAATTACCTTA,, 7114,AA156940,,20,271,AGAGAATTACCTTATACAGA,, 7115,AA156940,,20,265,TTACCTTATACAGATGGCAA,, 7116,AA156940,,20,259,TATACAGATGGCAAGATATG,, 7117,AA156940,,20,253,GATGGCAAGATATGGACAAC,, 7118,AA156940,,20,247,AAGATATGGACAACTAAGTG,, 7119,AA156940,,20,241,TGGACAACTAAGTGAGAAGG,, 7120,AA156940,,20,235,ACTAAGTGAGAAGGTATCAG,,7121,AA156940,,20,229,TGAGAAGGTATCAGAACAAG, 30 7122,AA156940,,20,223,GGTATCAGAACAAGGTTTAA,, 7123,AA156940,,20,217,AGAACAAGGTTTAATAGAAA,, 7124,AA156940,,20,211,AGGTTTAATAGAAATCCTTA,, 7125,AA156940,,20,205,AATAGAAATCCTTAAAAAAG,, 7126,AA156940,,20,199,AATCCTTAAAAAAGTAAGCC,, 35 7127,AA156940,,20,193,TAAAAAAGTAAGCCAACAAA,, 7128,AA156940,,20,187,AGTAAGCCAACAAACAGAAA,, 7129,AA156940,,20,181,CCAACAAACAGAAAAGACAA,, 7130,AA156940,,20,175,AACAGAAAAGACAACAACAG,, 7131,AA156940,,20,169,AAAGACAACAACAGTGAAAT,, 40 7132,AA156940,,20,163,AACAACAGTGAAATTCAACA,, 7133,AA156940,,20,157,AGTGAAATTCAACAGAAGAA,, 7134,AA156940,,20,151,ATTCAACAGAAGAAAAGTAA,, 7135,AA156940,,20,145,CAGAAGAAAAGTAATGGACT,, 7136,AA156940,,20,139,AAAAGTAATGGACTCTGATG,, 7137,AA156940,,20,133,AATGGACTCTGATGAAGATG,, 7138,AA156940,,20,127,CTCTGATGAAGATGACGATT,, 7139,AA156940,,20,121,TGAAGATGACGATTATTGAA,, 7140,AA156940,,20,115,TGACGATTATTGAACTACAA,, 7141,AA156940,,20,109,TTATTGAACTACAAGTGCTC,, 50 7142,AA156940,,20,103,AACTACAAGTGCTCACAGAC,, 7143,AA156940,,20,97,AAGTGCTCACAGACTAGAAC,, 7144,AA156940,,20,91,TCACAGACTAGAACTTAACG,, 7145,AA156940,,20,85,ACTAGAACTTAACGGAACAA,, 7146,AA156940,,20,79,ACTTAACGGAACAAGTCTAG,, 55 7147,AA156940,,20,73,CGGAACAAGTCTAGGACAGA,, 7148,AA156940,,20,67,AAGTCTAGGACAGAAGTTAA,, 7149,AA156940,,20,61,AGGACAGAAGTTAAGATCTG,, 7150,AA156940,,20,55,GAAGTTAAGATCTGATTATT,, 7151,AA156940,,20,49,AAGATCTGATTATTTACTTT,, 60 7152,AA156940,,20,43,TGATTATTTACTTTGTTTAT,, 7153,AA156940,,20,37,TTTACTTTGTTTATTGTCTA,, 7154,AA156940,,20,31,TTGTTTATTGTCTATATGCC,, 7155,AA156940,,20,25,ATTGTCTATATGCCTTTTAA,, 7156,AA156940,,20,19,TATATGCCTTTTAAAAAAAT,, 7157,AA156940,,20,13,CCTTTTAAAAAAAATAAACTT,, 7158,AA156940,,20,7,AAAAAAAATAAACTTGTTATG,, 7159,AA156940,,20,1,ATAAACTTGTTATGCAAAAT,,

(GENBANK ACCESSION NO. AA485272)

^{75 7161,}AA485272,,20,292,TTATCACCAGCAGACACTGC.,

7162,AA485272,,20,286,CCAGCAGACACTGCCGGGCC,, 7163,AA485272,,20,280,GACACTGCCGGGCCTCTTCC,, 7164,AA485272,,20,274,GCCGGGCCTCTTCCCGGGGC,, 7165,AA485272,,20,268,CCTCTTCCCGGGGCACGTCC,, 7166,AA485272,,20,262,CCCGGGGCACGTCCTGAAGG,, 7167, AA485272, 20,256, GCACGTCCTGAAGGCGAGTG, 7168,AA485272,,20,250,CCTGAAGGCGAGTGTGGGCA,, 7169,AA485272,,20,244,GGCGAGTGTGGGCATAGCAT,, 7170,AA485272,,20,238,TGTGGGCATAGCATTAGCTG,, 10 7171,AA485272,,20,232,CATAGCATTAGCTGCTTCCT,, 7172,AA485272,,20,226,ATTAGCTGCTTCCTCCCCTC,, 7173,AA485272,,20,220,TGCTTCCTCCCTCCTGGCA,, 7174,AA485272,,20,214,CTCCCCTCCTGGCACCCACT,, 7175,AA485272,,20,208,TCCTGGCACCCACTGTGGCC,, 7176,AA485272,,20,202,CACCCACTGTGGCCTGGCAT,, 7177,AA485272,,20,196,CTGTGGCCTGGCATCGCATC,, 7178,AA485272,,20,190,CCTGGCATCGCATCGTGGTG,, 7179,AA485272,,20,184,ATCGCATCGTGGTGTCAA,, 7180,AA485272,,20,178,TCGTGGTGTGTCAATGCCAC,, 7181,AA485272,,20,172,TGTGTCAATGCCACAAAATC,, 20 7182,AA485272,,20,166,AATGCCACAAAATCGTGTGT,, 7183,AA485272,,20,160,ACAAAATCGTGTGTCCGTGG,, 7184,AA485272,,20,154,TCGTGTGTCCGTGGAACCAG,, 7185,AA485272,,20,148,GTCCGTGGAACCAGTCCTAG,, 25 7186,AA485272,,20,142,GGAACCAGTCCTAGCCGCGT,, 7187,AA485272,,20,136,AGTCCTAGCCGCGTGTGACA,, 7188,AA485272,,20,130,AGCCGCGTGTGACAGTCTTG,,7189,AA485272,,20,124,GTGTGACAGTCTTGCATTCT, 7190,AA485272,,20,118,CAGTCTTGCATTCTGTTTGT,, 30 7191,AA485272,,20,112,TGCATTCTGTTTGTCTCGTG,, 7192,AA485272,,20,106,CTGTTTGTCTCGTGGGGGGA,, 7193,AA485272,,20,100,GTCTCGTGGGGGGAGGTGGA,, 7194,AA485272,,20,94,TGGGGGGAGGTGGACAGTCC,, 7195,AA485272,,20,88,GAGGTGGACAGTCCTGCGGA,, 7196,AA485272,,20,82,GACAGTCCTGCGGAAATGTG,, 7197,AA485272,,20,76,CCTGCGGAAATGTGTCTTGT,, 7198,AA485272,,20,70,GAAATGTGTCTTGTCTCCAT,, 7199,AA485272,,20,64,TGTCTTGTCTCCATTTGGAT,, 7200,AA485272,,20,58,GTCTCCATTTGGATAAAAGG,, 7201,AA485272,,20,52,ATTTGGATAAAAGGAACCAA,, 7202,AA485272,,20,46,ATAAAAGGAACCAACCAACA,, 7203,AA485272,,20,40,GGAACCAACCAACAAAAAAT,, 7204,AA485272,,20,34,AACCAACAACAATGCCATC,, 7205,AA485272,,20,28,CAAACAATGCCATCACTGGA,, 7206,AA485272,,20,22,ATGCCATCACTGGAATTTCC,, 7207,AA485272,,20,16,TCACTGGAATTTCCCACCGC,, 7208,AA485272,,20,10,GAATTTCCCACCGCTTTGTG,, 7209,AA485272,,20,4,CCCACCGCTTTGTGAGCCGT,, (GENBANK ACCESSION NO. R19956) 50

7211,R19956,,20,479,AATCTAAGGGAAACCCAAAA,, 7212,R19956,,20,473,AGGGAAACCCAAAAAAAAAAA,, 60 7213,R19956,,20,467,ACCCAAAAAAAANAAANTCT,, 7214,R19956,,20,461,AAAAANAAAANTCTCCTAAA,, 7215,R19956,,20,455,AAAANTCTCCTAAACTTCCG,, 7216,R19956,,20,449,CTCCTAAACTTCCGGGCCTC,, 7217,R19956,,20,443,AACTTCCGGGCCTCNGGTGA,, 7218,R19956,,20,437,CGGGCCTCNGGTGAATTTAA,, 7219,R19956,,20,431,TCNGGTGAATTTAAACAANC,, 7220,R19956,,20,425,GAATTTAAACAANCCAAGAA,, 7221,R19956,,20,419,AAACAANCCAAGAAAAAAT,, 7222,R19956,,20,413,NCCAAGAAAAAAAAAAAANG.. 70 7223,R19956,,20,407,AAAAAAATAAAANGGCGAAA,, 7224,R19956,,20,401,ATAAAANGGCGAAAACCCNA,, 7225,R19956,,20,395,NGGCGAAAACCCNAAATCCN,, 7226,R19956,,20,389,AAACCCNAAATCCNAAAANG,,

7227,R19956,,20,383,NAAATCCNAAAANGGACCAN,, 75 7228,R19956,,20,377,CNAAAANGGACCANGCCTGG,,

7229,R19956,,20,371,NGGACCANGCCTGGGTCAAC,, 7230,R19956,,20,365,ANGCCTGGGTCAACCCGCCC,, 7231,R19956,,20,359,GGGTCAACCCGCCCGGGAAA,, 7232,R19956,,20,353,ACCCGCCCGGGAAAATCTTC,, 7233,R19956,,20,347,CCGGGAAAATCTTCCCGCCG,, 7234,R19956,,20,341,AAATCTTCCCGCCGGAATCT,, 7235,R19956,,20,335,TCCCGCCGGAATCTCCGCCC,, 7236,R19956,,20,329,CGGAATCTCCGCCCTCCGGA,, 7237,R19956,,20,323,CTCCGCCCTCCGGACCCCAA,, 10 7238,R19956,,20,317,CCTCCGGACCCCAAAAGTGC,, 7239,R19956,,20,311,GACCCCAAAAGTGCTCTGCG,, 7240,R19956,,20,305,AAAAGTGCTCTGCGCAAGAG,, 7241,R19956,,20,299,GCTCTGCGCAAGAGTCTCCC,, 7242,R19956,,20,293,CGCAAGAGTCTCCCTCTTCC,, 7243,R19956,,20,287,AGTCTCCCTCTTCCTTCAAT,, 7244,R19956,,20,281,CCTCTTCCTTCAATTTCAGG,, 7245,R19956,,20,275,CCTTCAATTTCAGGTTTCTG,, 7246,R19956,,20,269,ATTTCAGGTTTCTGGATTAA,, 7247,R19956,,20,263,GGTTTCTGGATTAAGGACTG,, 7248,R19956,,20,257,TGGATTAAGGACTGTTCTGT,, 7249,R19956,,20,251,AAGGACTGTTCTGTCGAATG,, 7250,R19956,,20,245,TGTTCTGTCGAATGGTGATG,, 7251,R19956,,20,239,GTCGAATGGTGATGGTGTGG,, 7252,R19956,,20,233,TGGTGATGGTGTGGCGG,, 25 7253,R19956,,20,227,TGGTGTGGCGGCAGCGT,, 7254,R19956,,20,221,GGTGGCGGCAGCGTGGTTTC,, 7255,R19956,,20,215,GGCAGCGTGGTTTCTGTATC,, 7256,R19956,,20,209,GTGGTTTCTGTATCGATCGT,, 7257,R19956,,20,203,TCTGTATCGATCGTTCTGTA,, 30 7258,R19956,,20,197,TCGATCGTTCTGTATCAGTC,, 7259,R19956,,20,191,GTTCTGTATCAGTCTTTCCT,, 7260,R19956,,20,185,TATCAGTCTTTCCTGGTGAG,, 7261,R19956,,20,179,TCTTTCCTGGTGAGAGATCT,, 7262,R19956,,20,173,CTGGTGAGAGATCTGGTTCC,, 35 7263,R19956,,20,167,AGAGATCTGGTTCCCGAAAC,, 7264,R19956,,20,161,CTGGTTCCCGAAACCCTGAG,, 7265,R19956,,20,155,CCCGAAACCCTGAGGGAGGC,, 7266,R19956,,20,149,ACCCTGAGGGAGGCTCCTTC,, 7267,R19956,,20,143,AGGGAGGCTCCTTCCTCCTG,, 40 7268,R19956,,20,137,GCTCCTTCCTCCTGCNCGCT,, 7269,R19956,,20,131,TCCTCCTGCNCGCTCANCGC,, 7270,R19956,,20,125,TGCNCGCTCANCGCCTCGGC,, 7271,R19956,,20,119,CTCANCGCCTCGGCTTGTCA,, 7272,R19956,,20,113,GCCTCGGCTTGTCACATTTT,, 7273,R19956,,20,107,GCTTGTCACATTTTTCTTGT,, 7274,R19956,,20,101,CACATTTTTCTTGTCTTGCT,, 7275,R19956,,20,95,TTTCTTGTCTTGCTCTATCT,, 7276,R19956,,20,89,GTCTTGCTCTATCTTTCTTT,, 7277,R19956,,20,83,CTCTATCTTTCTTTGGTCTG,, 50 7278,R19956,,20,77,CTTTCTTTGGTCTGCATTCA,, 7279,R19956,,20,71,TTGGTCTGCATTCACATTTG,, 7280,R19956,,20,65,TGCATTCACATTTGTTGTGC,, 7281,R19956,,20,59,CACATTTGTTGTGCTGTAGG,, 7282,R19956,,20,53,TGTTGTGCTGTAGGAAGCTC,, 55 7283,R19956,,20,47,GCTGTAGGAAGCTCATCTCT,, 7284,R19956,,20,41,GGAAGCTCATCTCTCTATG,, 7285,R19956,,20,35,TCATCTCTCTATGTGCTGG,, 7286,R19956,,20,29,CTCCTATGTGCTGGCCTTGG,, 7287,R19956,,20,23,TGTGCTGGCCTTGGTGAGGT,, 60 7288,R19956,,20,17,GGCCTTGGTGAGGTTTGATC,, 7289,R19956,,20,11,GGTGAGGTTTGATCCGCATA,, 7290,R19956,,20,5,GTTTGATCCGCATAATCTGC,,

- AAGTAGAAAATAGCTCGAGTGAGTTCTAATGGTGGA
 (SEQ ID NO: 7291)
- 7292,AA463610,,20,629,TCCACCATTAGAACTCACTC,, 7293,AA463610,,20,623,ATTAGAACTCACTCGAGCTA,,

(GENBANK ACCESSION NO. AA463610)

7294,AA463610,,20,617,ACTCACTCGAGCTATTTTTC,, 7295,AA463610,,20,611,TCGAGCTATTTTTCTACTTT,, 7296,AA463610,,20,605,TATTTTTCTACTTTGTTAGC,, 7297,AA463610,,20,599,TCTACTTTGTTAGCACTAAA., 7298,AA463610,,20,593,TTGTTAGCACTAAATGACAT, 7299,AA463610,,20,587,GCACTAAATGACATAGCTCC,, 7300,AA463610,,20,581,AATGACATAGCTCCCTGAGT, 7301,AA463610,,20,575,ATAGCTCCCTGAGTTAAGGA,, 7302,AA463610,,20,569,CCCTGAGTTAAGGAGTTATA,, 10 7303,AA463610,,20,563,GTTAAGGAGTTATATCCAGT,, 7304,AA463610,,20,557,GAGTTATATCCAGTAATTCA,, 7305,AA463610,,20,551,TATCCAGTAATTCATGCAAG,, 7306,AA463610,,20,545,GTAATTCATGCAAGTGTGTA,, 7307,AA463610,,20,539,CATGCAAGTGTGTAAATTAN,, 7308,AA463610,,20,533,AGTGTGTAAATTANACAGAT,, 7309,AA463610,,20,527,TAAATTANACAGATGACTTT,, 7310,AA463610,,20,521,ANACAGATGACTTTCCCCCC, 7311,AA463610,,20,515,ATGACTTTCCCCCCTAATAT,, 7312,AA463610,,20,509,TTCCCCCCTAATATCTAATG,, 7313,AA463610,,20,503,CCTAATATCTAATGCACAGC,, 7314,AA463610,,20,497,ATCTAATGCACAGCAGCTGT,, 7315,AA463610,,20,491,TGCACAGCAGCTGTCCTGAA,, 7316,AA463610,,20,485,GCAGCTGTCCTGAAGGAGTG,, 7317,AA463610,,20,479,GTCCTGAAGGAGTGCGAACT,, 25 7318,AA463610,,20,473,AAGGAGTGCGAACTTTGGAT,, 7319,AA463610,,20,467,TGCGAACTTTGGATGAGGGG,, 7320,AA463610,,20,461,CTTTGGATGAGGGGTAAAGG,, 7321,AA463610,,20,455,ATGAGGGGTAAAGGAGGGGA,, 7322,AA463610,,20,449,GGTAAAGGAGGGGATAACTT,, 30 7323,AA463610,,20,443,GGAGGGGATAACTTTGGACC,, 7324,AA463610,,20,437,GATAACTTTGGACCGCTGGA,, 7325,AA463610,,20,431,TTTGGACCGCTGGAGAGAAA,, 7326,AA463610,,20,425,CCGCTGGAGAGAAAGTCAGG,, 7327,AA463610,,20,419,GAGAGAAAGTCAGGCTGTAG,, 35 7328,AA463610,,20,413,AAGTCAGGCTGTAGAGGGCT,, 7329,AA463610,,20,407,GGCTGTAGAGGGCTTCTATA,, 7330,AA463610,,20,401,AGAGGGCTTCTATAATAATG,, 7331,AA463610,,20,395,CTTCTATAATAATGGTACCA,, 7332,AA463610,,20,389,TAATAATGGTACCACCAGGA,, 40 7333,AA463610,,20,383,TGGTACCACCAGGAGGTGGG, 7334,AA463610,,20,377,CACCAGGAGGTGGGAGAGTG,, 7335,AA463610,,20,371,GAGGTGGGAGAGTGGTTCAG,, 7336,AA463610,,20,365,GGAGAGTGGTTCAGTAAGGG,, 7337,AA463610,,20,359,TGGTTCAGTAAGGGAGGAGG,, 45 7338,AA463610,,20,353,AGTAAGGGAGGAGGAAGGTT,, 7339,AA463610,,20,347,GGAGGAGGAAGGTTGCCAAA,, 7340,AA463610,,20,341,GGAAGGTTGCCAAAGAAATT,, 7341,AA463610,,20,335,TTGCCAAAGAAATTACTCAT,, 7342,AA463610,,20,329,AAGAAATTACTCATCTTTCA,, 50 7343,AA463610,,20,323,TTACTCATCTTTCAAAAATT,, 7344,AA463610,,20,317,ATCTTTCAAAAATTCACTAG,, 7345,AA463610,,20,311,CAAAAATTCACTAGGTTACT,, 7346,AA463610,,20,305,TTCACTAGGTTACTGCCAGT,, 7347,AA463610,,20,299,AGGTTACTGCCAGTCAGCCA,, 55 7348,AA463610,,20,293,CTGCCAGTCAGCCAAACAAA,, 7349,AA463610,,20,287,GTCAGCCAAACAAATCCTAG,, 7350,AA463610,,20,281,CAAACAAATCCTAGAAGAGA,, 7351,AA463610,,20,275,AATCCTAGAAGAGAACTGTT,, 7352,AA463610,,20,269,AGAAGAGAACTGTTGTGCCT, 60 7353,AA463610,,20,263,GAACTGTTGTGCCTCCTAAA,, 7354,AA463610,,20,257,TTGTGCCTCCTAAAAGAGAA,, 7355,AA463610,,20,251,CTCCTAAAAGAGAAAGGAAA, 7356,AA463610,,20,245,AAAGAGAAAGGAAATTTCCT,, 7357,AA463610,,20,239,AAAGGAAATTTCCTCCTTTT,, 7358,AA463610,,20,233,AATTTCCTCCTTTTCCTTCC,, 65 7359,AA463610,,20,227,CTCCTTTTCCTTCTCTGGC,,7360,AA463610,,20,221,TTCCTTCCTCTGGCACAGGA, 7361,AA463610,,20,215,CCTCTGGCACAGGATGGGCT,, 7362,AA463610,,20,209,GCACAGGATGGGCTTCTAGC,, 70 7363,AA463610,,20,203,GATGGGCTTCTAGCAGATGG,, 7364,AA463610,,20,197,CTTCTAGCAGATGGGATTTT,, 7365,AA463610,,20,191,GCAGATGGGATTTTACATGT,, 7366,AA463610,,20,185,GGGATTTTACATGTTATATT,, 7367,AA463610,,20,179,TTACATGTTATATTCTGAGT,, 75 7368,AA463610,,20,173,GTTATATTCTGAGTTTTAAA,,

7369,AA463610,,20,167,TTCTGAGTTTTAAACAAAAT,, 7370,AA463610,,20,161,GTTTTAAACAAAATTTTGTG,, 7371,AA463610,,20,155,AACAAAATTTTGTGCCTTAG,, 7372,AA463610,,20,149,ATTTTGTGCCTTAGTCTCTA,, 7373,AA463610,,20,143,TGCCTTAGTCTCTATATCGC,, 7374,AA463610,,20,137,AGTCTCTATATCGCCCCCTC,, 7375,AA463610,,20,131,TATATCGCCCCCTCTCCTGA,, 7376,AA463610,,20,125,GCCCCCTCTCCTGACTTAAA,, 7377,AA463610,,20,119,TCTCCTGACTTAAATGGACA,, 7378,AA463610,,20,113,GACTTAAATGGACATATAGG,,

- 10 7379,AA463610,,20,107,AATGGACATATAGGAGGTAT,, 7380,AA463610,,20,101,CATATAGGAGGTATACTCTA,, 7381,AA463610,,20,95,GGAGGTATACTCTAAGCTCA,, 7382,AA463610,,20,89,ATACTCTAAGCTCAGTTATT,,
- 7383, AA463610, 20,83, TAAGCTCAGTTATTCAAGCA,, 7384,AA463610,,20,77,CAGTTATTCAAGCATGTTTT,, 7385,AA463610,,20,71,TTCAAGCATGTTTTGATCAT,, 7386,AA463610,,20,65,CATGTTTTGATCATTAGAGC,, 7387,AA463610,,20,59,TTGATCATTAGAGCAAGATG,,
- 7388,AA463610,,20,53,ATTAGAGCAAGATGGGGTGT,, 7389,AA463610,,20,47,GCAAGATGGGGTGTGGAAGG,, 7390,AA463610,,20,41,TGGGGTGTGGAAGGGGCAGC,, 7391,AA463610,,20,35,GTGGAAGGGGCAGCCGTGGT,, 7392,AA463610,,20,29,GGGGCAGCCGTGGTCTAAAA,,
- 7393,AA463610,,20,23,GCCGTGGTCTAAAAGGAACC,, 7394,AA463610,,20,17,GTCTAAAAGGAACCAACAAC,, 7395,AA463610,,20,11,AAGGAACCAACAACAAATTT,, 7396,AA463610,,20,5,CCAACAACAAATTTTACCTA., (GENBANK ACCESSION NO. R78585)
- 30 TTCTGGGTGTGCATCTGTTGAAATGCTCAAGACTTAATTATTTGCCTTTTGAAATCACTGTAAATGCCCCCATCCGGTTCCTCTTCTTC CCAGGTGTGCCAAGGAATTAATCTTGGTTTCACTACAATTAAAATTCACTCCTTTCCAATCATGTCATTGAAAGTGCCTTTAACGAA CCTCCCAGTAGAGTGGGGATTITTTCTTCTTCTCCTTTTTGGACAATAGTTAAATTAGGCAGTATTAGTTATGAGTTTGGTTGC AGTGTTCTTATCTTGTGGGGCTGATTTCCAAAAACCACATGGCTGCTGGAATTTACCAGGGGTCCCTCATACCTCACANGGCAAACC
- 35 ACTTACTACCAGGGCTTTTTCTGT (SEQ ID NO: 7397)

7398,R78585,,20,443,ACAGAAAAAGCCCTGGTAGT,, 7399,R78585,,20,437,AAAGCCCTGGTAGTAAGTGG,,

- 40 7400,R78585,,20,431,CTGGTAGTAAGTGGTTTGCC,, 7401,R78585,,20,425,GTAAGTGGTTTGCCNTGTGA,, 7402,R78585,,20,419,GGTTTGCCNTGTGAGGTATG,, 7403,R78585,,20,413,CCNTGTGAGGTATGAGGGAC,, 7404,R78585,,20,407,GAGGTATGAGGGACCCCTGG,,
- 7405,R78585,,20,401,TGAGGGACCCCTGGTAAATT,, 7406,R78585,,20,395,ACCCCTGGTAAATTCCAGCA,, 7407,R78585,,20,389,GGTAAATTCCAGCAGCCATG,, 7408,R78585,,20,383,TTCCAGCAGCCATGTGGTTT,, 7409,R78585,,20,377,CAGCCATGTGGTTTTTGGAA,,
- 7410,R78585,,20,371,TGTGGTTTTTGGAAATCAGC,, 7411,R78585,,20,365,TTTTGGAAATCAGCCCCACA,, 7412,R78585,,20,359,AAATCAGCCCCACAAGATAA,, 7413,R78585,,20,353,GCCCCACAAGATAAGAACAC,,7414,R78585,,20,347,CAAGATAAGAACACTGCAAC,
- 7415,R78585,,20,341,AAGAACACTGCAACCAAACT,, 7416,R78585,,20,335,ACTGCAACCAAACTCATAAC,, 7417,R78585,,20,329,ACCAAACTCATAACTAATAC,, 7418,R78585,,20,323,CTCATAACTAATACTGCCTA,, 7419,R78585,,20,317,ACTAATACTGCCTAATTTAA,,
- 60 7420,R78585,,20,311,ACTGCCTAATTTAACTATTG,, 7421,R78585,,20,305,TAATTTAACTATTGTCCAAA,, 7422,R78585,,20,299,AACTATTGTCCAAAAGAGAA,, 7423,R78585,,20,293,TGTCCAAAAGAGAAAGGGAA,,
- 7424,R78585,,20,287,AAAGAGAAAGGGAAGAAGAA,, 65 7425,R78585,,20,281,AAAGGGAAGAAGAAAAAAT,, 7426,R78585,,20,275,AAGAAGAAAAAAATCCCCAC,, 7427,R78585,,20,269,AAAAAAATCCCCACTCTACT,, 7428,R78585,,20,263,ATCCCCACTCTACTGGGAGG,, 7429,R78585,,20,257,ACTCTACTGGGAGGTTCCTA,,
- 70 7430,R78585,,20,251,CTGGGAGGTTCCTAGGCTTT,, 7431,R78585,,20,245,GGTTCCTAGGCTTTCCTATA,, 7432,R78585,,20,239,TAGGCTTTCCTATAAGTTAT,, 7433,R78585,,20,233,TTCCTATAAGTTATCCAAAT,, 7434,R78585,,20,227,TAAGTTATCCAAATAGTCTT,, 75 7435,R78585,,20,221,ATCCAAATAGTCTTTTTTA,,

7436,R78585,,20,215,ATAGTCTTTTTTTAATCTCA,, 7437,R78585,,20,209,TTTTTTTAATCTCAGGGTTT,, 7438,R78585,,20,203,TAATCTCAGGGTTTCTTAAG., 7439,R78585,,20,197,CAGGGTTTCTTAAGAGAATT,, 7440,R78585,,20,191,TTCTTAAGAGAATTCCCATT,, 7441,R78585,,20,185,AGAGAATTCCCATTCAGTGA,, 7442,R78585,,20,179,TTCCCATTCAGTGACCATTT,, 7443,R78585,,20,173,TTCAGTGACCATTTCTTTCG,, 7444,R78585,,20,167,GACCATTTCTTTCGTTAAAG,, 7445,R78585,,20,161,TTCTTTCGTTAAAGGCACTT,, 7446,R78585,,20,155,CGTTAAAGGCACTTTCAATG,, 7447,R78585,,20,149,AGGCACTTTCAATGACATGA,, 7448,R78585,,20,143,TTTCAATGACATGATTGGAA,, 7449,R78585,,20,137,TGACATGATTGGAAAGGAGT,, 7450,R78585,,20,131,GATTGGAAAGGAGTGAATTT,, 15 7451,R78585,,20,125,AAAGGAGTGAATTTTAATTG,, 7452,R78585,,20,119,GTGAATTTTAATTGTAGTGA,, 7453,R78585,,20,113,TTTAATTGTAGTGAAACCAA,, 7454,R78585,,20,107,TGTAGTGAAACCAAGATTAA,, 7455,R78585,,20,101,GAAACCAAGATTAATTCCTT,, 20 7456,R78585,,20,95,AAGATTAATTCCTTGGCACA,, 7457,R78585,,20,89,AATTCCTTGGCACACCTGGG, 7458,R78585,,20,83,TTGGCACACCTGGGAAGAAG, 7459,R78585,,20,77,CACCTGGGAAGAAGAGGAAC,, 25 7460,R78585,,20,71,GGAAGAAGAGGAACCGGATG,, 7461,R78585,,20,65,AGAGGAACCGGATGGGGGCA,, 7462,R78585,,20,59,ACCGGATGGGGGCATTTACA,, 7463,R78585,,20,53,TGGGGGCATTTACAGTGATT,, 7464,R78585,,20,47,CATTTACAGTGATTTCAAAA,, 7465,R78585,,20,41,CAGTGATTTCAAAAGGCAAA,, 7466,R78585,,20,35,TTTCAAAAGGCAAATAATTA,, 7467,R78585,,20,29,AAGGCAAATAATTAAGTCTT,, 7468,R78585,,20,23,AATAATTAAGTCTTGAGCAT,, 7469,R78585,,20,17,TAAGTCTTGAGCATTTCAAC,, 7470,R78585,,20,11,TTGAGCATTTCAACAGATGC,, 7471,R78585,,20,5,ATTTCAACAGATGCACACCC,, (GENBANK ACCESSION NO. R33851) CATTATATGACACCTTGCACTCTTACCGTCTTGACAGAAGCCAAGTAAGGAACTGAAGTTGTATCTGACTGTAGGGTGAATGTCTGA GGCCTGCCTCCTAATAAAGACTCAAGGAGGAAGTCAATTGGGCATCTGCTAATAGAATGAACTCATGATGGGAAACTTCAGTTCAT TTACTTTGTCCTGGAAAATTCCCGGGTTCTGTTCCATTTTGAGGCGAAAATTGGGCCTTGGGGGAAAAACCACGTTCTTTCCGA TTTCTTTCATCCGGTCTTACGGNTATGGCAATTCCTCCCCCAANTATAGGATCTTTATTTCTGGCTCATTTTCCCCTA (SEQ ID NO: 7472) 7473,R33851,,20,320,TAGGGGAAAATGAGCCAGAA,, 45 7474,R33851,,20,314,AAAATGAGCCAGAAATAAAG,, 7475,R33851,,20,308,AGCCAGAAATAAAGATCCTA,, 7476,R33851,,20,302,AAATAAAGATCCTATANTTG,, 7477,R33851,,20,296,AGATCCTATANTTGGGGGAG,, 7478,R33851,,20,290,TATANTTGGGGGAGGAATTG,, 50 7479,R33851,,20,284,TGGGGGAGGAATTGCCATAN,, 7480,R33851,,20,278,AGGAATTGCCATANCCGTAA,, 7481,R33851,,20,272,TGCCATANCCGTAAGACCGG,, 7482,R33851,,20,266,ANCCGTAAGACCGGATGAAA,, 7483,R33851,,20,260,AAGACCGGATGAAAGAAATC,, 55 7484,R33851,,20,254,GGATGAAAGAAATCGGAAAG,, 7485,R33851,,20,248,AAGAAATCGGAAAGGAAAGA,, 7486,R33851,,20,242,TCGGAAAGGAAAGAACGTGG,, 7487,R33851,,20,236,AGGAAAGAACGTGGTTTTTC,, 7488,R33851,,20,230,GAACGTGGTTTTTCCCCCAA,, 7489,R33851,,20,224,GGTTTTTCCCCCAAGGCCCA,, 7490,R33851,,20,218,TCCCCCAAGGCCCAATTTCG,, 7491,R33851,,20,212,AAGGCCCAATTTCGCCTCAA,, 7492,R33851,,20,206,CAATTTCGCCTCAAAATGGA,, 7493,R33851,,20,200,CGCCTCAAAATGGAACAGAA,, 65 7494,R33851,,20,194,AAAATGGAACAGAACCCGGG,, 7495,R33851,,20,188,GAACAGAACCCGGGAATTTT,,

7496,R33851,,20,182,AACCCGGGAATTTTCCAGGA,, 7497,R33851,,20,176,GGAATTTTCCAGGACAAAGT,, 7498,R33851,,20,170,TTCCAGGACAAAGTAAATGA,,

7499,R33851,,20,164,GACAAAGTAAATGAACTGAA, 7500,R33851,,20,158,GTAAATGAACTGAAGTTTCC,, 7501,R33851,,20,152,GAACTGAAGTTTCCCATCAT,, 7502,R33851,,20,146,AAGTTTCCCATCATGAGTTC,, 7503,R33851,,20,140,CCCATCATGAGTTCATTCTA,, 7504,R33851,,20,134,ATGAGTTCATTCATTAGCA,

PCT/US02/13135 WO 02/085308

7505,R33851,,20,128,TCATTCTATTAGCAGATGCC,, 7506,R33851,,20,122,TATTAGCAGATGCCCAATTG,, 7507,R33851,,20,116,CAGATGCCCAATTGACTTCC,, 7508,R33851,,20,110,CCCAATTGACTTCCTCCTTG,, 7509,R33851,,20,104,TGACTTCCTCCTTGAGTCTT, 7510,R33851,,20,98,CCTCCTTGAGTCTTTATTAG,, 7511,R33851,,20,92,TGAGTCTTTATTAGGAGGCA,, 7512,R33851,,20,86,TTTATTAGGAGGCAGGCCTC,, 7513,R33851,,20,80,AGGAGGCAGGCCTCAGACAT,, 10 7514,R33851,,20,74,CAGGCCTCAGACATTCACCC,, 7515,R33851,,20,68,TCAGACATTCACCCTACAGT, 7516,R33851,,20,62,ATTCACCCTACAGTCAGATA... 7517,R33851,,20,56,CCTACAGTCAGATACAACTT,, 7518,R33851,,20,50,GTCAGATACAACTTCAGTTC,, 7519,R33851,,20,44,TACAACTTCAGTTCCTTACT,, 15 7520,R33851,,20,38,TTCAGTTCCTTACTTGGCTT,, 7521,R33851,,20,32,TCCTTACTTGGCTTCTGTCA,, 7522,R33851,,20,26,CTTGGCTTCTGTCAAGACGG,, 7523,R33851,,20,20,TTCTGTCAAGACGGTAAGAG,, 20 7524,R33851,,20,14,CAAGACGGTAAGAGTGCAAG,, 7525,R33851,,20,8,GGTAAGAGTGCAAGGTGTCA,, 7526,R33851,,20,2,AGTGCAAGGTGTCATATAAT,, (GENBANK ACCESSION NO. R14663) GATTTCAGACTGCAGAGGGGAAAGACTTCCATCTAGTCACAAAGACTCCTTCGTCCCCAGTTGCCGTCTAGGATTGGGCCTCCCATA 25 ATTGCTTTGCCAAAATACCAGAGCCTTCAAGTGCCAAACAGAGTATGTCCGATGGTATCTGGGTAAGGAAAGCAAAAGCAAAGCAAAGCAAG (SEQ ID NO: 7527) 30 7528,R14663,,20,306,CTCCTCCTCCTTCCTTTTTT,, 7529,R14663,,20,300,CTCCTTCCTTTTTTTTTC,, 7530,R14663,,20,294,CCTTTTTTTTTTCCAGTCA,, 7531,R14663,,20,288,TTTTTTTCCAGTCAAAAGAN,, 7532,R14663,,20,282,TCCAGTCAAAAGANCCTGGA,, 7533,R14663,,20,276,CAAAAGANCCTGGAGCATAT,, 7534,R14663,,20,270,ANCCTGGAGCATATGGAATT,, 7535,R14663,,20,264,GAGCATATGGAATTAAACCG,, 7536,R14663,,20,258,ATGGAATTAAACCGNCATTC,, 7537,R14663,,20,252,TTAAACCGNCATTCCTAACC,, 40 7538,R14663,,20,246,CGNCATTCCTAACCCAGAAG,, 7539,R14663,,20,240,TCCTAACCCAGAAGATAAGT,, 7540,R14663,,20,234,CCCAGAAGATAAGTGTTTAA,, 7541,R14663,,20,228,AGATAAGTGTTTAAACAAAC,, 7542,R14663,,20,222,GTGTTTAAACAAACTTATGA,, 7543,R14663,,20,216,AAACAAACTTATGAAGGGGA,, 45 7544,R14663,,20,210,ACTTATGAAGGGGAAGTGGG,, 7545,R14663,,20,204,GAAGGGGAAGTGGGGTTTGG,, 7546,R14663,,20,198,GAAGTGGGGTTTGGTGGAGG,, 7547,R14663,,20,192,GGGTTTGGTGGAGGGGAATC,, 50 7548,R14663,,20,186,GGTGGAGGGGAATCAGAAGG,, 7549,R14663,,20,180,GGGGAATCAGAAGGGCATGA,, 7550,R14663,,20,174,TCAGAAGGCCATGAAGGTCC,, 7551,R14663,,20,168,GGGCATGAAGGTCCCTTGCT,, 7552,R14663,,20,162,GAAGGTCCCTTGCTTTTGCT,, 55 7553,R14663,,20,156,CCCTTGCTTTTGCTTTCCTT,, 7554,R14663,,20,150,CTTTTGCTTTCCTTCCTTAC,, 7555,R14663,,20,144,CTTTCCTTCCTTACCCAGAT,, 7556,R14663,,20,138,TTCCTTACCCAGATACCATC,, 7557,R14663,,20,132,ACCCAGATACCATCGGACAT,, 7558,R14663,,20,126,ATACCATCGGACATACTCTG,, 7559,R14663,,20,120,TCGGACATACTCTGTTTGGC, 7560,R14663,,20,114,ATACTCTGTTTGGCACTTGA,, 7561,R14663,,20,108,TGTTTGGCACTTGAAGGCTC,,

7562,R14663,,20,102,GCACTTGAAGGCTCTGGTAT,, 65 7563,R14663,,20,96,GAAGGCTCTGGTATTTTGGC,, 7564,R14663,,20,90,TCTGGTATTTTGGCAAAGCA, 7565,R14663,,20,84,ATTTTGGCAAAGCAATTATG,, 7566,R14663,,20,78,GCAAAGCAATTATGGGAGGC,, 7567,R14663,,20,72,CAATTATGGGAGGCCCAATC,, 70 7568,R14663,,20,66,TGGGAGGCCCAATCCTAGAC, 7569,R14663,,20,60,GCCCAATCCTAGACGGCAAC,, 7570,R14663,,20,54,TCCTAGACGGCAACTGGGGA., 7571,R14663,,20,48,ACGGCAACTGGGGACGAAGG,, 7572,R14663,,20,42,ACTGGGGACGAAGGAGTCTT,, 75 7573,R14663,,20,36,GACGAAGGAGTCTTTGTGAC,,

7574,R14663,,20,30,GGAGTCTTTGTGACTAGATG, 7575,R14663,,20,24,TTTGTGACTAGATGGAAGTC,, 7576,R14663,,20,18,ACTAGATGGAAGTCTTTCCC,, 7577,R14663,,20,12,TGGAAGTCTTTCCCCTCTGC, 7578,R14663,,20,6,TCTTTCCCCTCTGCAGTCTG,, (GENBANK ACCESSION NO. R33355) TTTAAANNTAAAGATTCTTTATTAATAAATTCT TTGGGGGGGGTCTGTATCTTAGGGCCAGCCCTCC

10 GCTTCTTAGGGAAGGGANGGGCACCCCCTNCCCTGTTGCAAATGCTTGCAGTTCCTTAGTCAGTGTCAGCTGTTT (SEQ ID NO: 7579)

7580,R33355,,20,317,AAACAGCTGACACTGACTAA,, 7581,R33355,,20,311,CTGACACTGACTAAGGAACT,,

15 7582,R33355,,20,305,CTGACTAAGGAACTGCAAGC,, 7583,R33355,,20,299,AAGGAACTGCAAGCATTTGC,, 7584,R33355,,20,293,CTGCAAGCATTTGCAACAGG,, 7585,R33355,,20,287,GCATTTGCAACAGGGNAGGG,, 7586,R33355,,20,281,GCAACAGGGNAGGGGGTGC,

20 7587,R33355,,20,275,GGGNAGGGGGGTGCCCNTCC,, 7588,R33355,,20,269,GGGGGTGCCCNTCCCTTCCC, 7589,R33355,,20,263,GCCCNTCCCTTAGGAA,, 7590,R33355,,20,257,CCCTTCCCTAAGAAGCCTGG,, 7591,R33355,,20,251,CCTAAGAAGCCTGGGGGCCC,,

25 7592,R33355,,20,245,AAGCCTGGGGGCCCAGGCTG,, 7593,R33355,,20,239,GGGGGCCCAGGCTGACTTGG,, 7594,R33355,,20,233,CCAGGCTGACTTGGGGGCA,, 7595,R33355,,20,227,TGACTTGGGGGGCAAGACTT,, 7596,R33355,,20,221,GGGGGGCAAGACTTGACACT,,

30 7597,R33355,,20,215,CAAGACTTGACACTAGGCCC,, 7598,R33355,,20,209,TTGACACTAGGCCCCACTC,, 7599,R33355,,20,203,CTAGGCCCCACTCACTCAG,, 7600,R33355,,20,197,CCCCACTCACTCAGATGTCC,, 7601,R33355,,20,191,TCACTCAGATGTCCCTGAAA,,

35 7602,R33355,,20,185,AGATGTCCCTGAAATTCCCN,, 7603,R33355,,20,179,CCCTGAAATTCCCNCCACG,, 7604,R33355,,20,173,AATTCCCNCCACGGGGGTC,, 7605,R33355,,20,167,CNCCCACGGGGGTCACCCCT,, 7606,R33355,,20,161,CGGGGGTCACCCCTGGGGGG,

40 7607,R33355,,20,155,TCACCCCTGGGGGGTTAGGG,, 7608,R33355,,20,149,CTGGGGGGTTAGGGNCCTAT,, 7609,R33355,,20,143,GGTTAGGGNCCTATTTTAAA,, 7610,R33355,,20,137,GGNCCTATTTTTAACACTAG,, 7611,R33355,,20,131,ATTTTTAACACTAGGGGGCT,,

45 7612,R33355,,20,125,AACACTAGGGGGCTGGCCCA,, 7613,R33355,,20,119,AGGGGGCTGGCCCACTAGGA,, 7614,R33355,,20,113,CTGGCCCACTAGGAGGCCTG,, 7615,R33355,,20,107,CACTAGGAGGGCTGGCCCTA,, 7616,R33355,,20,101,GAGGGCTGGCCCTAAGATAC,,

50 7617,R33355,,20,95,TGGCCCTAAGATACAGACCC,, 7618,R33355,,20,89,TAAGATACAGACCCCCCAA,, 7619,R33355,,20,83,ACAGACCCCCCCAATCTCCC,, 7620,R33355,,20,77,CCCCCCAATCTCCCCAAAGC,, 7621,R33355,,20,71,AATCTCCCCAAAGCGGGGAG,,

55 7622,R33355,,20,65,CCCAAAGCGGGGAGGAGATA,, 7623,R33355,,20,59,GCGGGGAGGAGATATTTATT,, 7624,R33355,,20,53,AGGAGATATTTATTTTGGGG,, 7625,R33355,,20,47,TATTTATTTTGGGAGAGTT,, 7626,R33355,,20,41,TTTTGGGGAGAGTTTGGAGG.

60 7627,R33355,,20,35,GGAGAGTTTGGAGGGGAGGG,, 7628,R33355,,20,29,TTTGGAGGGGAGGGAGAATT,, 7629,R33355,,20,23,GGGAGGGAGAATTTATTAAA,, 7630,R33355,,20,17,GGAGAATTTATTAATAAAAG,, 7631,R33355,,20,11,TTTATTAATAAAAGAATCTT,,

65 7632,R33355,,20,5,AATAAAAGAATCTTTANNTT,, (GENBANK ACCESSION NO. T64626)

CTCAGGTGAGACCAGATTGTGTCATTTGGCTCCACCTTCATCTTGCAGANCAGCTGATCTCAGATTGCCAAGAAACTAGAAGCCACT TGCACGGTGTGGCCAGAGCTCAGCTGGATGAGAGGCTGAGATGGGTGGCCAGCTTGTATACCAGTCCCTGAACTGAGCTGTTTACA GGACTGGGGAGGCTCCACCCAGAAGGCTTTCATTTGTACTCTGCTGGGGAGTGACTGGGAAAAACTCCTTCCCTGCTGCTGAGTGGAG

70 AGAGGCCTCATCCGGCTTTGACCCACCATCCGTTGCAGAAGCCTCCAGGGAGCAGCCAAGACCCCCCTTTCCTTTCAAAAACCTTCCCGGAAGTNGTTTT
(SEQ ID NO: 7633)

7634,T64626,,20,362,AAAACNACTTCCGGGAAGGT,, 75 7635,T64626,,20,356,ACTTCCGGGAAGGTTTTGAA,,

7636,T64626,,20,350,GGGAAGGTTTTGAAAGGAAA,, 7637,T64626,,20,344,GTTTTGAAAGGAAAGGGGGT,, 7638,T64626,,20,338,AAAGGAAAGGGGGTCTTGGC,, 7639,T64626,,20,332,AAGGGGGTCTTGGCTGCCTC,, 7640,T64626,,20,326,GTCTTGGCTGCCTCCCAACT,, 7641,T64626,,20,320,GCTGCCTCCCAACTCTTAGG,, 7642,T64626,,20,314,TCCCAACTCTTAGGATTGCT,, 7643,T64626,,20,308,CTCTTAGGATTGCTGCTCCC,, 7644,T64626,,20,302,GGATTGCTGCTCCCTGGAGG,, 10 7645,T64626,,20,296,CTGCTCCCTGGAGGCTTCTG,, 7646,T64626,,20,290,CCTGGAGGCTTCTGCAACGG,, 7647, T64626, 20, 284, GGCTTCTGCAACGGATGGTG,, 7648,T64626,,20,278,TGCAACGGATGGTGGGTCAA,, 7649,T64626,,20,272,GGATGGTGGGTCAAAGCCGG,, 15 7650,T64626,,20,266,TGGGTCAAAGCCGGATGAGG,, 7651,T64626,,20,260,AAAGCCGGATGAGGCCTCTC,, 7652,1'64626,,20,254,GGATGAGGCCTCTCTCCACT,, 7653,T64626,,20,248,GGCCTCTCTCCACTCAGCAG,,7654,T64626,,20,242,TCTCCACTCAGCAGCAGCAGGGA,, 7655,T64626,,20,236,CTCAGCAGCAGGGAAGGAGT,, 7656,T64626,,20,230,AGCAGGGAAGGAGTTTTTCC,, 7657,T64626,,20,224,GAAGGAGTTTTTCCCAGTCA,, 7658,T64626,,20,218,GTTTTTCCCAGTCACTCCCA,, 7659,T64626,,20,212,CCCAGTCACTCCCAGCAGAG,, 7660,T64626,,20,206,CACTCCCAGCAGAGTACAAA,, 7661,T64626,,20,200,CAGCAGAGTACAAATGAAAG,, 7662,T64626,,20,194,AGTACAAATGAAAGCCTTCT,, 7663,T64626,,20,188,AATGAAAGCCTTCTGGGTGG,, 7664,T64626,,20,182,AGCCTTCTGGGTGGAGCCTC,, 7665,T64626,,20,176,CTGGGTGGAGCCTCCCCAGT,, 30 7666,T64626,,20,170,GGAGCCTCCCCAGTCCTGTA,, 7667,T64626,,20,164,TCCCCAGTCCTGTAAACAGC,, 7668,T64626,,20,158,GTCCTGTAAACAGCTCAGTT,, 7669,T64626,,20,152,TAAACAGCTCAGTTCAGGGA,, 7670,T64626,,20,146,GCTCAGTTCAGGGACTGGTA,, 35 7671,T64626,,20,140,TTCAGGGACTGGTATACAAG,, 7672, T64626, 20, 134, GACTGGTATACAAGCTGGCC, 7673,T64626,,20,128,TATACAAGCTGGCCACCCAT,, 7674,T64626,,20,122,AGCTGGCCACCCATCTCAGC,, 7675,T64626,,20,116,CCACCCATCTCAGCCTCTCA,, 7676,T64626,,20,110,ATCTCAGCCTCTCATCCAGC,, 7677,T64626,,20,104,GCCTCTCATCCAGCTGAGCT,, 7678,T64626,,20,98,CATCCAGCTGAGCTCTGGCC,, 7679,T64626,,20,92,GCTGAGCTCTGGCCACACCG,, 45 7680,T64626,,20,86,CTCTGGCCACACCGTGCAAG,, 7681,T64626,,20,80,CCACACCGTGCAAGTGGCTT,, 7682,T64626,,20,74,CGTGCAAGTGGCTTCTAGTT,, 7683,T64626,,20,68,AGTGGCTTCTAGTTTCTTGG,, 7684,T64626,,20,62,TTCTAGTTTCTTGGCAATCT,, 7685,T64626,,20,56,TTTCTTGGCAATCTGAGATC,, 7686,T64626,,20,50,GGCAATCTGAGATCAGCTGN,, 7687,T64626,,20,44,CTGAGATCAGCTGNTCTGCA,, 7688,T64626,,20,38,TCAGCTGNTCTGCAAGATGA,, 7689,T64626,,20,32,GNTCTGCAAGATGAAGGTGG,, 7690,T64626,,20,26,CAAGATGAAGGTGGAGCCAA,, 7691,T64626,,20,20,GAAGGTGGAGCCAAATGACA,, 7692,T64626,,20,14,GGAGCCAAATGACACAATCT,, 7693,T64626,,20,8,AAATGACACAATCTGGTCTC,, 7694,T64626,,20,2,CACAATCTGGTCTCACCTGA,, (GENBANK ACCESSION NO. AA448261) TTTCCAGAAAAGGATATTTTTTTATTCAAGTAACTGCAAATAGGAAACCAGAGAGGGGGGCCCCAGGCTGGGACAAATCATGGCTA CCCTCCCCAACAGAACAGGGGGAGGAGGTGGCCCCTACACCCTTTATGGTCGATTCGGGCCCCCTTGCTCACTCTGCTGCAGCATCCTAGGGGCAGGGCCAGCCTTCCCTGGGACTGGGGTAGTCGGTCACCCAGCCTGCCATGCCCCAGCCCTCTTCCCCACAAAGAGTA TCTTGGGGGAGGGATCGTGGGCAGAACAGGAGGCAATGAGGATGAACATTTGGCGCTGGTAGCAGCAGCAATGACGGATTGTCG 65 AAGAATGGAACATTGAACA (SEQ ID NO: 7695) 7696,AA448261,,20,344,TGTTCAATGTTCCATTCTTC, 7697,AA448261,,20,338,ATGTTCCATTCTTCGACAAT,, 70 7698,AA448261,,20,332,CATTCTTCGACAATCCGTCA,, 7699,AA448261,,20,326,TCGACAATCCGTCATTGCTG,, 7700,AA448261,,20,320,ATCCGTCATTGCTGCTGCTA,, 7701,AA448261,,20,314,CATTGCTGCTGCTACCAGCG,,

7702,AA448261,,20,308,TGCTGCTACCAGCGCCAAAT,, 7703,AA448261,,20,302,TACCAGCGCCAAATGTTCAT,

7704,AA448261,,20,296,CGCCAAATGTTCATCCTCAT,, 7705,AA448261,,20,290,ATGTTCATCCTCATTGCCTC,, 7706,AA448261,,20,284,ATCCTCATTGCCTCCTGTTC,, 7707,AA448261,,20,278,ATTGCCTCCTGTTCTGCCCA,, 7708,AA448261,,20,272,TCCTGTTCTGCCCACGATCC,, 7709,AA448261,,20,266,TCTGCCCACGATCCCCTCCC,, 7710,AA448261,,20,260,CACGATCCCCTCCCCAAGA,, 7711,AA448261,,20,254,CCCCTCCCCCAAGATACTCT,, 7712,AA448261,,20,248,CCCCAAGATACTCTTTGTGG,, 7713,AA448261,,20,242,GATACTCTTTGTGGGGAAGA,, 7714,AA448261,,20,236,CTTTGTGGGGAAGAGGGGCT,, 7715,AA448261,,20,230,GGGGAAGAGGGGCTGGGGCA,, 7716,AA448261,,20,224,GAGGGGCTGGGGCATGGCAG,, 7717,AA448261,,20,218,CTGGGGCATGGCAGGCTGGG, 15 7718,AA448261,,20,212,CATGGCAGGCTGGGTGACCG,, 7719,AA448261,,20,206,AGGCTGGGTGACCGACTACC,, 7720,AA448261,,20,200,GGTGACCGACTACCCCAGTC,, 7721,AA448261,,20,194,CGACTACCCCAGTCCCAGGG,, 7722,AA448261,,20,188,CCCCAGTCCCAGGGAAGGCT,, 20 7723,AA448261,,20,182,TCCCAGGGAAGGCTGGCCCT,, 7724,AA448261,,20,176,GGAAGGCTGGCCCTGCCCCT,, 7725,AA448261,,20,170,CTGGCCCTGCCCCTAGGATG,, 7726,AA448261,,20,164,CTGCCCCTAGGATGCTGCAG,, 7727,AA448261,,20,158,CTAGGATGCTGCAGCAGAGT,, 7728,AA448261,,20,152,TGCTGCAGCAGAGTGAGCAA,, 7729,AA448261,,20,146,AGCAGAGTGAGCAAGGGGGC, 7730,AA448261,,20,140,GTGAGCAAGGGGGCCCGAAT,, 7731, AA448261, 20,134, AAGGGGGCCCGAATCGACCA, 7732,AA448261,,20,128,GCCCGAATCGACCATAAAGG,, 7733,AA448261,,20,122,ATCGACCATAAAGGGTGTAG, 7734,AA448261,,20,116,CATAAAGGGTGTAGGGGCCA,, 7735,AA448261,,20,110,GGGTGTAGGGGCCACCTCCT,, 7736,AA448261,,20,104,AGGGGCCACCTCCTCCCCCT,, 7737,AA448261,,20,98,CACCTCCTCCCCCTGTTCTG,, 35 7738,AA448261,,20,92,CTCCCCCTGTTCTGTTGGGG, 7739,AA448261,,20,86,CTGTTCTGTTGGGGAGGGGT,, 7740,AA448261,,20,80,TGTTGGGGAGGGGTAGCCAT,, 7741,AA448261,,20,74,GGAGGGGTAGCCATGATTTG,, 7742,AA448261,,20,68,GTAGCCATGATTTGTCCCAG,, 40 7743,AA448261,,20,62,ATGATTTGTCCCAGCCTGGG,, 7744, AA448261, 20,56, TGTCCCAGCCTGGGGCTCCC, 7745,AA448261,,20,50,AGCCTGGGGCTCCCTCTCTG,,7746,AA448261,,20,44,GGGCTCCCTCTCTGGTTTCC, 7747,AA448261,,20,38,CCTCTCTGGTTTCCTATTTG,, 45 7748,AA448261,,20,32,TGGTTTCCTATTTGCAGTTA,, 7749,AA448261,,20,26,CCTATTTGCAGTTACTTGAA,, 7750,AA448261,,20,20,TGCAGTTACTTGAATAAAAA,, 7751,AA448261,,20,14,TACTTGAATAAAAAAAATAT,, 7752,AA448261,,20,8,AATAAAAAAAAATATCCTTTT,, 7753, AA448261, 20,2, AAAAATATCCTTTTCTGGAA,, (GENBANK ACCESSION NO. R44202) AAGTCATGATTGAGTCTTAAAAAAAGAACAATCCAGTGTTGCAGTTCAGAGAGGTTAGCATGTCAGGGCGCAGGCTCGGCGAGGNTG TGCTTTGCATTTAGGGACACAGCCCGGAGCCGCAGAAGGTCAGCAGGGAGCACGTCTGGGCACCTTCAGTACCAGGGCTGGGTGAG 55 AGAGCCCGGA (SEQ ID NO: 7754) 7755,R44202,,20,252,TCCGGGCTCTCTCACCCAGC,, 7756,R44202,,20,246,CTCTCTCACCCAGCCCTGGT,, 7757,R44202,,20,240,CACCCAGCCCTGGTACTGAA,, 60 7758,R44202,,20,234,GCCCTGGTACTGAAGGTGCC,, 7759,R44202,,20,228,GTACTGAAGGTGCCCAGACG,, 7760,R44202,,20,222,AAGGTGCCCAGACGTGCTCC,, 7761,R44202,,20,216,CCCAGACGTGCTCCCTGCTG,, 7762,R44202,,20,210,CGTGCTCCCTGCTGACCTTC,, 7763,R44202,,20,204,CCCTGCTGACCTTCTGCGGC,, 7764,R44202,,20,198,TGACCTTCTGCGGCTCCGGG,, 7765,R44202,,20,192,TCTGCGGCTCCGGGCTGTGT,, 7766,R44202,,20,186,GCTCCGGGCTGTGTCCCTAA,, 70 7767,R44202,,20,180,GGCTGTGTCCCTAAATGCAA,, 7768,R44202,,20,174,GTCCCTAAATGCAAAGCACA,, 7769,R44202,,20,168,AAATGCAAAGCACANCCTCG,,

7770,R44202,,20,162,AAAGCACANCCTCGCCGAGC,, 7771,R44202,,20,156,CANCCTCGCCGAGCCTGCGC, 7772,R44202,,20,150,CGCCGAGCCTGCGCCCTGAC.

7773.R44202,,20,144,GCCTGCGCCCTGACATGCTA,, 7774,R44202,,20,138,GCCCTGACATGCTAACCTCT,, 7775,R44202,,20,132,ACATGCTAACCTCTCTGAAC,, 7776,R44202,,20,126,TAACCTCTCTGAACTGCAAC,, 7777,R44202,,20,120,CTCTGAACTGCAACACTGGA,, 7778,R44202,,20,114,ACTGCAACACTGGATTGTTC,, 7779,R44202,,20,108,ACACTGGATTGTTCTTTTTT,, 7780,R44202,,20,102,GATTGTTCTTTTTTAAGACT,, 7781,R44202,,20,96,TCTTTTTTAAGACTCAATCA,, 10 7782,R44202,,20,90,TTAAGACTCAATCATGACTT,, 7783,R44202,,20,84,CTCAATCATGACTTCTTTAC,, 7784,R44202,,20,78,CATGACTTCTTTACTAACAC,, 7785,R44202,,20,72,TTCTTTACTAACACTGGCTA,, 7786,R44202,,20,66,ACTAACACTGGCTAGCTATA,, 7787,R44202,,20,60,ACTGGCTAGCTATATTATCT,, 7788,R44202,,20,54,TAGCTATATTATCTTATATA,, 7789,R44202,,20,48,TATTATCTTATATACTAATA,, 7790,R44202,,20,42,CTTATATACTAATATCATGT,, 7791,R44202,,20,36,TACTAATATCATGTTTTAAA,, 7792,R44202,,20,30,TATCATGTTTTAAAAATATA,, 7793,R44202,,20,24,GTTTTÅAAAATATAAAATAG,, 7794,R44202,,20,18,AAAATATAAAATAGAAATTA,, 7795,R44202,,20,12,TAAAATAGAAATTAAGAATC,, 7796,R44202,,20,6,AGAAATTAAGAATCTAAAAA,, 25 (GENBANK ACCESSION NO. W81570) GCGACCGCTCGCGCCTCTCGANGGACACTCGCACTTGCTCAACAAGGGCCTGCCGCTTGGGTCNGACCTCNGATCATGAACGGGC ACCTGCANCCGCGGCCCTGGTGGCATTGNTGGATGGCCGGGACTGCACAGTGGAGATGCCCATCCTGAAGGACGTGGCCACTGTG GCTTCTGCGACGCGCAGTCCACGCAGGAGATCCATGAGAAGGTCCTGAACGAGGCTGTGGGGGCCCTGATGTACCACACCATCACT CTCACCAGGGAGGACCTGGAGAAGTTCAAAGCCCTCCGCATCATCGTCCGGATTGGCAGTGGTTTTGACAACATCGACATCAAGTC 30 GGCCGGGGATTTTAGGCATTTGCCGTTCTGCAACGTGCCCGCGGCGTTCTGTTGGGAGGAGACGGCCGACTTCGA (SEQ ID NO: 7797) 7798,W81570,,20,400,TCGAAGTCGGCCGTCTCCTC,, 7799,W81570,,20,394,TCGGCCGTCTCCTCCCAACA,, 35 7800,W81570,,20,388,GTCTCCTCCCAACAGAACGC,, 7801,W81570,,20,382,TCCCAACAGAACGCCGCGGG,, 7802,W81570,,20,376,CAGAACGCCGCGGGCACGTT,, 7803,W81570,,20,370,GCCGCGGGCACGTTGCAGAA,, 7804,W81570,,20,364,GGCACGTTGCAGAACGGCAA,, 40 7805, W81570, 20,358, TTGCAGAACGGCAAATGCCT, 7806,W81570,,20,352,AACGGCAAATGCCTAAAATC,, 7807,W81570,,20,346,AAATGCCTAAAATCCCCGGC,, 7808,W81570,,20,340,CTAAAATCCCCGGCCGACTT,, 7809, W81570,, 20,334, TCCCCGGCCGACTTGATGTC,, 7810,W81570,,20,328,GCCGACTTGATGTCGATGTT, 7811,W81570,,20,322,TTGATGTCGATGTTGTCAAA, 7812,W81570,,20,316,TCGATGTTGTCAAAACCACT,, 7813,W81570,,20,310,TTGTCAAAACCACTGCCAAT,, 7814,W81570,,20,304,AAACCACTGCCAATCCGGAC,, 7815,W81570,,20,298,CTGCCAATCCGGACGATGAT,,7816,W81570,,20,292,ATCCGGACGATGATGCGGAG, 7817,W81570,,20,286,ACGATGATGCGGAGGGCTTT,, 7818,W81570,,20,280,ATGCGGAGGGCTTTGAACTT,, 7819,W81570,,20,274,AGGGCTTTGAACTTCTCCAG,, 55 7820,W81570,,20,268,TTGAACTTCTCCAGGTCCTC,, 7821,W81570,,20,262,TTCTCCAGGTCCTCCCTGGT,, 7822,W81570,,20,256,AGGTCCTCCCTGGTGAGAGT,, 7823,W81570,,20,250,TCCCTGGTGAGAGTGATGGT,, 7824,W81570,,20,244,GTGAGAGTGATGGTGTGGTA,, 60 7825, W81570,,20,238, GTGATGGTGTGGTACATCAG,, 7826,W81570,,20,232,GTGTGGTACATCAGGGCCCC,, 7827,W81570,,20,226,TACATCAGGGCCCCCACAGC,, 7828,W81570,,20,220,AGGGCCCCCACAGCCTCGTT,, 7829,W81570,,20,214,CCCACAGCCTCGTTCAGGAC,, 7830,W81570,,20,208,GCCTCGTTCAGGACCTTCTC,, 7831,W81570,,20,202,TTCAGGACCTTCTCATGGAT,, 7832,W81570,,20,196,ACCTTCTCATGGATCTCCTG,, 7833,W81570,,20,190,TCATGGATCTCCTGCGTGGA,, 7834,W81570,,20,184,ATCTCCTGCGTGGACTGCGC,, 7835,W81570,,20,178,TGCGTGGACTGCGCGTCGCA,,7836,W81570,,20,172,GACTGCGCGTCGCAGAAGCC, 70

7837,W81570,,20,166,GCGTCGCAGAAGCCACAGTG,, 7838,W81570,,20,160,CAGAAGCCACAGTGGCCACG,, 7839,W81570,,20,154,CCACAGTGGCCACGTCCTTC,,

7840,W81570,,20,148,TGGCCACGTCCTTCAGGATG,,

75

7841,W81570,,20,142,CGTCCTTCAGGATGGGCATC,, 7842,W81570,,20,136,TCAGGATGGGCATCTCCACT,, 7843,W81570,,20,130,TGGGCATCTCCACTGTGCAG,, 7844,W81570,,20,124,TCTCCACTGTGCAGTCCCGG,, 7845,W81570,,20,118,CTGTGCAGTCCCGGCCATCCANCAAT,, 7846,W81570,,20,106,GGCCATCCANCAATG,, 7848,W81570,,20,100,CCANCAATGCCACCAGGGGC,, 7848,W81570,,20,100,CCANCAATGCCACCAGGGGC,

- 7849,W81570,,20,94,ATGCCACCAGGGGCCGCGGN,, 7850,W81570,,20,88,CCAGGGGCCGCGGNTGCAGG,, 7851,W81570,,20,82,GCCGCGGNTGCAGGTGCCCG,, 7852,W81570,,20,76,GNTGCAGGTGCCCGTTCATG,, 7853,W81570,,20,70,GGTGCCCGTTCATGATCNGA,,
- 7854,W81570,,20,64,CGTTCATGATCNGAGGTCNG, 7855,W81570,,20,58,TGATCNGAGGTCNGACCCAA,, 7856,W81570,,20,52,GAGGTCNGACCCAAGCGGCA,, 7857,W81570,,20,46,NGACCCAAGCGGCAGCCCT, 7858,W81570,,20,40,AAGCGGCAGGCCCTTGTTGA,, 7859,W81570,,20,34,CAGGCCCTTGTTGAGCAAGT,
- 20 7860,W81570,,20,28,CTTGTTGAGCAAGTGCGAGT,, 7861,W81570,,20,22,GAGCAAGTGCGAGTTGTCCN, 7862,W81570,,20,16,GTGCGAGTTGTCCNTCGAGAG,, 7863,W81570,,20,10,GTTGTCCNTCGAGAGGCGCG, 7864,W81570,,20,4,CNTCGAGAGGCGCGAGCGGT,
- 30 GGAATGTGGATNTACATATAACCATTAGAAACCCTATCATCACCTCCTAGAGGGGAAGTGAATTTCTTAAT (SEQ ID NO: 7865)
 - 7866,AA128561,,20,402,ATTAAGAAATTCACTTCCCC,, 7867,AA128561,,20,396,AAATTCACTTCCCTCTAGG,,
- 35 7868,AA128561,,20,390,ACTTCCCCTCTAGGAGGTGA,, 7869,AA128561,,20,384,CCTCTAGGAGGTGATGATAG,, 7870,AA128561,,20,378,GGAGGTGATGATAGGGTTTC,, 7871,AA128561,,20,372,GATGATAGGGTTTCTAATGG,, 7872,AA128561,,20,366,AGGGTTTCTAATGGTTATAT,,
- 40 7873,AA128561,,20,360,TCTAATGGTTATATGTANAT,, 7874,AA128561,,20,354,GGTTATATGTANATCCACAT,, 7875,AA128561,,20,348,ATGTANATCCACATTCCCCA,, 7876,AA128561,,20,342,ATCCACATTCCCATTTGCT,, 7877,AA128561,,20,336,ATTCCCCATTTGCTAGAAA,
- 7878,AA128561,,20,330,CATTTGCTTAGAAAGTCTGA,,
 7879,AA128561,,20,324,CTTAGAAAGTCTGATTGTAG,,
 7880,AA128561,,20,318,AAGTCTGATTGTAGCTATGAT,
 7881,AA128561,,20,312,GATTGTAGCTATGATTGTCC,,
 7882,AA128561,,20,306,AGCTATGATTGTCCGTAGGC,
- 50 7883,AA128561,,20,300,GATTGTCCGTAGGCCCATAC,, 7884,AA128561,,20,294,CCGTAGGCCCATACTAGAGT,, 7885,AA128561,,20,288,GCCCATACTAGAGTTCATGG,, 7886,AA128561,,20,282,ACTAGAGTTCATGGATATGT,, 7887,AA128561,,20,276,GTTCATGGATATGTTATACT,
- 55 7888,AA128561,320,270,GGATATGTTATACTGAACCA,,
 7889,AA128561,320,264,GTTATACTGAACCAGGCCAG,,
 7890,AA128561,320,258,CTGAACCAGGCCAGAGCAAA,,
 7891,AA128561,320,252,CAGGCCAGAGCAAACAGAAA,,
 7892,AA128561,320,246,AGAGCAAACAGAAAAAGAAG,
- 60 7893,AA128561,20,240,AACAGAAAAAGAAGGTTGAG,, 7894,AA128561,20,234,AAAAGAAGGTTGAGGGCAAT,, 7895,AA128561,20,228,AGGTTGAGGGCAATGGACAA,, 7896,AA128561,20,222,AGGGCAATGGACAAGGAAGG,
- 7897,AA128561,20,216,ATGGACAAGGAAGGAATAAA,, 7898,AA128561,20,210,AAGGAAGGAATAAAGGGAGA,, 7899,AA128561,20,204,GGAATAAAGGGAGAAGAGGG,, 7900,AA128561,20,198,AAGGGAGAAGAGGGAAAACA,, 7901,AA128561,20,192,GAAGAGGGAAAACAGAAAAC,,
- 7902,AA128561,320,186,GGAAAACAGAAAACCTGATG,, 7903,AA128561,320,180,CAGAAAACCTGATGCTGGGG,, 7904,AA128561,320,174,ACCTGATGCTGGGGACACAG,, 7905,AA128561,320,168,TGCTGGGGACACAGCATCAG,, 7906,AA128561,320,162,GGACACAGCATCAGCTCAAG,, 7907,AA128561,320,156,AGCATCAGCTCAAGACGTCA,
- 75 7908,AA128561,,20,150,AGCTCAAGACGTCACCCTCC,,

7909,AA128561,,20,144,AGACGTCACCCTCCATTCTG.. 7910,AA128561,,20,138,CACCCTCCATTCTGCACTCA,, 7911,AA128561,,20,132,CCATTCTGCACTCAGAAAAT,, 7912,AA128561,,20,126,TGCACTCAGAAAATGGCACT,, 7913,AA128561,,20,120,CAGAAAATGGCACTTGGGGG,, 7914,AA128561,,20,114,ATGGCACTTGGGGGACTGGG,, 7915,AA128561,,20,108,CTTGGGGGACTGGGCGCAGT,, 7916,AA128561,,20,102,GGACTGGGCGCAGTTGGTCT,, 7917,AA128561,20,96,GGCGCAGTTGGTCTTTAACC,, 10 7918,AA128561,,20,90,GTTGGTCTTTAACCACTTTT,, 7919,AA128561,,20,84,CTTTAACCACTTTTCAATGT,, 7920,AA128561,,20,78,CCACTTTTCAATGTCTAAAA,, 7921,AA128561,,20,72,TTCAATGTCTAAAAACATTT,, 7922,AA128561,,20,66,GTCTAAAAACATTTGTTTGT,, 15 7923,AA128561,,20,60,AAACATTTGTTTGTGGTCTA,, 7924,AA128561,,20,54,TTGTTTGTGGTCTATAAGAT,, 7925,AA 128561,,20,48,GTGGTCTATAAGATGAAACA,, 7926,AA128561,,20,42,TATAAGATGAAACATCATTT,, 7927,AA128561,,20,36,ATGAAACATCATTTCAATCG,, 7928,AA128561,,20,30,CATCATTTCAATCGTAAAAT,, 20 7929,AA128561,,20,24,TTCAATCGTAAAATTTCCCA,, 7930,AA128561,,20,18,CGTAAAATTTCCCATTAAAG,, 7931,AA128561,,20,12,ATTTCCCATTAAAGAAGTTT,, 7932,AA128561,.20,6,CATTAAAGAAGTTTTTTTTT., 25 (GENBANK ACCESSION NO. N58473) ACTTTAGTTTCTCTGGTTCTCTGAATAACTGCCATCTATTTCTAAGCAACAGGAAAAGAATCTATATGAAACTTCTCGAAAAAGTACTT TCTGGCCAGGCGTGGTTGTTCACACCTGTAATTTCAGCATGTTGGGAGGCTGAGGCAGGTGGATTACTTGAGGCCAGGAGTTCAAGA 30 $\tt CCAGCCTGGCCAACATGGCGAAACCCCGTCTCTACTAAACATACAAAAAAATCAGTTGGGCATGGTGGCGTGTGCTGTAGTCCCAGC$ TACTTGGGAGGCTGAGGCACAAGAATTGCTTCAACCCAGGGGACAGAAAAGAAAAGTACATTCTTTGGACATAGCTTCATTGCAGA AAAAGAAAAAAATCNCATCAAAGCAATTCATCTCTAACTAAAATACTAGGCATGTTGGTCNCGTGCCGA (SEQ ID NO: 7933) 35 7934,N58473,,20,572,TCGGCACGNGACCAACATGC,, 7935,N58473,,20,566,CGNGACCAACATGCCTAGTA,, 7936,N58473,,20,560,CAACATGCCTAGTATTTTAG,, 7937,N58473,,20,554,GCCTAGTATTTTAGTTAGAG,, 7938,N58473,,20,548,TATTTTAGTTAGAGATGAAT,, 40 7939,N58473,,20,542,AGTTAGAGATGAATTGCTTT,, 7940,N58473,,20,536,AGATGAATTGCTTTGATGNG,, 7941,N58473,,20,530,ATTGCTTTGATGNGATTTTT,, 7942,N58473,,20,524,TTGATGNGATTTTTTTTCTT,, 7943,N58473,,20,518,NGATTTTTTTTTTTTTCTG,, 45 7944,N58473,,20,512,TTTTTCTTTTTCTGCAATGA,, 7945,N58473,,20,506,TTTTTCTGCAATGAAGCTAT,, 7946,N58473,,20,500,TGCAATGAAGCTATGTCCAA,, 7947,N58473,,20,494,GAAGCTATGTCCAAAGAATG,, 7948,N58473,,20,488,ATGTCCAAAGAATGTACTTT,, 7949,N58473,,20,482,AAAGAATGTACTTTTCTTTT,, 50 7950,N58473,,20,476,TGTACTTTTCTTTTCTGTCC,, 7951,N58473,,20,470,TTTCTTTTCTGTCCCCTGGG,, 7952,N58473,,20,464,TTCTGTCCCCTGGGTTGAAG,, 7953,N58473,,20,458,CCCCTGGGTTGAAGCAATTC,, 55 7954,N58473,,20,452,GGTTGAAGCAATTCTTGTGC,, 7955,N58473,,20,446,AGCAATTCTTGTGCCTCAGC,, 7956,N58473,,20,440,TCTTGTGCCTCAGCCTCCCA,, 7957,N58473,,20,434,GCCTCAGCCTCCCAAGTAGC,, 7958,N58473,,20,428,GCCTCCCAAGTAGCTGGGAC,, 60 7959,N58473,,20,422,CAAGTAGCTGGGACTACAGC,, 7960,N58473,,20,416,GCTGGGACTACAGCACACGC,, 7961,N58473,,20,410,ACTACAGCACACGCCACCAT,, 7962,N58473,,20,404,GCACACGCCACCATGCCCAA,, 7963,N58473,,20,398,GCCACCATGCCCAACTGATT,, 65 7964,N58473,,20,392,ATGCCCAACTGATTTTTTGT,, 7965,N58473,,20,386,AACTGATTTTTTGTATGTTT,,7966,N58473,,20,380,TTTTTTGTATGTTTAGTAGA,, 7967,N58473,,20,374,GTATGTTTAGTAGAGACGGG,, 7968,N58473,,20,368,TTAGTAGAGACGGGGTTTCG,, 70 7969,N58473,,20,362,GAGACGGGGTTTCGCCATGT,, 7970,N58473,,20,356,GGGTTTCGCCATGTTGGCCA,, 7971,N58473,,20,350,CGCCATGTTGGCCAGGCTGG,, 7972,N58473,,20,344,GTTGGCCAGGCTGGTCTTGA,,

7973,N58473,,20,338,CAGGCTGGTCTTGAACTCCT,,

7974,N58473,,20,332,GGTCTTGAACTCCTGGCCTC,,

7975,N58473,,20,326,GAACTCCTGGCCTCAAGTAA,, 7976,N58473,,20,320,CTGGCCTCAAGTAATCCACC,, 7977,N58473,,20,314,TCAAGTAATCCACCTGCCTC,, 7978,N58473,,20,308,AATCCACCTGCCTCAGCCTC,, 7979,N58473,,20,302,CCTGCCTCAGCCTCCCAACA,, 7980,N58473,,20,296,TCAGCCTCCCAACATGCTGA,, 7981,N58473,,20,290,TCCCAACATGCTGAAATTAC,, 7982,N58473,,20,284,CATGCTGAAATTACAGGTGT,, 7983,N58473,,20,278,GAAATTACAGGTGTGAACAA,, 10 7984,N58473,,20,272,ACAGGTGTGAACAACCACGC,, 7985,N58473,,20,266,GTGAACAACCACGCCTGGCC,, 7986,N58473,,20,260,AACCACGCCTGGCCAGAAAG,, 7987,N58473,,20,254,GCCTGGCCAGAAAGTACTTT,, 7988,N58473,,20,248,CCAGAAAGTACTTTTCGAGA,, 15 7989,N58473,,20,242,AGTACTTTTCGAGAAGTTTC,, 7990,N58473,,20,236,TTTCGAGAAGTTTCATATAG,, 7991,N58473,,20,230,GAAGTTTCATATAGATTCTT,, 7992,N58473,,20,224,TCATATAGATTCTTTTCCTG,, 7993,N58473,,20,218,AGATTCTTTTCCTGTTGCTT,, 7994,N58473,,20,212,TTTTCCTGTTGCTTAGAAAT,, 7995,N58473,,20,206,TGTTGCTTAGAAATAGATGG,, 7996,N58473,,20,200,TTAGAAATAGATGGCAGTTA,, 7997,N58473,,20,194,ATAGATGGCAGTTATTCAGA,, 7998,N58473,,20,188,GGCAGTTATTCAGAGAACCA,, 25 7999,N58473,,20,182,TATTCAGAGAACCAGAGAAA,, 8000,N58473,,20,176,GAGAACCAGAGAAACTAAAG,, 8001,N58473,,20,170,CAGAGAAACTAAAGTGTGTA,, 8002,N58473,,20,164,AACTAAAGTGTGTACATTTC,, 8003,N58473,,20,158,AGTGTGTACATTTCCCAGTC,, 30 8004,N58473,,20,152,TACATTTCCCAGTCAAAAA,, 8005,N58473,,20,146,TCCCAGTCAAAAAAAAAATAC,, 8006,N58473,,20,140,TCAAAAAAAAAAATACGATAAA,, 8007,N58473,,20,134,AAAAATACGATAAAAATATT,, 8008,N58473,,20,128,ACGATAAAAATATTGACTAT,, 35 8009,N58473,,20,122,AAAATATTGACTATGAGCAG,, 8010,N58473,,20,116,TTGACTATGAGCAGATATAT,, 8011,N58473,,20,110,ATGAGCAGATATATTGTCTG,, 8012,N58473,,20,104,AGATATATTGTCTGGATTGT,, 8013,N58473,,20,98,ATTGTCTGGATTGTCTGTTA,, 40 8014,N58473,,20,92,TGGATTGTCTGTTAATTATC,, 8015,N58473,,20,86,GTCTGTTAATTATCCGTGTT,, 8016,N58473,,20,80,TAATTATCCGTGTTCACATG,, 8017,N58473,,20,74,TCCGTGTTCACATGCAGTGA,, 8018,N58473,,20,68,TTCACATGCAGTGAGTAATA,, 45 8019,N58473,,20,62,TGCAGTGAGTAATATTTGGC,, 8020,N58473,,20,56,GAGTAATATTTGGCACATTT,, 8021,N58473,,20,50,TATTTGGCACATTTTTTTCT,, 8022,N58473,,20,44,GCACATTTTTTTCTACATTC,, 8023,N58473,,20,38,TTTTTTCTACATTCCTTATT,, 50 8024,N58473,,20,32,CTACATTCCTTATTTTCATC,, 8025,N58473,,20,26,TCCTTATTTTCATCCAGAGT,, 8026,N58473,,20,20,TTTTCATCCAGAGTATAATT, 8027,N58473,,20,14,TCCAGAGTATAATTAATGTC,, 8028,N58473,,20,8,GTATAATTAATGTCTTAATA,, 55 8029,N58473,,20,2,TTAATGTCTTAATATACCCA,, (GENBANK ACCESSION NO. AA679352) TTTTTTTTTTTTTTTTTTTTTTTTTACTGACAAATGCAGAGCAATTAAATTCTTTATTATAAAAAATCTCAAAAAATGTCCACCTTTACTGGAGACCA ATCTTCTAAAAGGTCAAAAGCAATCCTGCTGTTTCTCTCTGAAAGCTAAACTCCTTTAAATGAGAATACGAGAATACCCAGAATTTT 60 ATTCAAATGGTGCTTCAAATTAAATAATTTTAATTATCATTCTAGCCAAGATCATACTAAGTAGGATCTCCTGACAGTCCCATATGGC AGGGATTTAACCTAAAACGTGGCACTGAATGCTTCGCCA (SEQ ID NO: 8030) 8031,AA679352,,20,458,TGGCGAAGCATTCAGTGCCA,, 8032,AA679352,,20,452,AGCATTCAGTGCCACGTTTT,, 8033,AA679352,,20,446,CAGTGCCACGTTTTAGGTTA,, 8034,AA679352,,20,440,CACGTTTTAGGTTAAATCCC,, 8035,AA679352,,20,434,TTAGGTTAAATCCCTGCCAT,, 8036,AA679352,,20,428,TAAATCCCTGCCATATGGGA,, 8037, AA679352, 20,422, CCTGCCATATGGGACTGTCA, 8038,AA679352,,20,416,ATATGGGACTGTCAGGAGAT,,

8039,AA679352,,20,410,GACTGTCAGGAGATCCTACT,, 8040,AA679352,,20,404,CAGGAGATCCTACTTAGTAT,,

8041, AA679352, 20,398, ATCCTACTTAGTATGATCTT.

8042,AA679352,,20,392,CTTAGTATGATCTTGGCTAG,, 8043,AA679352,,20,386,ATGATCTTGGCTAGAATGAT,, 8044,AA679352,,20,380,TTGGCTAGAATGATAATTAA,, 8045,AA679352,,20,374,AGAATGATAATTAAAATTAT,, 8046,AA679352,,20,368,ATAATTAAAATTATTTAATT,, 8047,AA679352,,20,362,AAAATTATTTAATTTGAAGC,, 8048,AA679352,,20,356,ATTTAATTTGAAGCACCATT,, 8049,AA679352,,20,350,TTTGAAGCACCATTTGAATG,, 8050,AA679352,,20,344,GCACCATTTGAATGTTCGTA,, 10 8051,AA679352,,20,338,TTTGAATGTTCGTAATAGTA,, 8052,AA679352,,20,332,TGTTCGTAATAGTAGAAAAT,, 8053,AA679352,,20,326,TAATAGTAGAAAATGATGTG,, 8054,AA679352,,20,320,TAGAAAATGATGTGAATTTT,, 8055,AA679352,,20,314,ATGATGTGAATTTTCTTTCT,, 15 8056,AA679352,,20,308,TGAATTTTCTTTCTGTTCGG,, 8057,AA679352,,20,302,TTCTTTCTGTTCGGCTCCTA,, 8058,AA679352,,20,296,CTGTTCGGCTCCTATTTTTC,, 8059,AA679352,,20,290,GGCTCCTATTTTTCTCATCA,, 8060,AA679352,,20,284,TATTTTTCTCATCATTTTGT,, 20 8061,AA679352,,20,278,TCTCATCATTTTGTTTTCTT,, 8062,AA679352,,20,272,CATTTTGTTTTCTTTAATTG,, 8063,AA679352,,20,266,GTTTTCTTTAATTGGGTTGA,, 8064,AA679352,,20,260,TTTAATTGGGTTGAATGGAG,, 8065,AA679352,,20,254,TGGGTTGAATGGAGTAGATA,, 25 8066,AA679352,,20,248,GAATGGAGTAGATAGAAATA,, 8067,AA679352,,20,242,AGTAGATAGAAATATTTATG,, 8068,AA679352,,20,236,TAGAAATATTTATGGTTTAG,, 8069,AA679352,,20,230,TATTTATGGTTTAGGTAACA,, 8070,AA679352,,20,224,TGGTTTAGGTAACAGTTAGA,, 30 8071,AA679352,,20,218,AGGTAACAGTTAGATGTTTC,, 8072,AA679352,,20,212,CAGTTAGATGTTTCCTAAGA,, 8073,AA679352,,20,206,GATGTTTCCTAAGAATGCAA,, 8074,AA679352,,20,200,TCCTAAGAATGCAAACTGCC,, 8075,AA679352,,20,194,GAATGCAAACTGCCTTTTCC,, 35 8076,AA679352,,20,188,AAACTGCCTTTTCCACACAA,, 8077, AA679352,, 20, 182, CCTTTTCCACACAAAGGCTG,, 8078, AA679352,, 20,176, CCACACAAAGGCTGGGAATA,, 8079,AA679352,,20,170,AAAGGCTGGGAATAAAATTC,, 8080,AA679352,,20,164,TGGGAATAAAATTCTGGGTA,, 40 8081,AA679352,,20,158,TAAAATTCTGGGTATTCTCG,, 8082,AA679352,,20,152,TCTGGGTATTCTCGTATTCT, 8083,AA679352,,20,146,TATTCTCGTATTCTCATTTA,, 8084,AA679352,,20,140,CGTATTCTCATTTAAAGGAG,, 8085,AA679352,,20,134,CTCATTTAAAGGAGTTTAGC,, 45 8086,AA679352,,20,128,TAAAGGAGTTTAGCTTTCAG,, 8087,AA679352,,20,122,AGTTTAGCTTTCAGAGAGAA,, 8088,AA679352,,20,116,GCTTTCAGAGAGAAACAGCA,, 8089,AA679352,,20,110,AGAGAGAAACAGCAGGATTG,, 8090,AA679352,,20,104,AAACAGCAGGATTGCTTTTG,, 8091,AA679352,,20,98,CAGGATTGCTTTTGACCTTT,, 50 8092,AA679352,,20,92,TGCTTTTGACCTTTTAGAAG,, 8093,AA679352,,20,86,TGACCTTTTAGAAGATTGGT,, 8094,AA679352,,20,80,TTTAGAAGATTGGTCTCCAG,, 8095,AA679352,,20,74,AGATTGGTCTCCAGTAAAGG,, 55 8096,AA679352,,20,68,GTCTCCAGTAAAGGTGGACA,, 8097,AA679352,,20,62,AGTAAAGGTGGACATTTTTG,, 8098,AA679352,,20,56,GGTGGACATTTTTGAGATTT,, 8099, AA679352, 20,50, CATTTTTGAGATTTTTATAA, 8100,AA679352,,20,44,TGAGATTTTTATAATAAAGA,, 60 8101,AA679352,,20,38,TTTTATAATAAAGAATTTAA,, 8102,AA679352,,20,32,AATAAAGAATTTAATTGCTC,, 8103,AA679352,,20,26,GAATTTAATTGCTCTGCATT, 8104,AA679352,,20,20,AATTGCTCTGCATTTGTCAA,, 8105,AA679352,,20,14,TCTGCATTTGTCAAGTAAAA,, 65 8106,AA679352,,20,8,TTTGTCAAGTAAAAAAAAA,,, 8107,AA679352,,20,2,AAGTAAAAAAAAAAAAAAA,, (GENBANK ACCESSION NO. N55459) CCAGGTTTGTACATGTCTCTCTGTTTACATCTGGGAGAAAGGTTGTCCTGGCATCAGTCGCAGCAGCAGCTGCACTTCTCTTGACGCCCCT 70 TTGCNAACACAGCCTGGGCACACTTGCTACAGCCCACGGGCANGCAGGAGCAGCAGCTCTTCTTGCANGAGGGTG (SEQ ID NO: 8108)

8109,N55459,,20,231,CACCCTCNTGCAAGAAGAGC., 8110,N55459,,20,225,CNTGCAAGAAGAGCTGCTGC,,

75 8111,N55459,,20,219,AGAAGAGCTGCTGCTCCTGC,,

```
8112,N55459.,20,213,GCTGCTGCTCCTGCNTGCCC.,
     8113,N55459,,20,207,GCTCCTGCNTGCCCGTGGGC,,
     8114,N55459,,20,201,GCNTGCCCGTGGGCTGTAGC,,
     8115,N55459,,20,195,CCGTGGGCTGTAGCAAGTGT,,
     8116,N55459,,20,189,GCTGTAGCAAGTGTGCCCAG,,
     8117,N55459,,20,183,GCAAGTGTGCCCAGGGCTGT,,
     8118,N55459,,20,177,GTGCCCAGGGCTGTGTTNGC,,
     8119,N55459,,20,171,AGGGCTGTGTTNGCAAAGGG,,
     8120,N55459,,20,165,GTGTTNGCAAAGGGGCGTCA,,
10
     8121,N55459,,20,159,GCAAAGGGGCGTCAAGAGAA,,
     8122,N55459,,20,153,GGGCGTCAAGAGAAGTGCAG,,
     8123,N55459,20,147,CAAGAGAAGTGCAGCTGCTG,
     8124,N55459,,20,141,AAGTGCAGCTGCTGCGACTG,,
     8125,N55459,,20,135,AGCTGCTGCGACTGATGCCA,,
     8126,N55459,,20,129,TGCGACTGATGCCAGGACAA,,
     8127,N55459,,20,123,TGATGCCAGGACAACCTTTC,,
     8128,N55459,,20,117,CAGGACAACCTTTCTCCCAG,,
     8129,N55459,,20,111,AACCTTTCTCCCAGATGTAA,,
     8130,N55459,,20,105,TCTCCCAGATGTAAACAGAG,,
     8131,N55459,,20,99,AGATGTAAACAGAGAGACAT,,
     8132,N55459,,20,93,AAACAGAGAGACATGTACAA,,
     8133,N55459,,20,87,AGAGACATGTACAAACCTGG,,
     8134,N55459,,20,81,ATGTACAAACCTGGATTTTT,,
     8135,N55459,,20,75,AAACCTGGATTTTTTTTA,,
     8136,N55459,,20,69,GGATTTTTTTTTTATACCAC,,
     8137,N55459,,20,63,TTTTTTTATACCACCTTGAC,,
     8138,N55459,,20,57,TATACCACCTTGACCCATTT,,
     8139,N55459,,20,51,ACCTTGACCCATTTGCTACA,,
     8140,N55459,,20,45,ACCCATTTGCTACATTCCTT,,
     8141,N55459,,20,39,TTGCTACATTCCTTTTCCTG,,
     8142,N55459,,20,33,CATTCCTTTTCCTGTGAAAT,,
     8143,N55459,,20,27,TTTTCCTGTGAAATATGTGA,,
     8144,N55459,,20,21,TGTGAAATATGTGAGTGATA,,
     8145,N55459,,20,15,ATATGTGAGTGATAATTAAA,,
     8146,N55459,,20,9,GAGTGATAATTAAACACTTT,,
     8147,N55459,,20,3,TAATTAAACACTTTAGACCT,,
     (GENBANK ACCESSION NO. AA150500)
     TTTGGCGTAGAGAAAATATAGAGCCACTTTACTATTAAAAATGTATTTTCCAAAAAGCAAGGTAGTTGCTGTCCCAAAAAGCCGAAA
     GCCTCTAGTCCCTGCGGAACGGGCTGGATGGGGCTTCAGTCTGACACAGCCAGGCGGGGCAGCCCTCGNCGNGCTCGGATTCTCTG
40
     GGAGATTTGATAGAGCTCCATCGTTGCCCTCGCATCTTTCCACCGAGCTGTGCCAAGCAGGCTGTTCTGGATGCTCTTGTGCAGGAG
     GCGCTCACTCAGCACCCGCAGAGAACACGCCTGCAGTGGTCCAGCTTGGCCTCACGCCACAACAGCCTGTCAGTGGACGTGTCGTA
     GATTGTGTAGCCGCTCATGTCCTCTTTCAGTGCCTGGAAGTCGTGCTTCAGGTCATGACCCACCACCACCAGCTTGCCTTTCAGGAGCTGC
     AGGATCTCTAGCCTGGCCACGGCAAATGGTGTGGCCCCCACCATGTGCTGAGGGGTGACCCGCTGAACCAGGTTCTG
     (SEQ ID NO: 8148)
45
     8149,AA150500,,20,491,CAGAACCTGGTTCAGCGGGT,,
     8150,AA150500,,20,485,CTGGTTCAGCGGGTCACCCC,,
     8151,AA150500,,20,479,CAGCGGGTCACCCCTCAGCA,,
     8152,AA150500,,20,473,GTCACCCCTCAGCACATGGT,,
     8153,AA150500,,20,467,CCTCAGCACATGGTGGGGGC,,
     8154,AA150500,,20,461,CACATGGTGGGGGCCACACC,,
     8155,AA150500,,20,455,GTGGGGGCCACACCATTTGC,,
     8156,AA150500,,20,449,GCCACACCATTTGCCGTGGC,,
     8157,AA150500,,20,443,CCATTTGCCGTGGCCAGGCT,,
     8158,AA150500,,20,437,GCCGTGGCCAGGCTAGAGAT,,
     8159,AA150500,,20,431,GCCAGGCTAGAGATCCTGCA,,
     8160,AA150500,,20,425,CTAGAGATCCTGCAGCTCCT,,
     8161,AA150500,,20,419,ATCCTGCAGCTCCTGAAAGG,,
     8162,AA150500,,20,413,CAGCTCCTGAAAGGCAAGCT,,
60
     8163,AA150500,,20,407,CTGAAAGGCAAGCTGGTGGT,,
     8164,AA150500,,20,401,GGCAAGCTGGTGGTGGTCA,,
     8165,AA150500,,20,395,CTGGTGGTGGTCATGACCT,,
     8166,AA150500,,20,389,GTGGGTCATGACCTGAAGCA,,
     8167,AA150500,,20,383,CATGACCTGAAGCACGACTT,,
65
     8168,AA150500,,20,377,CTGAAGCACGACTTCCAGGC,,
     8169, AA150500, 20,371, CACGACTTCCAGGCACTGAA,
     8170,AA150500,,20,365,TTCCAGGCACTGAAAGAGGA,,
     8171,AA150500,,20,359,GCACTGAAAGAGGACATGAG,,
     8172,AA150500,,20,353,AAAGAGGACATGAGCGGCTA,,
     8173,AA150500,,20,347,GACATGAGCGGCTACACAAT,,
     8174,AA150500,,20,341,AGCGGCTACACAATCTACGA,,
     8175,AA150500,,20,335,TACACAATCTACGACACGTC,,
```

8176,AA150500,,20,329,ATCTACGACACGTCCACTGA,, 8177,AA150500,,20,323,GACACGTCCACTGACAGGCT,, 8178,AA150500,,20,317,TCCACTGACAGGCTGTTGTG,

8179,AA150500,,20,311,GACAGGCTGTTGTGGCGTGA,, 8180,AA150500,,20,305,CTGTTGTGGCGTGAGGCCAA,, 8181,AA150500,,20,299,TGGCGTGAGGCCAAGCTGGA,, 8182,AA150500,,20,293,GAGGCCAAGCTGGACCACTG,, 8183,AA150500,,20,287,AAGCTGGACCACTGCAGGCG,, 8184,AA150500,,20,281,GACCACTGCAGGCGTGTTCT,, 8185,AA150500,,20,275,TGCAGGCGTGTTCTCTGCGG,, 8186,AA150500,,20,269,CGTGTTCTCTGCGGGTGCTG,, 8187,AA150500,,20,263,CTCTGCGGGTGCTGAGTGAG,, 10 8188,AA150500,,20,257,GGGTGCTGAGTGAGCGCCTC,, 8189,AA150500,,20,251,TGAGTGAGCGCCTCCTGCAC,, 8190,AA150500,,20,245,AGCGCCTCCTGCACAAGAGC,, 8191,AA150500,,20,239,TCCTGCACAAGAGCATCCAG,, 8192,AA150500,,20,233,ACAAGAGCATCCAGAACAGC,, 15 8193,AA150500,,20,227,GCATCCAGAACAGCCTGCTT,, 8194,AA150500,,20,221,AGAACAGCCTGCTTGGACAC,, 8195,AA150500,,20,215,GCCTGCTTGGACACAGCTCG,, 8196,AA150500,,20,209,TTGGACACAGCTCGGTGGAA,, 8197,AA150500,,20,203,ACAGCTCGGTGGAAGATGCG,, 20 8198,AA150500,,20,197,CGGTGGAAGATGCGAGGGCA,, 8199,AA150500,,20,191,AAGATGCGAGGGCAACGATG,, 8200,AA150500,,20,185,CGAGGGCAACGATGGAGCTC,, 8201,AA150500,,20,179,CAACGATGGAGCTCTATCAA,, 8202,AA150500,,20,173,TGGAGCTCTATCAAATCTCC,, 8203,AA150500,,20,167,TCTATCAAATCTCCCAGAGA,, 8204,AA150500,,20,161,AAATCTCCCAGAGAATCCGA,, 8205,AA150500,,20,155,CCCAGAGAATCCGAGCNCGN,, 8206,AA150500,,20,149,GAATCCGAGCNCGNCGAGGG,, 8207,AA150500,,20,143,GAGCNCGNCGAGGGCTGCCC,, 30 8208,AA150500,,20,137,GNCGAGGGCTGCCCCGCCTG,, 8209,AA150500,,20,131,GGCTGCCCGCCTGGCTGTG,, 8210,AA150500,,20,125,CCCGCCTGGCTGTCAGAC,, 8211,AA150500,,20,119,TGGCTGTGTCAGACTGAAGC., 8212,AA150500,,20,113,TGTCAGACTGAAGCCCCATC,, 35 8213,AA150500,,20,107,ACTGAAGCCCCATCCAGCCC,, 8214,AA150500,,20,101,GCCCCATCCAGCCCGTTCCG,, 8215,AA150500,,20,95,TCCAGCCCGTTCCGCAGGGA., 8216,AA150500,,20,89,CCGTTCCGCAGGGACTAGAG,, 8217,AA150500,,20,83,CGCAGGGACTAGAGGCTTTC,, 40 8218,AA150500,,20,77,GACTAGAGGCTTTCGGCTTT,, 8219,AA150500,,20,71,AGGCTTTCGGCTTTTTGGGA,, 8220,AA150500,,20,65,TCGGCTTTTTGGGACAGCAA,, 8221,AA150500,,20,59,TTTTGGGACAGCAACTACCT,, 8222,AA150500,,20,53,GACAGCAACTACCTTGCTTT,, 45 8223,AA150500,,20,47,AACTACCTTGCTTTTGGAAA,, 8224,AA150500,,20,41,CTTGCTTTTGGAAAATACAT,, 8225,AA150500,,20,35,TTTGGAAAATACATTTTTAA,, 8226,AA150500,,20,29,AAATACATTTTTAATAGTAA,, 8227,AA150500,,20,23,ATTTTTAATAGTAAAGTGGC,, 50 8228,AA150500,,20,17,AATAGTAAAGTGGCTCTATA,, 8229,AA150500,,20,11,AAAGTGGCTCTATATTTTCT,, 8230,AA150500,,20,5,GCTCTATATTTTCTCTACGC,, (GENBANK ACCESSION NO. H16833) TTTTTTTTAGGGGGCTATAGAAGGGATTGTGACATTTATTGTTCTGAAAATGCCATCAAAGACAGTTGTAAAGNCTAGTCTCATAC ACACTTGGCAAGACATAGCCAAAAGAGGTAAATTTGAAATTAGAAAAAATATCAGCAGTTATTACCCAGAGCTTGAAATTCTGACC AGAGGACATCTTGAAAATGATAAAGTAGCAGGAAANTTACAAAGTTATAACTTNATTTACAAGNTCCCTA (SEQ ID NO: 8231) 60 8232,H16833,,20,311,TAGGGANCTTGTAAATNAAG,, 8233,H16833,,20,305,NCTTGTAAATNAAGTTATAA,, 8234,H16833,,20,299,AAATNAAGTTATAACTTTGT,, 8235,H16833,,20,293,AGTTATAACTTTGTAANTTT, 8236,H16833,,20,287,AACTTTGTAANTTTCCTGCT,, 65 8237,H16833,,20,281,GTAANTTTCCTGCTACTTTA,, 8238,H16833,,20,275,TTCCTGCTACTTTATCATTT,, 8239,H16833,,20,269,CTACITTATCATTTTCAAGA,, 8240,H16833,,20,263,TATCATTTTCAAGATGTCCT,, 8241,H16833,,20,257,TTTCAAGATGTCCTCTAGGA,, 70 8242,H16833,,20,251,GATGTCCTCTAGGAATTTTT,, 8243,H16833,,20,245,CTCTAGGAATTTTTTTCTA,, 8244,H16833,,20,239,GAATTTTTTTCTAGTAATT,, 8245,H16833,,20,233,TTTTTCTAGTAATTTTGCAA,, 8246,H16833,,20,227,TAGTAATTTTGCAATCTACC,

75

8247,H16833,,20,221,TTTTGCAATCTACCTAATAA,

8248,H16833,,20,215,AATCTACCTAATAAGTACCT,, 8249,H16833,,20,209,CCTAATAAGTACCTAAATAC,, 8250,H16833,,20,203,AAGTACCTAAATACGCTGAA,, 8251,H16833,,20,197,CTAAATACGCTGAAATGGAG,, 8252,H16833,,20,191,ACGCTGAAATGGAGGTTGAA,, 8253,H16833,,20,185,AAATGGAGGTTGAATATCCT,, 8254,H16833,,20,179,AGGTTGAATATCCTACTGTG,, 8255,H16833,,20,173,AATATCCTACTGTGTAACAG,, 8256,H16833,,20,167,CTACTGTGTAACAGGTCAGA,, 8257,H16833,,20,161,TGTAACAGGTCAGAATTTCA,, 8258,H16833,,20,155,AGGTCAGAATTTCAAGCTCT,, 8259,H16833,,20,149,GAATTTCAAGCTCTGGGTAA,, 8260,H16833,,20,143,CAAGCTCTGGGTAATAACTG,, 8261,H16833,,20,137,CTGGGTAATAACTGCTGATA,, 15 8262,H16833,,20,131,AATAACTGCTGATATTTTTT,, 8263,H16833,,20,125,TGCTGATATTTTTTCTAATT,, 8264,H16833,,20,119,TATTTTTCTAATTTCAAAT,, 8265,H16833,,20,113,TTCTAATTTCAAATTTACCT,, 8266,H16833,,20,107,TTTCAAATTTACCTCTTTTG,, 20 8267,H16833,,20,101,ATTTACCTCTTTTGGCTATG,, 8268,H16833,,20,95,CTCTTTTGGCTATGTCTTGC,, 8269,H16833,,20,89,TGGCTATGTCTTGCCAAGTG,, 8270,H16833,,20,83,TGTCTTGCCAAGTGTGTATG,, 8271,H16833,,20,77,GCCAAGTGTGTATGAGACTA,, 8272,H16833,,20,71,TGTGTATGAGACTAGNCTTT,, 8273,H16833,,20,65,TGAGACTAGNCTTTACAACT,, 8274,H16833,,20,59,TAGNCTTTACAACTGTCTTT,, 8275,H16833,,20,53,TTACAACTGTCTTTGATGGC,, 8276,H16833,,20,47,CTGTCTTTGATGGCATTTTC,, 30 8277,H16833,,20,41,TTGATGGCATTTTCAGAACA,, 8278,H16833,,20,35,GCATTTTCAGAACAATAAAT,, 8279,H16833,,20,29,TCAGAACAATAAATGTCACA,, 8280,H16833,,20,23,CAATAAATGTCACAATCCCT,, 8281,H16833,,20,17,ATGTCACAATCCCTTCTATA,, 35 8282,H16833,,20,11,CAATCCCTTCTATAGCCCCC,, 8283,H16833,,20,5,CTTCTATAGCCCCCTAAAAA,, (GENBANK ACCESSION NO. AA644211) TAGTACAAAAATAAACAGACATTTATTTCCAGACTTATCTTTTACATAAGTTAAATACACATTTGTCTGAGGCACTGAAACATTCGC 40 TTTTATACAAGCATATTGACTATTTCTTTCTTTAACCTTAAACATTCTAAACGTAAAATTGTAAAGAAGATTCTCTGAGTTATCTTTA TTTAAAAATATTAAAACCCACAGTGCTTGA (SEQ ID NO: 8284) 8285,AA644211,,20,362,TCAAGCACTGTGGGTTTTAA,, 45 8286, AA644211,, 20,356, ACTGTGGGTTTTAATATTTT,, 8287,AA644211,,20,350,GGTTTTAATATTTTTAAATC,, 8288,AA644211,,20,344,AATATTTTTAAATCAAACGC,, 8289,AA644211,,20,338,TTTAAATCAAACGCTGATTA,, 8290,AA644211,,20,332,TCAAACGCTGATTACAGATA,, 8291, AA644211, 20,326, GCTGATTACAGATAATAGTA, 8292, AA644211, 20,320, TACAGATAATAGTATTTATA,, 8293,AA644211,,20,314,TAATAGTATTTATATAAATA,, 8294,AA644211,,20,308,TATTTATATAAATAATTGAA,, 55 8295, AA644211, 20,302, TATAAATAATTGAAAAAAAT, 8296,AA644211,,20,296,TAATTGAAAAAAATTTTCTT,, 8297,AA644211,,20,290,AAAAAAATTTTCTTTTGGGA,, 8298,AA644211,,20,284,ATTTTCTTTTGGGAAGAGGGG,, 8299, AA644211,, 20, 278, TTTTGGGAAGAGGGGAGAAAA,, 8300,AA644211,,20,272,GAAGAGGGAGAAAATGAAAT,, 8301,AA644211,,20,266,GGAGAAAATGAAATAAATAT,, 8302,AA644211,,20,260,AATGAAATAAATATCATTAA,, 8303,AA644211,,20,254,ATAAATATCATTAAAGATAA,, 8304,AA644211,,20,248,ATCATTAAAGATAACTCAGG,, 65 8305,AA644211,,20,242,AAAGATAACTCAGGAGAATC,, 8306, AA644211,, 20, 236, AACTCAGGAGAATCTTCTTT,, 8307, AA644211,, 20, 230, GGAGAATCTTCTTTACAATT,, 8308,AA644211,,20,224,TCTTCTTTACAATTTTACGT,, 8309,AA644211,,20,218,TTACAATTTTACGTTTAGAA,, 70 8310,AA644211,,20,212,TTTTACGTTTAGAATGTTTA,, 8311,AA644211,,20,206,GTTTAGAATGTTTAAGGTTA,, 8312,AA644211,,20,200,AATGTTTAAGGTTAAGAAAG,, 8313,AA644211,,20,194,TAAGGTTAAGAAAGAAATAG,, 8314,AA644211,,20,188,TAAGAAAGAAATAGTCAATA,, 8315,AA644211,,20,182,AGAAATAGTCAATATGCTTG,,

8316,AA644211,,20,176,AGTCAATATGCTTGTATAAA,, 8317,AA644211,,20,170,TATGCTTGTATAAAACACTG,, 8318,AA644211,,20,164,TGTATAAAACACTGTTCACT,, 8319,AA644211,,20,158,AAACACTGTTCACTGTTTTT,, 8320,AA644211,,20,152,TGTTCACTGTTTTTTTAAA,, 8321,AA644211,,20,146,CTGTTTTTTTAAAAAAAAA,, 8322,AA644211,,20,140,TTTTTAAAAAAAAAAACTTGA,, 8323,AA644211,,20,134,AAAAAAAAAACTTGATTTGTT,, 8324,AA644211,,20,128,AAACTTGATTTGTTATTAAC,, 8325,AA644211,,20,122,GATTTGTTATTAACATTGAT,, 8326,AA644211,,20,116,TTATTAACATTGATCTGCTG,, 8327,AA644211,,20,110,ACATTGATCTGCTGACAAAA,, 8328,AA644211,,20,104,ATCTGCTGACAAAACCTGGG,, 8329,AA644211,,20,98,TGACAAAACCTGGGAATTTG,, 8330,AA644211,,20,92,AACCTGGGAATTTGGGTTGT,, 8331,AA644211,,20,86,GGAATTTGGGTTGTGTATGC,, 8332,AA644211,,20,80,TGGGTTGTGTATGCGAATGT,, 8333,AA644211,,20,74,GTGTATGCGAATGTTTCAGT,, 8334,AA644211,,20,68,GCGAATGTTTCAGTGCCTCA,, 20 8335,AA644211,,20,62,GTTTCAGTGCCTCAGACAAA,, 8336,AA644211,,20,56,GTGCCTCAGACAAATGTGTA,, 8337,AA644211,,20,50,CAGACAAATGTGTATTTAAC,, 8338,AA644211,,20,44,AATGTGTATTTAACITATGT,, 8339,AA644211,,20,38,TATTTAACTTATGTAAAAGA,, 25 8340,AA644211,,20,32,ACTTATGTAAAAGATAAGTC,, 8341,AA644211,,20,26,GTAAAAGATAAGTCTGGAAA,, 8342,AA644211,,20,20,GATAAGTCTGGAAATAAATG,, 8343,AA644211,,20,14,TCTGGAAATAAATGTCTGTT,, 8344,AA644211,,20,8,AATAAATGTCTGTTTATTTT,, 30 8345,AA644211,,20,2,TGTCTGTTTATTTTTGTACT., (GENBANK ACCESSION NO. AA001432) TTTTTTTAAGGACTACACTGCATTTTTTAATTCCATAAATTATAATCCTTTAACATATATGAAAGTTTCATATTCTTAAAGTGCTTTA TTCTGTGCATAACAATTTGAATAACAATTTTTTTATCTTCAAGAAATGGGATTTTTATATAAAAATACACATGTAGCACTGAATGCCAA AGTGATGGGTATCCATGGTCAGAATTCAAAATTAGATTCGCTATTAAACCTGTCTGGTTTGTGTCCTGAGTGAAGAATGATCTCGAG CCGGGGAGGGAGGTGCATTGGGTAATCAGTGCTTTTGAAGGTGAATTTCCTTGCTGTGAAATAGGCTTGGGTTACNGGGTCAGGAC AACCATTCAGACTGACAGGCCCCTGGACTTCCAAGGCTTCAGTGACAGGGACAGGGATGTGATTGNCATGAATATTCCTCAGACAG CCAAAGAATGATTTCCNCACAGGGATCCNCAGTGTCGTCAANTGGCNGGAGCACCTCA (SEQ ID NO: 8346) 40 8347,AA001432,,20,563,TGAGGTGCTCCNGCCANTTG,, 8348,AA001432,,20,557,GCTCCNGCCANTTGACGACA,, 8349,AA001432,,20,551,GCCANTTGACGACACTGNGG,, 8350,AA001432,,20,545,TGACGACACTGNGGATCCCT,, 8351,AA001432,,20,539,CACTGNGGATCCCTGTGNGG,, 8352,AA001432,,20,533,GGATCCCTGTGNGGAAATCA,, 8353,AA001432,,20,527,CTGTGNGGAAATCATTCTTT,, 8354,AA001432,,20,521,GGAAATCATTCTTTGGCTGT,, 8355,AA001432,,20,515,CATTCTTTGGCTGTCTGAGG,, 50 8356,AA001432,,20,509,TTGGCTGTCTGAGGAATATT,, 8357,AA001432,,20,503,GTCTGAGGAATATTCATGNC, 8358,AA001432,,20,497,GGAATATTCATGNCAATCAC,, 8359,AA001432,,20,491,TTCATGNCAATCACATCCCT,, 8360,AA001432,,20,485,NCAATCACATCCCTGTCCCT,, 8361,AA001432,,20,479,ACATCCCTGTCCCTGTCACT,, 8362,AA001432,,20,473,CTGTCCCTGTCACTGAAGCC,, 8363,AA001432,,20,467,CTGTCACTGAAGCCTTGGAA,, 8364,AA001432,,20,461,CTGAAGCCTTGGAAGTCCAG,, 8365,AA001432,,20,455,CCTTGGAAGTCCAGGGGCCT,, 8366,AA001432,,20,449,AAGTCCAGGGGCCTGTCAGT,, 8367,AA001432,,20,443,AGGGGCCTGTCAGTCTGAAT,, 8368,AA001432,,20,437,CTGTCAGTCTGAATGGTTGT,, 8369.AA001432,,20,431,GTCTGAATGGTTGTCCTGAC,, 8370,AA001432,,20,425,ATGGTTGTCCTGACCCNGTA,, 8371,AA001432,,20,419,GTCCTGACCCNGTAACCCAA,, 65 8372,AA001432,,20,413,ACCCNGTAACCCAAGCCTAT,, 8373.AA001432,,20,407,TAACCCAAGCCTATTTCACA,, 8374,AA001432,,20,401,AAGCCTATTTCACAGCAAGG,, 8375,AA001432,,20,395,ATTTCACAGCAAGGAAATTC,, 8376,AA001432,,20,389,CAGCAAGGAAATTCACCTTC,, 70 8377,AA001432,,20,383,GGAAATTCACCTTCAAAAGC,,

8378,AA001432,20,377,TCACCTTCAAAAGCACTGAT,, 8379,AA001432,,20,371,TCAAAAGCACTGATTACCCA,, 8380,AA001432,,20,365,GCACTGATTACCCAATGCAC,, 8381,AA001432,,20,359,ATTACCCAATGCACCTCCCT,,

8382,AA001432,,20,353,CAATGCACCTCCCTCCCGG,, 8383,AA001432,,20,347,ACCTCCCTCCCGGCTCGAG,, 8384,AA001432,,20,341,CTCCCCGGCTCGAGATCATT,, 8385,AA001432,,20,335,GGCTCGAGATCATTCTTCAC,, 8386,AA001432,,20,329,AGATCATTCTTCACTCAGGA,, 8387,AA001432,,20,323,TTCTTCACTCAGGACACAAA,, 8388,AA001432,,20,317,ACTCAGGACACAAACCAGAC,, 8389,AA001432,,20,311,GACACAAACCAGACAGGTTT,, 8390,AA001432,,20,305,AACCAGACAGGTTTAATAGC,, 10 8391,AA001432,,20,299,ACAGGTTTAATAGCGAATCT,, 8392, AA001432,, 20, 293, TTAATAGCGAATCTAATTTT,, 8393,AA001432,,20,287,GCGAATCTAATTTTGAATTC,, 8394,AA001432,,20,281,CTAATTTTGAATTCTGACCA,, 8395,AA001432,,20,275,TTGAATTCTGACCATGGATA,, 8396,AA001432,,20,269,TCTGACCATGGATACCCATC,, 8397, AA001432, 20, 263, CATGGATACCCATCACTTTG, 8398,AA001432,,20,257,TACCCATCACTTTGGCATTC,, 8399,AA001432,,20,251,TCACTTTGGCATTCAGTGCT,, 8400,AA001432,,20,245,TGGCATTCAGTGCTACATGT,, 8401,AA001432,,20,239,TCAGTGCTACATGTGTATTT,, 8402,AA001432,,20,233,CTACATGTGTATTTTATATA,, 8403,AA001432,,20,227,GTGTATTTTATATAAAAATC,, 8404,AA001432,,20,221,TTTATATAAAAATCCCATTT,, 8405,AA001432,,20,215,TAAAAATCCCATTTCTTGAA,, 25 8406,AA001432,,20,209,TCCCATTTCTTGAAGATAAA,, 8407,AA001432,,20,203,TTCTTGAAGATAAAAAAATT,, 8408,AA001432,,20,197,AAGATAAAAAAATTGTTATT,, 8409,AA001432,,20,191,AAAAAATTGTTATTCAAATT,, 8410,AA001432,,20,185,TTGTTATTCAAATTGTTATG, 30 8411,AA001432,,20,179,TTCAAATTGTTATGCACAGA,, 8412,AA001432,,20,173,TTGTTATGCACAGAATGTTT,, 8413,AA001432,,20,167,TGCACAGAATGTTTTTGGTA,, 8414,AA001432,,20,161,GAATGTTTTTGGTAATATTA,, 8415,AA001432,,20,155,TTTTGGTAATATTAATTTCC,, 35 8416,AA001432,,20,149,TAATATTAATTTCCACTAAA,, 8417, AA001432, 20, 143, TAATTTCCACTAAAAAATTA, 8418,AA001432,,20,137,CCACTAAAAAATTAAATGTC,, 8419,AA001432,,20,131,AAAAATTAAATGTCTTTTAA,, 8420,AA001432,,20,125,TAAATGTCTTTTAAGAAACA,, 40 8421,AA001432,,20,119,TCTTTTAAGAAACATTCTTT,, 8422,AA001432,,20,113,AAGAAACATTCTTTTCCACT,, 8423,AA001432,,20,107,CATTCTTTTCCACTTGTTAA,, 8424,AA001432,,20,101,TTTCCACTTGTTAAAAAAAT,, 8425,AA001432,,20,95,CTTGTTAAAAAAATTAAATA,, 45 8426,AA001432,,20,89,AAAAAAATTAAATATTTT,, 8427,AA001432,,20,83,ATTAAATATATTTTAAAGCA,, 8428,AA001432,,20,77,TATATTTTAAAGCACTTTAA,, 8429,AA001432,,20,71,TTAAAGCACTTTAAGAATAT,, 8430,AA001432,,20,65,CACTTTAAGAATATGAAACT,, 50 8431,AA001432,,20,59,AAGAATATGAAACTTTCATA,, 8432,AA001432,,20,53,ATGAAACTTTCATATATGTT,, 8433,AA001432,,20,47,CTTTCATATATGTTAAAGGA,, 8434,AA001432,,20,41,TATATGTTAAAGGATTATAA,, 8435,AA001432,,20,35,TTAAAGGATTATAATTTATG,, 55 8436,AA001432,,20,29,GATTATAATTTATGGAATTA,, 8437,AA001432,,20,23,AATTTATGGAATTAAAAAAT,, 8438,AA001432,,20,17,TGGAATTAAAAAATGCAGTG,, 8439,AA001432,,20,11,TAAAAAATGCAGTGTAGTCC,, 8440,AA001432,,20,5,ATGCAGTGTAGTCCTTAAAA,, 60 (GENBANK ACCESSION NO. H87536) AGAAAAAAAACTTCTTTAATGGGAAATTTTACGNTTGAAATGATGTTTCATCTTATNGNCCACAAACAAATGTTTTTNGACATTGA AAAGNGGNTAAAGACCAACTGCGCCCAGTCCCCCAAGNGCCATTTTCTGNGTGCAGAATG0NGGGNGACGTCTTGAGCTGATGCTG GGCCTGGGGTCAGTATAACANATCCATGAACTCTAGNATGGGGNCTACGGGCAATCATAGNTACAATCAGGGCT 65 (SEO ID NO: 8441) 8442,H87536,,20,318,AGCCCTGATTGTANCTATGA,, 8443,H87536,,20,312,GATTGTANCTATGATTGCCC,, 8444,H87536,,20,306,ANCTATGATTGCCCGTAGNC,, 8445,H87536,,20,300,GATTGCCCGTAGNCCCCATN,, 8446,H87536,,20,294,CCGTAGNCCCCATNCTAGAG,, 70 8447,H87536,,20,288,NCCCCATNCTAGAGTTCATG,, 8448,H87536,,20,282,TNCTAGAGTTCATGGATNTG,, 8449,H87536,,20,276,AGTTCATGGATNTGTTATAC,, 8450,H87536,,20,270,TGGATNTGTTATACTGACCC,,

8451,H87536,,20,264,TGTTATACTGACCCCAGGCC,, 8452,H87536,,20,258,ACTGACCCCAGGCCAGAGCA,, 8453,H87536,,20,252,CCCAGGCCAGAGCAAACAGA,, 8454,H87536,,20,246,CCAGAGCAAACAGAAAAAGA,, 8455,H87536,,20,240,CAAACAGAAAAAGAAGGTTG,, 8456,H87536,,20,234,GAAAAAGAAGGTTGAGGGCA,, 8457,H87536,,20,228,GAAGGTTGAGGGCAATGGAC,, 8458,H87536,,20,222,TGAGGGCAATGGACAAGGAA,, 8459,H87536,,20,216,CAATGGACAAGGAAGGAATA,, 10 8460,H87536,,20,210,ACAAGGAAGGAATAAAGGGA,, 8461,H87536,,20,204,AAGGAATAAAGGGAGAAGAG,, 8462,H87536,,20,198,TAAAGGGAGAAGAGGGAAAA,, 8463,H87536,,20,192,GAGAAGAGGGAAAACAGAAA,, 8464,H87536,,20,186,AGGGAAAACAGAAAACCCTG,, 15 8465,H87536,,20,180,AACAGAAAACCCTGATGCTG,, 8466,H87536,,20,174,AAACCCTGATGCTGGGGACA., 8467,H87536,,20,168,TGATGCTGGGGACACAGCAT,, 8468,H87536,,20,162,TGGGGACACAGCATCAGCTC,, 8469,H87536,,20,156,CACAGCATCAGCTCAAGACG,, 20 8470,H87536,,20,150,ATCAGCTCAAGACGTCNCCC,, 8471,H87536,,20,144,TCAAGACGTCNCCCNCCATT,, 8472,H87536,,20,138,CGTCNCCCNCCATTCTGCAC,, 8473,H87536,,20,132,CCNCCATTCTGCACNCAGAA,, 8474,H87536,,20,126,TTCTGCACNCAGAAAATGGC,, 8475,H87536,,20,120,ACNCAGAAAATGGCNCTTGG,, 25 8476,H87536,,20,114,AAAATGGCNCTTGGGGGACT,, 8477,H87536,,20,108,GCNCTTGGGGGACTGGGCGC,, 8478,H87536,,20,102,GGGGGACTGGGCGCAGTTGG,, 8479,H87536,,20,96,CTGGGCGCAGTTGGTCTTTA,, 30 8480,H87536,,20,90,GCAGTTGGTCTTTANCCNCT,, 8481,H87536,,20,84,GGTCTTTANCCNCTTTTCAA,, 8482,H87536,,20,78,TANCCNCTTTTCAATGTCNA... 8483,H87536,,20,72,CTTTTCAATGTCNAAAAACA,, 8484,H87536,,20,66,AATGTCNAAAAACATTTGTT,, 35 8485,H87536,,20,60,NAAAAACATTTGTTTGTGGN,, 8486,H87536,,20,54,CATTTGTTTGTGGNCNATAA,, 8487,H87536,,20,48,TTTGTGGNCNATAAGATGAA,, 8488,H87536,,20,42,GNCNATAAGATGAAACATCA,, 8489,H87536,,20,36,AAGATGAAACATCATTTCAA,, 40 8490,H87536,,20,30,AAACATCATTTCAANCGTAA,, 8491,H87536,,20,24,CATTTCAANCGTAAAATTTC,, 8492,H87536,,20,18,AANCGTAAAATTTCCCATTA,, 8493,H87536,,20,12,AAAATTTCCCATTAAAGAAG,, 8494,H87536,,20,6,TCCCATTAAAGAAGTTTTTT,, 45 (GENBANK ACCESSION NO. AA664179) CCAATGAACTCTGAACTTTTTATTGGCCTCCTGCTCCCCAAAGGGTACCCTGCTTCTGCTGGCTTAATGCCTCAGAACTTTTGGTGTCA TTGGTCTCAGACACCACTTTGCCATCACTATCCGGCGGGTGGTGGTCTTTTGGATGGTTTTGCATGGAGTTGCTGCTGTCCAAGGCAT CACCAAGATTAAAGTCCTCGCCATCTTCCAGCAGGCGGCGGTAGGTGGCGATCTCAGCCTCCAGCTTGACCTTGATGTTCAGCAGGG CCTCATACTCCTGGGCCTGGCGCTGTCCCTCTGCCCGGGTCTGTGCCAGCTCTGACTCAAGGTGCAGCAGGATCCCGTTGAGCTGCT 50 AGGACTGGACTGTACGTCTCAGCGTCTGTGAGCGTCGTCTCAGCAGCTCAACCTCAGCAGACTGTGGTGACACTGTGGTGCTCTCC TCATCTGCTGAGACCAGTACTTGTCTAGCTCCTCTCGGGTCTTCCGGAGCAGCTCGTCATATTGGCCCAGATGNCTGCAATGATCTG GNCGAGGTCTGANGATTTGNGGCATCTACACTCAGGTCAACC (SEQ ID NO: 8495) 55 8496,AA664179,,20,635,GGTTGACCTGAGTGTAGATG,, 8497,AA664179,,20,629,CCTGAGTGTAGATGCCNCAA,, 8498, AA664179, 20,623, TGTAGATGCCNCAAATCNTC, 8499,AA664179,,20,617,TGCCNCAAATCNTCAGACCT,, 60 8500,AA664179,,20,611,AAATCNTCAGACCTCGNCCA,, 8501, AA664179, 20, 605, TCAGACCTCGNCCAGATCAT, 8502,AA664179,,20,599,CTCGNCCAGATCATTGCAGN,, 8503,AA664179,,20,593,CAGATCATTGCAGNCATCTG,, 8504,AA664179,,20,587,ATTGCAGNCATCTGGGCCAA,, 65 8505,AA664179,,20,581,GNCATCTGGGCCAATATGAC,, 8506,AA664179,,20,575,TGGGCCAATATGACGAGCTG,, 8507,AA664179,,20,569,AATATGACGAGCTGCTCCGG,, 8508,AA664179,,20,563,ACGAGCTGCTCCGGAAGACC,, 8509,AA664179,,20,557,TGCTCCGGAAGACCCGAGAG,, 70 8510,AA664179,,20,551,GGAAGACCCGAGAGGAGCTA,, 8511,AA664179,,20,545,CCCGAGAGGAGCTAGACAAG,,

8512,AA664179,20,539,AGGAGCTAGACAAGTACTGG,, 8513,AA664179,20,533,TAGACAAGTACTGGTCTCAG, 8514,AA664179,,20,527,AGTACTGGTCTCAGCAGATG,, 8515,AA664179,,20,521,GGTCTCAGCAGATGAGGAGA.

8516,AA664179,,20,515,AGCAGATGAGGAGAGCACCA,, 8517,AA664179,,20,509,TGAGGAGAGCACCACAGTGT,, 8518,AA664179,,20,503,GAGCACCACAGTGTCACCAC,, 8519,AA664179,,20,497,CACAGTGTCACCACACAGTC,, 8520,AA664179,,20,491,GTCACCACACAGTCTGCTGA,, 8521,AA664179,,20,485,ACACAGTCTGCTGAGGTTGA,, 8522, AA664179, 20,479, TCTGCTGAGGTTGAGCTGCT, 8523,AA664179,,20,473,GAGGTTGAGCTGCTGAGACG,, 8524,AA664179,,20,467,GAGCTGCTGAGACGACGCTC,, 10 8525,AA664179,,20,461,CTGAGACGACGCTCACAGAG,, 8526,AA664179,,20,455,CGACGCTCACAGAGCTGAGA,, 8527,AA664179,,20,449,TCACAGAGCTGAGACGTACA,, 8528,AA664179,,20,443,AGCTGAGACGTACAGTCCAG,, 8529,AA664179,,20,437,GACGTACAGTCCAGTCCTGG,, 15 8530,AA664179,,20,431,CAGTCCAGTCCTGGAGATCG,, 8531,AA664179,,20,425,AGTCCTGGAGATCGACCTGG, 8532,AA664179,,20,419,GGAGATCGACCTGGACTCCA,, 8533,AA664179,,20,413,CGACCTGGACTCCATGAGAA,, 8534,AA664179,,20,407,GGACTCCATGAGAAATCTGA,, 20 8535,AA664179,,20,401,CATGAGAAATCTGAAGGCCA,, 8536,AA664179,,20,395,AAATCTGAAGGCCAGCTTGG,, 8537,AA664179,,20,389,GAAGGCCAGCTTGGAGAACA,, 8538,AA664179,,20,383,CAGCTTGGAGAACAGCCTGA,, 8539,AA664179,,20,377,GGAGAACAGCCTGAGGGAGG,, 25 8540,AA664179,,20,371,CAGCCTGAGGGAGGTGGAGG,, 8541,AA664179,,20,365,GAGGGAGGTGGAGGCCCGTA,, 8542,AA664179,,20,359,GGTGGAGGCCCGTACGCCCT,, 8543,AA664179,,20,353,GGCCCGTACGCCCTACAGAT,, 8544,AA664179,,20,347,TACGCCCTACAGATGGAGCA,, 30 8545, AA664179, 20,341, CTACAGATGGAGCAGCTCAA, 8546,AA664179,,20,335,ATGGAGCAGCTCAACGGGAT,, 8547,AA664179,,20,329,CAGCTCAACGGGATCCTGCT,, 8548,AA664179,,20,323,AACGGGATCCTGCTGCACCT,, 8549,AA664179,,20,317,ATCCTGCTGCACCTTGAGTC,, 35 8550,AA664179,,20,311,CTGCACCTTGAGTCAGAGCT,, 8551,AA664179,,20,305,CTTGAGTCAGAGCTGGCACA,, 8552,AA664179,,20,299,TCAGAGCTGGCACAGACCCG,, 8553,AA664179,,20,293,CTGGCACAGACCCGGGCAGA,, 8554,AA664179,,20,287,CAGACCCGGGCAGAGGGACA,, 40 8555,AA664179,,20,281,CGGGCAGAGGGACAGCGCCA,, 8556,AA664179,,20,275,GAGGGACAGCGCCAGGCCCA,, 8557,AA664179,,20,269,CAGCGCCAGGCCCAGGAGTA,, 8558,AA664179,,20,263,CAGGCCCAGGAGTATGAGGC,, 8559,AA664179,,20,257,CAGGAGTATGAGGCCCTGCT,, 45 8560,AA664179,,20,251,TATGAGGCCCTGCTGAACAT,, 8561,AA664179,,20,245,GCCCTGCTGAACATCAAGGT,, 8562,AA664179,,20,239,CTGAACATCAAGGTCAAGCT,, 8563,AA664179,,20,233,ATCAAGGTCAAGCTGGAGGC,, 8564,AA664179,,20,227,GTCAAGCTGGAGGCTGAGAT,, 50 8565,AA664179,,20,221,CTGGAGGCTGAGATCGCCAC,, 8566,AA664179,,20,215,GCTGAGATCGCCACCTACCG,, 8567,AA664179,,20,209,ATCGCCACCTACCGCCGCCT,, 8568,AA664179,,20,203,ACCTACCGCCGCCTGCTGGA,, 8569,AA664179,,20,197,CGCCGCCTGCTGGAAGATGG,, 55 8570,AA664179,,20,191,CTGCTGGAAGATGGCGAGGA,, 8571,AA664179,,20,185,GAAGATGGCGAGGACTTTAA,, 8572,AA664179,,20,179,GGCGAGGACTTTAATCTTGG,, 8573,AA664179,,20,173,GACTTTAATCTTGGTGATGC,, 8574,AA664179,,20,167,AATCTTGGTGATGCCTTGGA,, 60 8575,AA664179,,20,161,GGTGATGCCTTGGACAGCAG,, 8576,AA664179,,20,155,GCCTTGGACAGCAGCAACTC,, 8577,AA664179,,20,149,GACAGCAGCAACTCCATGCA, 8578,AA664179,,20,143,AGCAACTCCATGCAAACCAT,, 8579,AA664179,,20,137,TCCATGCAAACCATCCAAAA,, 8580,AA664179,,20,131,CAAACCATCCAAAAGACCAC,, 65 8581,AA664179,,20,125,ATCCAAAAGACCACCACCCG,, 8582,AA664179,,20,119,AAGACCACCACCGCCGGAT,, 8583,AA664179,,20,113,ACCACCCGCCGGATAGTGGA,, 8584,AA664179,,20,107,CGCCGGATAGTGGATGGCAA,, 70 8585,AA664179,,20,101,ATAGTGGATGGCAAAGTGGT,, 8586,AA664179,,20,95,GATGGCAAAGTGGTGTCTGA,, 8587,AA664179,,20,89,AAAGTGGTGTCTGAGACCAA,, 8588,AA664179,,20,83,GTGTCTGAGACCAATGACAC,, 8589,AA664179,,20,77,GAGACCAATGACACCAAAGT,, 75 8590,AA664179,,20,71,AATGACACCAAAGTTCTGAG,,

8591,AA664179,,20,65,ACCAAAGTTCTGAGGCATTA,, 8592,AA664179,,20,59,GTTCTGAGGCATTAAGCCAG,, 8593,AA664179,,20,53,AGGCATTAAGCCAGCAGAAG,, 8594,AA664179,,20,47,TAAGCCAGCAGAAGCAGGGT,, 8595,AA664179,,20,41,AGCAGAAGCAGGGTACCCTT,, 8596,AA664179,,20,35,AGCAGGGTACCCTTTGGGGA,, 8597,AA664179,,20,29,GTACCCTTTGGGGAGCAGGA,, 8598,AA664179,,20,23,TTTGGGGAGCAGGAGGCCAA,, 8599,AA664179,,20,17,GAGCAGGAGGCCAATAAAAA,, 10 8600,AA664179,,20,11,GAGGCCAATAAAAAGTTCAG,, 8601,AA664179,,20,5,AATAAAAAGTTCAGAGTTCA,, (GENBANK ACCESSION NO. H86812) ACGCTTGGGCTGGTACCTCAGCCAGATGCCCTTCTCCTGGCCACACCAGCTCACAGTGGAGAAGACCCCCGCGTATTTCACGTCGC CCAAAGTGCCTGAGCGAGTCTACAGCATGAACCCGTCCATCCGGCTGCTCATCCTGCGAGACCCGTCGGAGCGCGTGCTATCTG 15 ACTACACCCAAGTGTTCTACAACCACATGCAGAAGCACAAGCCCTACCCGTCCATCGAGGAGTTCCTGGGTGCGNGATGGCAGGCT CAATGTGGACTACAAGGCCCTCAACCGCAGCCTNTTACCACGTGCAACATGCAGAACTG (SEQ ID NO: 8602) 8603,H86812,,20,300,CAGTTCTGCATGTTGCACGT,, 20 8604,H86812,,20,294,TGCATGTTGCACGTGGTAAN,, 8605,H86812,,20,288,TTGCACGTGGTAANAGGCTG,, 8606,H86812,,20,282,GTGGTAANAGGCTGCGGTTG,, 8607,H86812,,20,276,ANAGGCTGCGGTTGAGGGCC,, 8608,H86812,,20,270,TGCGGTTGAGGGCCTTGTAG,, 25 8609,H86812,,20,264,TGAGGGCCTTGTAGTCCACA,, 8610,H86812,,20,258,CCTTGTAGTCCACATTGAGC,, 8611,H86812,,20,252,AGTCCACATTGAGCCTGCCA,, 8612,H86812,,20,246,CATTGAGCCTGCCATCNCGC,, 8613,H86812,,20,240,GCCTGCCATCNCGCACCCAG,, 30 8614,H86812,,20,234,CATCNCGCACCCAGGAACTC,, 8615,H86812,,20,228,GCACCCAGGAACTCCTCGAT,, 8616,H86812,,20,222,AGGAACTCCTCGATGGACGG,, 8617,H86812,,20,216,TCCTCGATGGACGGGTAGGG,, 8618,H86812,,20,210,ATGGACGGGTAGGGCTTGTG,, 35 8619,H86812,,20,204,GGGTAGGGCTTGTGCTTCTG,, 8620,H86812,,20,198,GGCTTGTGCTTCTGCATGTG,, 8621,H86812,,20,192,TGCTTCTGCATGTGGTTGTA,, 8622,H86812,,20,186,TGCATGTGGTTGTAGAACAC,, 8623,H86812,,20,180,TGGTTGTAGAACACTTGGGT,, 40 8624,H86812,,20,174,TAGAACACTTGGGTGTAGTC,, 8625,H86812,,20,168,ACTTGGGTGTAGTCAGATAG,, 8626,H86812,,20,162,GTGTAGTCAGATAGCACGCG,, 8627,H86812,,20,156,TCAGATAGCACGCGCTCCGA,, 8628,H86812,,20,150,AGCACGCGCTCCGACGGGTC,, 45 8629,H86812,,20,144,CGCTCCGACGGGTCTCGCAG,, 8630,H86812,,20,138,GACGGGTCTCGCAGGATGAG,, 8631,H86812,,20,132,TCTCGCAGGATGAGCAGCAG, 8632,H86812,,20,126,AGGATGAGCAGCAGCCGGAT,, 8633,H86812,,20,120,AGCAGCAGCCGGATGGACGG, 50 8634,H86812,,20,114,AGCCGGATGGACGGGTTCAT,, 8635,H86812,,20,108,ATGGACGGGTTCATGCTGTA,, 8636,H86812,,20,102,GGGTTCATGCTGTAGACTCG,, 8637,H86812,,20,96,ATGCTGTAGACTCGCTCAGG,, 8638,H86812,,20,90,TAGACTCGCTCAGGCACTTT,, 8639,H86812,,20,84,CGCTCAGGCACTTTGGGCGA,, 55 8640,H86812,,20,78,GGCACTTTGGGCGACGTGAA,, 8641,H86812,,20,72,TTGGGCGACGTGAAATACGC,, 8642,H86812,,20,66,GACGTGAAATACGCGGGGGT,, 8643,H86812,,20,60,AAATACGCGGGGGTCTTCTC,, 60 8644,H86812,,20,54,GCGGGGGTCTTCTCCACTGT,, 8645,H86812,,20,48,GTCTTCTCCACTGTGAGCTG,, 8646,H86812,,20,42,TCCACTGTGAGCTGGTGTGG,, 8647,H86812,,20,36,GTGAGCTGGTGTGGCCAGGA,, 8648,H86812,,20,30,TGGTGTGGCCAGGAGAAGGG, 65 8649,H86812,,20,24,GGCCAGGAGAAGGGCATCTG,, 8650,H86812,,20,18,GAGAAGGGCATCTGGCTGAG,, 8651,H86812,,20,12,GGCATCTGGCTGAGGTACCA,, 8652,H86812,,20,6,TGGCTGAGGTACCAGCCCAA,, (GENBANK ACCESSION NO. AA626698) 70 TTTTTTTGGTTTTATACAGAACCTTTAATTGCAAACAACTTGGAAGCAGCCATCCCGGGGGTGGCAGGGGAGAACCCACCACACCCT CCCCTCAGTATTCTTCGCCTTCTTCAGCCTCAGCTTCCACGGAATCCACGCCCACCTCTTCATAATCCTTCTCAGAGCTGCCAGGTC CTCGCGGGCCTCAGAGAACTCTCCCTCTTCCATGCCTTCGCCCACGTACCAGTGCACAAAGGCCCGCTTGGCATACATGAGATCGAA CTTATGGTCCAGGCGGGCCCAGGCCTCCGCAATGGCCGTGTGTTGCTCAGCATGCACACGGCCCGCTGCACCTTGGCCAGGTCTCC

CCCGGGGACCACTGTGGGGGGCTGGTAGTTAATGCCCACCTTAAATCCAGTCGGGCACCAATCCACAAACTGGATAGTGCGCTTGG

8654,AA626698,,20,671,GAATTTCCGGACCCAACCTT,, 8655,AA626698,,20,665,CCGGACCCAACCTTCGTTCC,, 8656,AA626698,,20,659,CCAACCTTCGTTCCGTTACC,, 8657,AA626698,,20,653,TTCGTTCCGTTACCCCGGAA., 8658,AA626698,,20,647,CCGTTACCCCGGAATCCAAT,, 8659, AA626698,, 20,641, CCCCGGAATCCAATTTCCCC,, 8660,AA626698,,20,635,AATCCAATTTCCCCATGGCA,, 8661,AA626698,,20,629,ATTTCCCCATGGCACACTTA,, 8662,AA626698,,20,623,CCATGGCACACTTACGCCCC,, 8663,AA626698,,20,617,CACACTTACGCCCCAATCAT,, 15 8664,AA626698,,20,611,TACGCCCCAATCATCTCAGC,, 8665,AA626698,,20,605,CCAATCATCTCAGCTTAGAA,, 8666,AA626698,,20,599,ATCTCAGCTTAGAAGGCTTA,, 8667,AA626698,,20,593,GCTTAGAAGGCTTACCACGA,, 8668,AA626698,,20,587,AAGGCTTACCACGAGCAGCT,, 8669,AA626698,,20,581,TACCACGAGCAGCTTTCTTT,, 8670,AA626698,,20,575,GAGCAGCTTTCTTTGGCCGA,, 8671,AA626698,,20,569,CTTTCTTTGGCCGAGATCAC,, 8672,AA626698,,20,563,TTGGCCGAGATCACCAATGC,, 8673,AA626698,,20,557,GAGATCACCAATGCCTGCTT,, 8674,AA626698,,20,551,ACCAATGCCTGCTTCGAGCC,, 25 8675,AA626698,,20,545,GCCTGCTTCGAGCCAGCCAA,, 8676,AA626698,,20,539,TTCGAGCCAGCCAATCAGAT,, 8677,AA626698,,20,533,CCAGCCAATCAGATGGTCAA,, 8678,AA626698,,20,527,AATCAGATGGTCAAGTGTGA,, 30 8679,AA626698,,20,521,ATGGTCAAGTGTGACCCTCG,, 8680,AA626698,,20,515,AAGTGTGACCCTCGCCACGG,, 8681,AA626698,,20,509,GACCCTCGCCACGGCAAGTA,, 8682,AA626698,,20,503,CGCCACGGCAAGTACATGGC,, 8683,AA626698,,20,497,GGCAAGTACATGGCCTGCTG,, 35 8684,AA626698,,20,491,TACATGGCCTGCTGCATGTT,, 8685,AA626698,,20,485,GCCTGCTGCATGTTGTACCA,, 8686,AA626698,,20,479,TGCATGTTGTACCAGGGGGA,, 8687,AA626698,,20,473,TTGTACCAGGGGGACGTGGT,, 8688,AA626698,,20,467,CAGGGGGACGTGGTCCCCAA,, 40 8689,AA626698,,20,461,GACGTGGTCCCCAAAGACGT,, 8690,AA626698,,20,455,GTCCCCAAAGACGTCAACGC,, 8691,AA626698,,20,449,AAAGACGTCAACGCGCCATC,, 8692,AA626698,,20,443,GTCAACGCGCCATCGCCACC,, 8693,AA626698,,20,437,GCGCCATCGCCACCATCAAG,, 8694,AA626698,,20,431,TCGCCACCATCAAGACCAAG,, 8695,AA626698,,20,425,CCATCAAGACCAAGCGCACT,, 8696,AA626698,,20,419,AGACCAAGCGCACTATCCAG,, 8697,AA626698,,20,413,AGCGCACTATCCAGTTTGTG,, 8698, AA626698, 20,407, CTATCCAGTTTGTGGATTGG, 50 8699,AA626698,,20,401,AGTTTGTGGATTGGTGCCCG,, 8700,AA626698,,20,395,TGGATTGGTGCCCGACTGGA,, 8701,AA626698,,20,389,GGTGCCCGACTGGATTTAAG,, 8702,AA626698,,20,383,CGACTGGATTTAAGGTGGGC,, 8703,AA626698,,20,377,GATTTAAGGTGGGCATTAAC,, 55 8704,AA626698,,20,371,AGGTGGGCATTAACTACCAG,, 8705,AA626698,,20,365,GCATTAACTACCAGCCCCCC,, 8706,AA626698,,20,359,ACTACCAGCCCCCACAGTG,, 8707,AA626698,,20,353,AGCCCCCACAGTGGTCCCC,, 8708, AA626698,, 20,347, CCACAGTGGTCCCCGGGGGA,, 60 8709,AA626698,,20,341,TGGTCCCCGGGGGAGACCTG,, 8710,AA626698,,20,335,CCGGGGGAGACCTGGCCAAG,, 8711,AA626698,,20,329,GAGACCTGGCCAAGGTGCAG,, 8712,AA626698,,20,323,TGGCCAAGGTGCAGCGGGCC,, 8713,AA626698,,20,317,AGGTGCAGCGGGCCGTGTGC,, 8714,AA626698,,20,311,AGCGGGCCGTGTGCATGCTG,, 8715,AA626698,,20,305,CCGTGTGCATGCTGAGCAAC,, 8716,AA626698,,20,299,GCATGCTGAGCAACACCACG,, 8717,AA626698,,20,293,TGAGCAACACCACGGCCATT,, 8718,AA626698,,20,287,ACACCACGGCCATTGCGGAG,, 8719,AA626698,,20,281,CGGCCATTGCGGAGGCCTGG, 8720,AA626698,,20,275,TTGCGGAGGCCTGGGCCCGC,, 8721,AA626698,,20,269,AGGCCTGGGCCCGCCTGGAC,, 8722,AA626698,,20,263,GGGCCCGCCTGGACCATAAG,, 8723,AA626698,,20,257,GCCTGGACCATAAGTTCGAT,, 75 8724,AA626698,,20,251,ACCATAAGTTCGATCTCATG,,

8725,AA626698,,20,245,AGTTCGATCTCATGTATGCC., 8726,AA626698,,20,239,ATCTCATGTATGCCAAGCGG,, 8727,AA626698,,20,233,TGTATGCCAAGCGGGCCTTT, 8728,AA626698,,20,227,CCAAGCGGGCCTTTGTGCAC,, 8729,AA626698,,20,221,GGGCCTTTGTGCACTGGTAC,, 8730,AA626698,,20,215,TTGTGCACTGGTACGTGGGC, 8731,AA626698,,20,209,ACTGGTACGTGGGCGAAGGC,, 8732,AA626698,,20,203,ACGTGGGCGAAGGCATGGAA,, 8733,AA626698,,20,197,GCGAAGGCATGGAAGAGGGA,, 10 8734,AA626698,,20,191,GCATGGAAGAGGGAGAGTTC,, 8735,AA626698,,20,185,AAGAGGGAGAGTTCTCTGAG,, 8736,AA626698,,20,179,GAGAGTTCTCTGAGGCCCGC,, 8737,AA626698,,20,173,TCTCTGAGGCCCGCGAGGAC,, 8738,AA626698,,20,167,AGGCCCGCGAGGACCTGGCA,, 15 8739,AA626698,,20,161,GCGAGGACCTGGCAGCTCTA,, 8740,AA626698,,20,155,ACCTGGCAGCTCTAGAGAAG,, 8741,AA626698,,20,149,CAGCTCTAGAGAAGGATTAT,, 8742,AA626698,,20,143,TAGAGAAGGATTATGAAGAG,, 8743,AA626698,,20,137,AGGATTATGAAGAGGTGGGC,, 20 8744,AA626698,,20,131,ATGAAGAGGTGGGCGTGGAT,, 8745,AA626698,,20,125,AGGTGGGCGTGGATTCCGTG,, 8746,AA626698,,20,119,GCGTGGATTCCGTGGAAGCT,, 8747,AA626698,,20,113,ATTCCGTGGAAGCTGAGGCT,, 8748,AA626698,,20,107,TGGAAGCTGAGGCTGAAGAA,, 8749,AA626698,,20,101,CTGAGGCTGAAGAAGGCGAA,, 25 8750,AA626698,,20,95,CTGAAGAAGGCGAAGAATAC,, 8751,AA626698,,20,89,AAGGCGAAGAATACTGAGGG,, 8752,AA626698,,20,83,AAGAATACTGAGGGGAGGGT,, 8753,AA626698,,20,77,ACTGAGGGGAGGGTGTGGTG,, 30 8754,AA626698,,20,71,GGGAGGGTGTGGTGGGTTCT,, 8755,AA626698,,20,65,GTGTGGTGGGTTCTCCCCTG,, 8756,AA626698,20,59,TGGGTTCTCCCCTGCCACCC, 8757,AA626698,,20,53,CTCCCCTGCCACCCCGGGA,, 8758,AA626698,,20,47,TGCCACCCCGGGATGGCTG, 35 8759,AA626698,,20,41,CCCCGGGATGGCTGCTTCCA,, 8760,AA626698,,20,35,GATGGCTGCTTCCAAGTTGT,, 8761,AA626698,,20,29,TGCTTCCAAGTTGTTTGCAA,, 8762,AA626698,,20,23,CAAGTTGTTTGCAATTAAAG,, 8763,AA626698,,20,17,GTTTGCAATTAAAGGTTCTG,, 40 8764,AA626698,,20,11,AATTAAAGGTTCTGTATAAA,, 8765,AA626698,20,5,AGGTTCTGTATAAAACCAAA,, (GENBANK ACCESSION NO. R37953) TTTTTTTTCCNTTTAAAGTCATCTCTATAGGAAGGTNCTGGGAGGGATCCCAGAGAAAGAAAGGGCCAAGACTCCATTAACTGCCC TGGATGAAGGGACTGCTACAANAGCTAGTACCAGAGACTCTCCTATCTCACGGTTGAGGCAGACCCAGGNTAGAATAGAGAATAAA AGGAATGCTTATAGGAAACAATTTTGTATGGAATGCTAGATGGCCAAGCTCAGCCTTTNGTCCAGTGCAACCCTTGCCTCGCTTGTC ACCAGTGTGAACATTCTGATCTGTTAATTCAGGGGACTNTTTTCTTTCCAATGGACTTTTTTGTTGGGAG (SEQ ID NO: 8766) 50 8767,R37953,,20,398,CTCCCAACAAAAAAGTCCAT,, 8768,R37953,,20,392,ACAAAAAAGTCCATTGGAAA,, 8769,R37953,,20,386,AAGTCCATTGGAAAGAAAN,, 8770,R37953,,20,380,ATTGGAAAGAAAANAGTCCC,, 8771,R37953,,20,374,AAGAAAANAGTCCCCTGAAT,, 55 8772,R37953,,20,368,ANAGTCCCCTGAATTAACAG,, 8773,R37953,,20,362,CCCTGAATTAACAGATCAGA,, 8774,R37953,,20,356,ATTAACAGATCAGAATGTTC,, 8775,R37953,,20,350,AGATCAGAATGTTCACACTG,, 8776,R37953,,20,344,GAATGTTCACACTGGTTAAT,, 60 8777,R37953,,20,338,TCACACTGGTTAATCTTTTT,, 8778,R37953,,20,332,TGGTTAATCTTTTTTAACA,, 8779,R37953,,20,326,ATCTTTTTTAACAATGAGC,, 8780,R37953,,20,320,TTTTAACAATGAGCATGAAG,, 8781,R37953,,20,314,CAATGAGCATGAAGGTAGCA,, 65 8782,R37953,,20,308,GCATGAAGGTAGCAGAAGCT,, 8783,R37953,,20,302,AGGTAGCAGAAGCTGGTGTG,, 8784,R37953,,20,296,CAGAAGCTGGTGTGTTTCCA,, 8785,R37953,,20,290,CTGGTGTGTTTCCAGATGGT, 8786,R37953,,20,284,TGTTTCCAGATGGTTCTTCT,, 8787,R37953,,20,278,CAGATGGTTCTTCTAACNAA,, 8788,R37953,,20,272,GTTCTTCTAACNAAACTAAT,,

8789,R37953,,20,266,CTAACNAAACTAATTTTTCA,, 8790,R37953,,20,260,AAACTAATTTTTCACTGTTG,, 8791,R37953,,20,254,ATTTTTCACTGTTGACAAGC,,

8792,R37953,,20,248,CACTGTTGACAAGCGAGGCA..

8793,R37953,,20,242,TGACAAGCGAGGCAAGGGTT,, 8794,R37953,,20,236,GCGAGGCAAGGGTTGCACTG... 8795,R37953,,20,230,CAAGGGTTGCACTGGACNAA,, 8796,R37953,,20,224,TTGCACTGGACNAAAGGCTG,, 8797,R37953,,20,218,TGGACNAAAGGCTGAGCTTG,, 8798,R37953,,20,212,AAAGGCTGAGCTTGGCCATC,, 8799,R37953,,20,206,TGAGCTTGGCCATCTAGCAT,, 8800,R37953,,20,200,TGGCCATCTAGCATTCCATA,, 8801,R37953,,20,194,TCTAGCATTCCATACAAAAT,, 10 8802,R37953,,20,188,ATTCCATACAAAATTGTTTC,, 8803,R37953,,20,182,TACAAAATTGTTTCCTATAA,, 8804,R37953,,20,176,ATTGTTTCCTATAAGCATTC,, 8805,R37953,,20,170,TCCTATAAGCATTCCTTTTA,, 8806,R37953,,20,164,AAGCATTCCTTTTATTCTCT,, 8807,R37953,,20,158,TCCTTTTATTCTCTATTCTA,, 8808,R37953,,20,152,TATTCTCTATTCTANCCTGG,, 8809,R37953,,20,146,CTATTCTANCCTGGGTCTGC,, 8810,R37953,,20,140,TANCCTGGGTCTGCCTCAAC,, 8811,R37953,,20,134,GGGTCTGCCTCAACCGTGAG,, 20 8812,R37953,,20,128,GCCTCAACCGTGAGATAGGA,, 8813,R37953,,20,122,ACCGTGAGATAGGAGAGTCT,, 8814,R37953,,20,116,AGATAGGAGAGTCTCTGGTA,, 8815,R37953,,20,110,GAGAGTCTCTGGTACTAGCT,, 8816,R37953,,20,104,CTCTGGTACTAGCTNTTGTA,, 25 8817,R37953,,20,98,TACTAGCTNTTGTAGCAGTC,, 8818,R37953,,20,92,CTNTTGTAGCAGTCCCTTCA,, 8819,R37953,,20,86,TAGCAGTCCCTTCATCCAGG,, 8820,R37953,,20,80,TCCCTTCATCCAGGGCAGTT,, 8821,R37953,,20,74,CATCCAGGGCAGTTAATGGA,, 30 8822,R37953,,20,68,GGGCAGTTAATGGAGTCTTG,, 8823,R37953,,20,62,TTAATGGAGTCTTGGCCCTT,, 8824,R37953,,20,56,GAGTCTTGGCCCTTTCTTTC,, 8825,R37953,,20,50,TGGCCCTTTCTTTCTCTGGG,, 8826,R37953,,20,44,TTTCTTTCTCTGGGATCCCT,, 35 8827,R37953,,20,38,TCTCTGGGATCCCTCCCAGN,, 8828,R37953,,20,32,GGATCCCTCCCAGNACCTTC,, 8829,R37953,,20,26,CTCCCAGNACCTTCCTATAG,, 8830,R37953,,20,20,GNACCTTCCTATAGAGATGA,, 8831,R37953,,20,14,TCCTATAGAGATGACTTTAA,, 8832,R37953,,20,8,AGAGATGACTTTAAANGGAA,, 8833,R37953,,20,2,GACTTTAAANGGAAAAAAA,, (GENBANK ACCESSION NO. AA069372) GGACTCTGCACCAAGGGACTGCCCTGTCCAGTGTCGAGAACTTTACTGCTAGGATTTCCAATTGTTAATAACGCTATGTTAGCGCGC $\tt CCTCGCGCCCCATNTTCGCCGCTGCGAATTCTCGGACAAAACTGTCAACAGCCCGGNCGCGCCTTTTNGCTCTNCGGGTCCCNCTA$ CGCNCTGTCCAGGCACTANAGGCTCCCTTGGACCGTTTTGGCAGATGAA (SEQ ID NO: 8834) 50 8835,AA069372,,20,377,TTCATCTGCCAAAACGGTCC,, 8836,AA069372,,20,371,TGCCAAAACGGTCCAAGGGA,, 8837,AA069372,,20,365,AACGGTCCAAGGGAGCCTNT,, 8838,AA069372,,20,359,CCAAGGGAGCCTNTAGTGCC,, 8839,AA069372,,20,353,GAGCCTNTAGTGCCTGGACA,, 55 8840, AA069372, 20,347, NTAGTGCCTGGACAGNGCGG, 8841, AA069372, 20,341, CCTGGACAGNGCGGATTCCC, 8842,AA069372,,20,335,CAGNGCGGATTCCCTTCCCC,, 8843,AA069372,,20,329,GGATTCCCTTCCCCGGCAC,, 8844,AA069372,,20,323,CCTTCCCCCGGCACCCTCTT,, 8845,AA069372,,20,317,CCCGGCACCCTCTTCCTTCC,, 8846,AA069372,,20,311,ACCCTCTTCCTTCCCTACCC,, 8847,AA069372,,20,305,TTCCTTCCCTACCCCAAGGT, 8848,AA069372,,20,299,CCCTACCCCAAGGTCGGGGG,, 8849,AA069372,,20,293,CCCAAGGTCGGGGGTTGGGG,, 8850,AA069372,,20,287,GTCGGGGGGTTGGGGGGCTGT,, 8851,AA069372,,20,281,GGTTGGGGGGCTGTAGCATA,, 8852,AA069372,,20,275,GGGGCTGTAGCATAGGTCGG,, 8853,AA069372,,20,269,GTAGCATAGGTCGGCTTTGC,, 8854,AA069372,,20,263,TAGGTCGGCTTTGCATAAAT,, 8855,AA069372,,20,257,GGCTTTGCATAAATTAGNGG,, 8856,AA069372,,20,251,GCATAAATTAGNGGGACCCG,,

8857,AA069372,,20,245,ATTAGNGGGACCCGNAGAGC,, 8858,AA069372,,20,239,GGGACCCGNAGAGCNAAAAG,, 8859,AA069372,,20,233,CGNAGAGCNAAAAGGCGCGON,,

8860,AA069372,,20,227,GCNAAAAGGCGCGNCCGGGC,,

8861,AA069372,,20,221,AGGCGCGNCCGGGCTGTTGA,, 8862,AA069372,,20,215,GNCCGGGCTGTTGACAGTTT,, 8863,AA069372,,20,209,GCTGTTGACAGTTTTGTCCG,, 8864,AA069372,,20,203,GACAGTTTTGTCCGAGAATT,, 8865,AA069372,,20,197,TTTGTCCGAGAATTCGCAGC,, 8866,AA069372,,20,191,CGAGAATTCGCAGCGGCGAA,, 8867,AA069372,,20,185,TTCGCAGCGGCGAANATGGG,, 8868, AA069372,, 20,179, GCGGCGAANATGGGCGCGCG,, 8869,AA069372,,20,173,AANATGGGCGCGCGAGGTCG,, 10 8870,AA069372,,20,167,GGCGCGCGAGGTCGAGAGGG,, 8871,AA069372,,20,161,CGAGGTCGAGAGGGGCCGCG,, 8872,AA069372,,20,155,CGAGAGGGGCCGCCCTGGA,, 8873,AA069372,,20,149,GGGCCGCCCTGGAGGAGCG,, 8874,AA069372,,20,143,CGCCTGGAGGAGCGAACAAA,, 15 8875,AA069372,,20,137,GAGGAGCGAACAAAACACCG,, 8876,AA069372,,20,131,CGAACAAAACACCGAACCAC,, 8877,AA069372,,20,125,AAACACCGAACCACCTAAGA,, 8878,AA069372,,20,119,CGAACCACCTAAGANGAGAA,, 8879,AA069372,,20,113,ACCTAAGANGAGAAAAGGAG,, 20 8880,AA069372,,20,107,GANGAGAAAAGGAGCCGGGA,, 8881,AA069372,,20,101,AAAAGGAGCCGGGATTCCTA,, 8882,AA069372,,20,95,AGCCGGGATTCCTACCTTCT,, 8883,AA069372,,20,89,GATTCCTACCTTCTTCCTCG,, 8884,AA069372,,20,83,TACCTTCTTCCTCGAGCGCG,, 25 8885,AA069372,,20,77,CTTCCTCGAGCGCGCTAACA,, 8886,AA069372,,20,71,CGAGCGCGCTAACATAGCGT,, 8887,AA069372,,20,65,CGCTAACATAGCGTTATTAA,, 8888,AA069372,,20,59,CATAGCGTTATTAACAATTG,, 8889,AA069372,,20,53,GTTATTAACAATTGGAAATC,, 30 8890,AA069372,,20,47,AACAATTGGAAATCCTAGCA,, 8891,AA069372,,20,41,TGGAAATCCTAGCAGTAAAG,, 8892,AA069372,,20,35,TCCTAGCAGTAAAGTTCTCG,, 8893,AA069372,,20,29,CAGTAAAGTTCTCGACACTG,, 8894,AA069372,,20,23,AGTTCTCGACACTGGACAGG,, 35 8895,AA069372,,20,17,CGACACTGGACAGGGCAGTC,, 8896,AA069372,,20,11,TGGACAGGGCAGTCCCTTGG,, 8897,AA069372,,20,5,GGGCAGTCCCTTGGTGCAGA,, (GENBANK ACCESSION NO. T74688) NAGCNNNAAGTATTATTTCATTTTÄTTATTCCAAAGAATCAAGCCCATCATGAGTAGCCCACATGGTTGCTGTTCAAAGGTACTGAA 40 AAGGGAGGCATTTGGTCACCATTACCCATCAAGGAACTCTTTACAAGGATAGGTCCAAGTCCTTCGTGCTGCTCTTGGTCATTCAGT GACTGCAGTTTTGGCCCAGAAGCCATCCAAGATGAGCAAGTGCTGAGCCATCCTTAACTCATACCTAGATGAAACAACTTGCGCAG AAACGCTGGTCCTCCCCAGTAACCCCTTAGCATCATATTCCAATACAGGAAAGGCATCAGGTCAGCTTTCATGAGATACATGGGAA AGGCGCTCTTTGCTTTGATCAAAGGGGAAGGTTTCTAGCGGCTCTGCTTTTGTAGGTCAAACTCAGGCAAGATTCACACGGTTGTAG GCCGGTCANCAGTGGGACATGGATGTGTAGGCCATCATACTTCTTTGTTGGGGGTTTTNGATTCTTCATAATTNCAGGAANTTGTCCT 45 ATCAAGGATTCCTGACT (SEQ ID NO: 8898) 8899,T74688,,20,518,AGTCAGGAATCCTTGATAGG,, 8900,T74688,,20,512,GAATCCTTGATAGGACAANT,, 50 8901,T74688,,20,506,TTGATAGGACAANTTCCTGN,, 8902,T74688,,20,500,GGACAANTTCCTGNAATTAT,, 8903,T74688,,20,494,NTTCCTGNAATTATGNAGAA,, 8904,T74688,,20,488,GNAATTATGNAGAATCNAAA,, 8905,T74688,,20,482,ATGNAGAATCNAAACCCCCA,, 55 8906,T74688,,20,476,AATCNAAACCCCCAACAAG,, 8907,T74688,,20,470,AACCCCCAACAAGAAGTAT,, 8908,T74688,,20,464,CAACAAAGAAGTATGATGGC,, 8909, T74688,, 20,458, AGAAGTATGATGGCCTACAC,, 8910,T74688,,20,452,ATGATGGCCTACACATCCAT,, 60 8911,T74688,,20,446,GCCTACACATCCATGTCCCA,, 8912,T74688,,20,440,ACATCCATGTCCCACTGNTG,, 8913,T74688,,20,434,ATGTCCCACTGNTGACCGGC,, 8914,T74688,,20,428,CACTGNTGACCGGCCTACAA,, 8915,T74688,,20,422,TGACCGGCCTACAACCGTGT,, 65 8916,T74688,,20,416,GCCTACAACCGTGTGAATCT,, 8917,T74688,,20,410,AACCGTGTGAATCTTGCCTG,, 8918,T74688,,20,404,GTGAATCTTGCCTGAGTTTG,, 8919,T74688,,20,398,CTTGCCTGAGTTTGACCTAC,, 8920,T74688,,20,392,TGAGTTTGACCTACAAAAGC,, 70 8921,T74688,,20,386,TGACCTACAAAAGCAGAGCC,, 8922,T74688,,20,380,ACAAAAGCAGAGCCGCTAGA,,

8923,T74688,,20,374,GCAGAGCCGCTAGAAACCTT,, 8924,T74688,,20,368,CCGCTAGAAACCTTCCCCTT,, 8925,T74688,,20,362,GAAACCTTCCCCTTTGATCA,,

8926, T74688, 20, 356, TTCCCCTTTGATCAAAGCAA,

8927,T74688,,20,350,TTTGATCAAAGCAAAGAGCG,, 8928,T74688,,20,344,CAAAGCAAAGAGCGCCTTTC,, 8929,T74688,,20,338,AAAGAGCGCCTTTCCCATGT,, 8930,T74688,,20,332,CGCCTTTCCCATGTATCTCA,, 8931,T74688,,20,326,TCCCATGTATCTCATGAAAG,, 8932,T74688,,20,320,GTATCTCATGAAAGCTGACC,, 8933,T74688,,20,314,CATGAAAGCTGACCTGATGC,, 8934,T74688,,20,308,AGCTGACCTGATGCCTTTCC,, 8935,T74688,,20,302,CCTGATGCCTTTCCTGTATT,, 10 8936,T74688,,20,296,GCCTTTCCTGTATTGGAATA,, 8937,T74688,,20,290,CCTGTATTGGAATATGATGC,, 8938,T74688,,20,284,TTGGAATATGATGCTAAGGG,, 8939,T74688,,20,278,TATGATGCTAAGGGGTTACT,, 8940,T74688,,20,272,GCTAAGGGGTTACTGGGGAG,, 15 8941,T74688,,20,266,GGGTTACTGGGGAGGACCAG,, 8942,T74688,,20,260,CTGGGGAGGACCAGCGTTTC,, 8943,T74688,,20,254,AGGACCAGCGTTTCTGCGCA,, 8944,T74688,,20,248,AGCGTTTCTGCGCAAGTTGT,, 8945,T74688,,20,242,TCTGCGCAAGTTGTTTCATC,, 20 8946,T74688,,20,236,CAAGTTGTTTCATCTAGGTA,, 8947,T74688,,20,230,GTTTCATCTAGGTATGAGTT,, 8948,T74688,,20,224,TCTAGGTATGAGTTAAGGAT,, 8949,T74688,,20,218,TATGAGTTAAGGATGGCTCA,, 8950,T74688,,20,212,TTAAGGATGGCTCAGCACTT,, 25 8951,T74688,,20,206,ATGGCTCAGCACTTGCTCAT, 8952,T74688,,20,200,CAGCACTTGCTCATCTTGGA,, 8953,T74688,,20,194,TTGCTCATCTTGGATGGCTT,, 8954,T74688,,20,188,ATCTTGGATGGCTTCTGGGC,, 8955,T74688,,20,182,GATGGCTTCTGGGCCAAAAC,, 30 8956,T74688,,20,176,TTCTGGGCCAAAACTGCAGT,, 8957,T74688,,20,170,GCCAAAACTGCAGTCACTGA,, 8958,T74688,,20,164,ACTGCAGTCACTGAATGACC,, 8959,T74688,,20,158,GTCACTGAATGACCAAGAGC,, 8960,T74688,,20,152,GAATGACCAAGAGCAGCACG,, 35 8961,T74688,,20,146,CCAAGAGCAGCACGAAGGAC,, 8962,T74688,,20,140,GCAGCACGAAGGACTTGGAC,, 8963,T74688,,20,134,CGAAGGACTTGGACCTATCC,, 8964,T74688,,20,128,ACTTGGACCTATCCTTGTAA,, 8965, T74688, 20, 122, ACCTATCCTTGTAAAGAGTT, 40 8966,T74688,,20,116,CCTTGTAAAGAGTTCCTTGA,, 8967,T74688,,20,110,AAAGAGTTCCTTGATGGGTA,, 8968,T74688,,20,104,TTCCTTGATGGGTAATGGTG,, 8969,T74688,,20,98,GATGGGTAATGGTGACCAAA,, 8970,T74688,,20,92,TAATGGTGACCAAATGCCTC,, 8971,T74688,,20,86,TGACCAAATGCCTCCCTTTT,, 8972,T74688,,20,80,AATGCCTCCCTTTTCAGTAC,, 8973,T74688,,20,74,TCCCTTTTCAGTACCTTTGA,, 8974,T74688,,20,68,TTCAGTACCTTTGAACAGCA,, 8975,T74688,,20,62,ACCTTTGAACAGCAACCATG,, 50 8976,T74688,,20,56,GAACAGCAACCATGTGGGCT,, 8977,T74688,,20,50,CAACCATGTGGGCTACTCAT,, 8978, T74688,, 20,44, TGTGGGCTACTCATGATGGG,, 8979,T74688,,20,38,CTACTCATGATGGGCTTGAT,, 8980,T74688,,20,32,ATGATGGGCTTGATTCTTTG,, 55 8981,T74688,,20,26,GGCTTGATTCTTTGGAATAA,, 8982,T74688,,20,20,ATTCTTTGGAATAATAAAAT,, 8983,T74688,,20,14,TGGAATAATAAAATGAAATA,, 8984,T74688,,20,8,AATAAAATGAAATAATACTT,, 8985,T74688,,20,2,ATGAAATAATACTTNNNGCT,, 60 (GENBANK ACCESSION NO. AA187351) ÀTCTTCCCCATCGAGTACCATGATATĆTGGCAGATGTATAAGAAGGCAGAGGCTTCCTTTTGGACCGCCGAGGAGGTGGACCTCTCC ATAGTAAATGAAAACTTGGTGGAGCGATTTAGCCAAGAAGTTCAGATTACAGAAGCCCGCTGTTTCTATGGCTTCCAAATTGCCATG GAAAACATACATTCTGAAATGTATAGTCTTCTTATTGACACTTACATAAAAGNTCCCAAAGAAAGGGAATTTCTCTTCAATGCCATT CNAACGNTGCCTTGTGTCAAGAAGAAGGCAGACTGGGCCTTGCGCTGGATTGGGGACAAGAGGGCTACCTATGGTGAACGTGTTGT AGC (SEQ ID NO: 8986) 8987, AA187351,, 20,418, GCTACAACACGTTCACCATA,, 8988,AA187351,,20,412,ACACGTTCACCATAGGTAGC,, 8989, AA187351,, 20,406, TCACCATAGGTAGCCTCTTT,, 8990, AA187351,,20,400, TAGGTAGCCTCTTTGTCCCC,, 8991,AA187351,,20,394,GCCTCTTTGTCCCCAATCCA,,

8992,AA187351,,20,388,TTGTCCCCAATCCAGCGCAA,,

8993,AA187351,,20,382,CCAATCCAGCGCAAGGCCCA,,

8994,AA187351,,20,376,CAGCGCAAGGCCCAGTCTGC,, 8995,AA187351,,20,370,AAGGCCCAGTCTGCCTTCTT... 8996,AA187351,,20,364,CAGTCTGCCTTCTTGAC,, 8997, AA187351,, 20,358, GCCTTCTTCTTGACACAAGG,, 8998,AA187351,,20,352,TTCTTGACACAAGGCANCGT,, 8999,AA187351,,20,346,ACACAAGGCANCGTTNCAAT,, 9000,AA187351,,20,340,GGCANCGTTNCAATGGCATT,, 9001,AA187351,,20,334,GTTNCAATGGCATTGAAGAG,, 9002,AA187351,,20,328,ATGGCATTGAAGAGAAATTC,, 10 9003,AA187351,,20,322,TTGAAGAGAAATTCCCTTTC,, 9004,AA187351,,20,316,AGAAATTCCCTTTCTTTGGG,, 9005,AA187351,,20,310,TCCCTTTCTTTGGGANCTTT,, 9006,AA187351,,20,304,TCTTTGGGANCTTTTATGTA,, 9007,AA187351,,20,298,GGANCTTTTATGTAAGTGTC,, 15 9008,AA187351,,20,292,TTTATGTAAGTGTCAATAAG,, 9009, AA187351, 20, 286, TAAGTGTCAATAAGAAGACT, 9010,AA187351,,20,280,TCAATAAGAAGACTATACAT,, 9011,AA187351,,20,274,AGAAGACTATACATTTCAGA,, 9012,AA187351,,20,268,CTATACATTTCAGAATGTAT,, 20 9013,AA187351,,20,262,ATTTCAGAATGTATGTTTTC,, 9014,AA187351,,20,256,GAATGTATGTTTTCCATGGC,, 9015,AA187351,,20,250,ATGTTTTCCATGGCAATTTG,, 9016,AA187351,,20,244,TCCATGGCAATTTGGAAGCC,, 9017,AA187351,,20,238,GCAATTTGGAAGCCATAGAA,, 9018,AA187351,,20,232,TGGAAGCCATAGAAACAGCG,, 9019,AA187351,,20,226,CCATAGAAACAGCGGGCTTC,, 9020,AA187351,,20,220,AAACAGCGGGCTTCTGTAAT,, 9021,AA187351,,20,214,CGGGCTTCTGTAATCTGAAC,, 9022,AA187351,,20,208,TCTGTAATCTGAACTTCTTG,, 30 9023,AA187351,,20,202,ATCTGAACTTCTTGGCTAAA,, 9024,AA187351,,20,196,ACTTCTTGGCTAAATCGCTC,, 9025,AA187351,,20,190,TGGCTAAATCGCTCCACCAA,, 9026,AA187351,,20,184,AATCGCTCCACCAAGTTTTC,, 9027,AA187351,,20,178,TCCACCAAGTTTTCATTTAC,, 35 9028,AA187351,,20,172,AAGTTTTCATTTACTATGCC,, 9029,AA187351,,20,166,TCATTTACTATGCCATCGCT,, 9030,AA187351,,20,160,ACTATGCCATCGCTTGCTGC,, 9031,AA187351,,20,154,CCATCGCTTGCTGCAAAGAA,, 9032,AA187351,,20,148,CTTGCTGCAAAGAAAGCCAG,, 40 9033,AA187351,,20,142,GCAAAGAAAGCCAGAACATG,, 9034,AA187351,,20,136,AAAGCCAGAACATGGGATAT,, 9035,AA187351,,20,130,AGAACATGGGATATAAAATA,, 9036,AA187351,,20,124,TGGGATATAAAATATCTCTC,, 9037,AA187351,,20,118,ATAAAATATCTCTCCTCGGG,, 45 9038, AA187351, 20,112, TATCTCTCCTCGGGTTTCAG, 9039,AA187351,,20,106,TCCTCGGGTTTCAGGGATTC,, 9040,AA187351,,20,100,GGTTTCAGGGATTCCCAGTG,, 9041, AA187351, 20,94, AGGGATTCCCAGTGCTGAAT, 9042,AA187351,,20,88,TCCCAGTGCTGAATGTCCTT,, 50 9043,AA187351,,20,82,TGCTGAATGTCCTTGGAGAG,, 9044,AA187351,,20,76,ATGTCCTTGGAGAGGTCCAC,, 9045,AA187351,,20,70,TTGGAGAGGTCCACCTCCTC,, 9046,AA187351,,20,64,AGGTCCACCTCCTCGGCGGT,, 9047, AA187351,, 20,58, ACCTCCTCGGCGGTCCAAAA,, 55 9048,AA187351,,20,52,TCGGCGGTCCAAAAGGAAGC,, 9049,AA187351,,20,46,GTCCAAAAGGAAGCCTCTGC,, 9050,AA187351,,20,40,AAGGAAGCCTCTGCCTTCTT,, 9051, AA 187351, 20,34, GCCTCTGCCTTCTTATACAT, 9052,AA187351,,20,28,GCCTTCTTATACATCTGCCA,, 60 9053,AA187351,,20,22,TTATACATCTGCCAGATATC,, 9054,AA187351,,20,16,ATCTGCCAGATATCATGGTA,, 9055,AA187351,,20,10,CAGATATCATGGTACTCGAT, 9056,AA187351,,20,4,TCATGGTACTCGATGGGGAA,, (GENBANK ACCESSION NO. AA677534) 65 GTAAGTTTAAATTTATTTTTAAAAATGCTTGTCTTCCTCACTAGACAATCAACTCTATGAGGGCAGAGACTATGTCACCACTGTCCC

GAAAATAAGATAAAATACATTGATGCGCATCATTTTTGGTGTTCGAAAAAGTAGGATTGAATTAGGACTAATAAATCTAGAGAAATTTT ACCTCTTTCAATGCCCAAGCCACACTTTCTATCACTTTGAAACCGAAAAAGTAAATACTTTCCCAACATTTGCTTTGCTGGTAGGAA 70

ATGCTTTAATAAAAATGCAATCTCTAAGTTGCCATGG (SEQ ID NO: 9057)

9058,AA677534,,20,452,CCATGGCAACTTAGAGATTG,, 9059,AA677534,,20,446,CAACTTAGAGATTGCATTTT,, 9060,AA677534,,20,440,AGAGATTGCATTTTATTAA,,

9061,AA677534,,20,434,TGCATTTTTATTAAAGCATT,, 9062,AA677534,,20,428,TTTATTAAAGCATTTCCTAC... 9063,AA677534,,20,422,AAAGCATTTCCTACCAGCAA,, 9064,AA677534,,20,416,TTTCCTACCAGCAAAGCAAA,, 9065,AA677534,,20,410,ACCAGCAAAGCAAATGTTGG,, 9066,AA677534,,20,404,AAAGCAAATGTTGGGAAAGT,, 9067,AA677534,,20,398,AATGTTGGGAAAGTATTTAC,, 9068,AA677534,,20,392,GGGAAAGTATTTACTTTTTC,, 9069,AA677534,,20,386,GTATTTACTTTTTCGGTTTC,, 10 9070,AA677534,,20,380,ACTTTTTCGGTTTCAAAGTG,, 9071,AA677534,,20,374,TCGGTTTCAAAGTGATAGAA,, 9072,AA677534,,20,368,TCAAAGTGATAGAAAAGTGT,, 9073,AA677534,,20,362,TGATAGAAAAGTGTGGCTTG,, 9074,AA677534,,20,356,AAAAGTGTGGCTTGGGCATT,, 15 9075,AA677534,,20,350,GTGGCTTGGGCATTGAAAGA,, 9076,AA677534,,20,344,TGGGCATTGAAAGAGGTAAA,, 9077,AA677534,,20,338,TTGAAAGAGGTAAAATTCTC,, 9078,AA677534,,20,332,GAGGTAAAATTCTCTAGATT,, 9079,AA677534,,20,326,AAATTCTCTAGATTTATTAG,, 9080,AA677534,,20,320,TCTAGATTTATTAGTCCTAA,, 20 9081,AA677534,,20,314,TTTATTAGTCCTAATTCAAT,, 9082,AA677534,,20,308,AGTCCTAATTCAATCCTACT,, 9083,AA677534,,20,302,AATTCAATCCTACTTTTCGA,, 9084,AA677534,,20,296,ATCCTACTTTTCGAACACCA,, 25 9085,AA677534,,20,290,CTTTTCGAACACCAAAAATG,, 9086,AA677534,,20,284,GAACACCAAAAATGATGCGC,, 9087,AA677534,,20,278,CAAAAATGATGCGCATCAAT,, 9088,AA677534,,20,272,TGATGCGCATCAATGTATTT,, 9089,AA677534,,20,266,GCATCAATGTATTTTATCTT,, 30 9090,AA677534,,20,260,ATGTATTTTATCTTATTTTC,, 9091,AA677534,,20,254,TTTATCTTATTTTCTCAATC,, 9092,AA677534,,20,248,TTATTTTCTCAATCTCCTCT,, 9093,AA677534,,20,242,TCTCAATCTCCTCTCTTT,, 9094,AA677534,,20,236,TCTCCTCTCTCTTTCCTCCA,, 35 9095,AA677534,,20,230,CTCTCTTTCCTCCACCCATA,, 9096,AA677534,,20,224,TTCCTCCACCCATAATAAGA,, 9097,AA677534,,20,218,CACCCATAATAAGAGAATGT,, 9098,AA677534,,20,212,TAATAAGAGAATGTTCCTAC,, 9099,AA677534,,20,206,GAGAATGTTCCTACTCACAC,, 40 9100,AA677534,,20,200,GTTCCTACTCACACTTCAGC,, 9101,AA677534,,20,194,ACTCACACTTCAGCTGGGTC,, 9102,AA677534,,20,188,ACTTCAGCTGGGTCACATCC,, 9103,AA677534,,20,182,GCTGGGTCACATCCATCCCT,, 9104,AA677534,,20,176,TCACATCCATCCCTCCATTC,, 45 9105,AA677534,,20,170,CCATCCCTCCATTCATCCTT,, 9106,AA677534,,20,164,CTCCATTCATCCTTCCATCC,, 9107,AA677534,,20,158,TCATCCTTCCATCCATCTTT,, 9108,AA677534,,20,152,TTCCATCCATCTTTCCATCC,, 9109,AA677534,,20,146,CCATCTTTCCATCCATTACC,, 50 9110,AA677534,,20,140,TTCCATCCATTACCTCCATC,, 9111,AA677534,,20,134,CCATTACCTCCATCCATCCT,, 9112,AA677534,,20,128,CCTCCATCCATCCTTCCAAC,, 9113,AA677534,,20,122,TCCATCCTTCCAACATATAT,, 9114,AA677534,,20,116,CTTCCAACATATATTTATTG,, 55 9115,AA677534,,20,110,ACATATATTTATTGAGTACC,, 9116,AA677534,,20,104,ATTTATTGAGTACCTACTGT,, 9117,AA677534,,20,98,TGAGTACCTACTGTGTGCCA,, 9118,AA677534,,20,92,CCTACTGTGTGCCAGGTGCT,, 9119,AA677534,,20,86,GTGTGCCAGGTGCTGGTGGG,, 60 9120,AA677534,,20,80,CAGGTGCTGGTGGGACAGTG,, 9121,AA677534,,20,74,CTGGTGGGACAGTGGTGACA,, 9122,AA677534,,20,68,GGACAGTGGTGACATAGTCT,, 9123,AA677534,,20,62,TGGTGACATAGTCTCTGCCC, 9124,AA677534,,20,56,CATAGTCTCTGCCCTCATAG,, 9125,AA677534,,20,50,CTCTGCCCTCATAGAGTTGA,, 9126,AA677534,,20,44,CCTCATAGAGTTGATTGTCT,, 9127,AA677534,,20,38,AGAGTTGATTGTCTAGTGAG,, 9128,AA677534,,20,32,GATTGTCTAGTGAGGAAGAC,, 9129,AA677534,,20,26,CTAGTGAGGAAGACAAGCAT,, 9130,AA677534,,20,20,AGGAAGACAAGCATTTTTAA,, 9131,AA677534,,20,14,ACAAGCATTTTTAAAAAATA,, 9132,AA677534,,20,8,ATTTTTAAAAAATAAATTTA,, 9133,AA677534,,20,2,AAAAAATAAATTTAAACTTA,, (GENBANK ACCESSION NO. T59658)

- (SEQ ID NO: 9134) 10 9135,T59658,,20,520,AAAGAAAAAAGCCTCAAATG,, 9136,T59658,,20,514,AAAAGCCTCAAATGATCCTA,, 9137,T59658,,20,508,CTCAAATGATCCTAGTCACC,, 9138,T59658,,20,502,TGATCCTAGTCACCTNCGAT,, 9139,T59658,,20,496,TAGTCACCTNCGATACTGTA,, 9140,T59658,,20,490,CCTNCGATACTGTACCTCCA,, 9141,T59658,20,484,ATACTGTACCTCCAGATGCC, 9142,T59658,,20,478,TACCTCCAGATGCCGAAATG,, 9143,T59658,,20,472,CAGATGCCGAAATGGATATT,, 9144,T59658,,20,466,CCGAAATGGATATTCCGAGT,, 9145,T59658,,20,460,TGGATATTCCGAGTGGAAAC,, 9146,T59658,,20,454,TTCCGAGTGGAAACCCTGAC,, 9147,T59658,,20,448,GTGGAAACCCTGACAAAGTG,, 9148,T59658,,20,442,ACCCTGACAAAGTGCGCCCT,, 9149,T59658,,20,436,ACAAAGTGCGCCCTGCCTTG,, 25 9150,T59658,,20,430,TGCGCCCTGCCTTGNATGTG,, 9151,T59658,,20,424,CTGCCTTGNATGTGAACTGG,, 9152,T59658,,20,418,TGNATGTGAACTGGTATAGA,, 9153,T59658,,20,412,TGAACTGGTATAGACAATGA,, 9154,T59658,,20,406,GGTATAGACAATGACCCAGT,, 30 . 9155,T59658,,20,400,GACAATGACCCAGTGGCTGG,, 9156,T59658,,20,394,GACCCAGTGGCTGGGTNCAG,, 9157,T59658,,20,388,GTGGCTGGGTNCAGTGGGAT,, 9158,T59658,,20,382,GGGTNCAGTGGGATGTCCTC,, 9159,T59658,,20,376,AGTGGGATGTCCTCCNCTGT,, 9160,T59658,,20,370,ATGTCCTCCNCTGTGAGCAC,, 9161,T59658,,20,364,TCCNCTGTGAGCACAAAGGC,, 9162,T59658,,20,358,GTGAGCACAAAGGCCTATCA,, 9163,T59658,,20,352,ACAAAGGCCTATCAAATGAC,, 9164,T59658,,20,346,GCCTATCAAATGACCACCTA,,
- 40 9165,T59658,,20,340,CAAATGACACCACCTA, 9166,T59658,,20,334,ACCACCTAAAGATAAGTTCC, 9167,T59658,20,328,TAAAGATAAGTTCCAACAAC, 9168,T59658,20,322,TAAGTTCCAACAACCCATCA, 9169,T59658,,20,316,CCAACAACCCATCACATTGG,
- 9170,T59658,20,310,ACCCATCACATTGGAAGGGA,, 9171,T59658,20,304,CACATTGGAAGGGAGAAGGC,, 9172,T59658,20,298,GGAAGGGAGAAGGCGAACAT,, 9173,T59658,20,292,GAGAAGGCGAACATTTCCAT,, 9174,T59658,20,286,GCGAACATTTCCATGTTTGG,
- 50 9175,T59658,,20,280,ATTTCCATGTTTGGCGGGCA,, 9176,T59658,,20,274,ATGTTTGGCGGGCATGTGAG,, 9177,T59658,,20,268,GGCGGGCATGTGAGTGCACAA, 9178,T59658,,20,262,CATGTGAGTGCACAAGATGG,, 9179,T59658,,20,256,AGTGCACAAGATGGAAAGAG,
- 55 9180,T59658,,20,250,CAAGATGGAAAGAGCGATTG,, 9181,T59658,,20,244,GGAAAGAGCGATTGGAGCAT,, 9182,T59658,,20,238,AGCGATTGGAGCATCCCTGG,, 9183,T59658,,20,232,TGGAGCATCCCTGGTATAAT,, 9184,T59658,,20,226,ATCCCTGGTATAATTACCCC,
- 60 9185,T59658,,20,220,GGTATAATTACCCCCATTGT,, 9186,T59658,,20,214,ATTACCCCCATTGTGCTCTT,, 9187,T59658,,20,208,CCCATTGTGCTCTTAATGGA,, 9188,T59658,,20,202,GTGCTCTTAATGGAAATTTC,, 9189,T59658,,20,196,TTAATGGAAATTTCAAAGGA,
- 65 9190,T59658,,20,190,GAAATTTCAAAGGACGGGAG,, 9191,T59658,,20,184,TCAAAGGACGGGAGTATTCT,, 9192,T59658,,20,178,GACGGGAGTATTCTGTTGGT, 9193,T59658,,20,172,AGTATTCTGTTGGTTGGTTGTT, 9194,T59658,,20,166,CTGTTGGTTGGTTCCAGGT,
- 70 9195,T59658,,20,160,GTTGGTGTCCAGGTTTGTGG,, 9196,T59658,,20,154,GTCCAGGTTTGTGGCACTGT,, 9197,T59658,,20,148,GTTTGTGGCACTGTTCCAAG,, 9198,T59658,,20,142,GGCACTGTTCCAAGAGGCCT,, 9199,T59658,,20,136,GTTCCAAGAGGCCTTACACA,
- 75 9200,T59658,,20,130,AGAGGCCTTACACACACACA,

9201,T59658,,20,124,CTTACACACACACACAAATA,, 9202,T59658,,20,118,CACACACACAAATATATAAT... 9203,T59658,,20,112,CACAAATATATAATTTTCTA,, 9204,T59658,,20,106,TATATAATTTTCTATACATA,, 9205,T59658,,20,100,ATTTTCTATACATATATATC,, 9206,T59658,,20,94,TATACATATATATCCTCTAG,, 9207,T59658,,20,88,TATATATCCTCTAGCTTGAA,, 9208,T59658,,20,82,TCCTCTAGCTTGAAACTTTT,, 9209,T59658,,20,76,AGCTTGAAACTTTTGCTCAA., 9210,T59658,,20,70,AAACTTTTGCTCAAGTTTAT,, 9211,T59658,,20,64,TTGCTCAAGTTTATTTATGT,, 9212,T59658,,20,58,AAGTTTATTTATGTCACTGG,, 9213,T59658,,20,52,ATTTATGTCACTGGCTGGCT,, 9214,T59658,,20,46,GTCACTGGCTGGCTGGATCC, 15 9215,T59658,,20,40,GGCTGGCTGGATCCAAAGTC,, 9216,T59658,,20,34,CTGGATCCAAAGTCATGTGT,, 9217,T59658,,20,28,CCAAAGTCATGTGTCCACAC,, 9218,T59658,,20,22,TCATGTGTCCACACATTCAT,, 9219,T59658,,20,16,GTCCACACATTCATAAATAA,, 20 9220,T59658,,20,10,ACATTCATAAATAAAAATTT,, 9221,T59658,,20,4,ATAAATAAAAATTTTACCTA,, (GENBANK ACCESSION NO. AA284245) CACTCCTCCAGTAGCGGCTGACGTCGTCAATGGCCGCTATGAGGAGGTGAGCGTTCCGGCTTCGAGGAGTTCCACCGGGCCGTGG CTGAACCAGTCGTACGAGAGGGGCTGAAGCACATTAGTGAAGGATGTGTGTTCATCTACTGCCAAGTAGGAGAAAAGCCTTATTGG AAAGATCCAAATAATGACTTCAGAAAAAACTTGAAAGTAACAGCAGTGCCTACACTTAAGTATGGAACACCTCAAAAAACTGGT AGAATCTGAGTGTCTTCAGGCCAACCTGGTGGAAATGTTGTTCTCTGAAGATTTAAGATTTTAGGATGGCAATCA (SEQ ID NO: 9222) 30 9223,AA284245,,20,399,TGATTGCCATCCTAAAATCT,, 9224,AA284245,,20,393,CCATCCTAAAATCTTAATCT,, 9225, AA284245, 20, 387, TAAAATCTTAATCTTCAGAG, 9226,AA284245,,20,381,CTTAATCTTCAGAGAACAAC,, 9227,AA284245,,20,375,CTTCAGAGAACAACATTTCC,, 35 9228,AA284245,,20,369,AGAACAACATTTCCACCAGG,, 9229,AA284245,,20,363,ACATTTCCACCAGGTTGGCC,, 9230,AA284245,,20,357,CCACCAGGTTGGCCTGAAGA,, 9231,AA284245,,20,351,GGTTGGCCTGAAGACACTCA,, 9232,AA284245,,20,345,CCTGAAGACACTCAGATTCT,, 40 9233,AA284245,,20,339,GACACTCAGATTCTACCAGT,, 9234,AA284245,,20,333,CAGATTCTACCAGTTTTTGA,, 9235,AA284245,,20,327,CTACCAGTTTTTGAGGTGTT,, 9236,AA284245,,20,321,GTTTTTGAGGTGTTCCATAC,, 9237,AA284245,,20,315,GAGGTGTTCCATACTTAAGT,, 45 9238,AA284245,,20,309,TTCCATACTTAAGTAGTGTA,, 9239,AA284245,,20,303,ACTTAAGTAGTGTAGGCACT,, 9240,AA284245,,20,297,GTAGTGTAGGCACTGCTGTT,, 9241,AA284245,,20,291,TAGGCACTGCTGTTACTTTC,, 9242,AA284245,,20,285,CTGCTGTTACTTTCAAGTTT,, 50 9243,AA284245,,20,279,TTACTTTCAAGTTTTTTCTG,, 9244,AA284245,,20,273,TCAAGTTTTTTCTGAAGTCA,, 9245,AA284245,,20,267,TTTTTCTGAAGTCATTATTT,, 9246,AA284245,,20,261,TGAAGTCATTATTTGGATCT,, 9247,AA284245,,20,255,CATTATTTGGATCTTTCCAA,, 55 9248,AA284245,,20,249,TTGGATCTTTCCAATAAGGC,, 9249,AA284245,,20,243,CTTTCCAATAAGGCTTTTCT,, 9250,AA284245,,20,237,AATAAGGCTTTTCTCCTACT,, 9251,AA284245,,20,231,GCTTTTCTCCTACTTGGCAG,, 9252,AA284245,,20,225,CTCCTACTTGGCAGTAGATG,, 60 9253,AA284245,,20,219,CTTGGCAGTAGATGAACACA,, 9254,AA284245,,20,213,AGTAGATGAACACACATCCT,, 9255,AA284245,,20,207,TGAACACACATCCTTCACTA,, 9256,AA284245,,20,201,CACATCCTTCACTAATGTGC,, 9257,AA284245,,20,195,CTTCACTAATGTGCTTCAGC,, 9258,AA284245,,20,189,TAATGTGCTTCAGCCCCTCT,, 65 9259,AA284245,,20,183,GCTTCAGCCCCTCTCGTACG,, 9260,AA284245,,20,177,GCCCCTCTCGTACGACTGGT,, 9261,AA284245,,20,171,CTCGTACGACTGGTTCAGCC,, 9262,AA284245,,20,165,CGACTGGTTCAGCCGCACGC,, 70 9263,AA284245,,20,159,GTTCAGCCGCACGCAGTCGG,, 9264,AA284245,,20,153,CCGCACGCAGTCGGGGCACC,, 9265,AA284245,,20,147,GCAGTCGGGGCACCAGCTTT,,

9266,AA284245,,20,141,GGGGCACCAGCTTTTCCCCC,, 9267,AA284245,,20,135,CCAGCTTTTCCCCCGGCGT,,

9268,AA284245,,20,129,TTTCCCCCGGCGTCCTTAG,,

9269, AA284245, 20, 123, CCCGGCGTCCTTAGAACCCG,, 9270,AA284245,,20,117,GTCCTTAGAACCCGTAAAGT,, 9271,AA284245,,20,111,AGAACCCGTAAAGTAGGCGA,, 9272,AA284245,,20,105,CGTAAAGTAGGCGAAAATGG,, 9273,AA284245,,20,99,GTAGGCGAAAATGGTCTTGC,, 9274,AA284245,,20,93,GAAAATGGTCTTGCCATTGT,, 9275, AA284245,,20,87, GGTCTTGCCATTGTGCTGTT,, 9276,AA284245,,20,81,GCCATTGTGCTGTTCCACGG,, 9277,AA284245,,20,75,GTGCTGTTCCACGGCCCGGT, 9278,AA284245,,20,69,TTCCACGGCCCGGTGGAACT,, 9279,AA284245,,20,63,GGCCCGGTGGAACTCCTCGA,, 9280,AA284245,,20,57,GTGGAACTCCTCGAAGCCGG,, 9281,AA284245,,20,51,CTCCTCGAAGCCGGACACGC,, 9282,AA284245,,20,45,GAAGCCGGACACGCTCACCT,, 15 9283,AA284245,,20,39,GGACACGCTCACCTCAT,, 9284,AA284245,,20,33,GCTCACCTCCTCATAGCGGC,, 9285,AA284245,,20,27,CTCCTCATAGCGGCCATTGA,, 9286,AA284245,,20,21,ATAGCGGCCATTGACGACGT,, 9287, AA284245,, 20,15, GCCATTGACGACGTCAGCCG,, 20 9288, AA284245,, 20,9, GACGACGTCAGCCGCTACTG,, 9289,AA284245,,20,3,GTCAGCCGCTACTGGAGGAG,, (GENBANK ACCESSION NO. H05914) CTTTTTACATTATATGGTAATGTACACTACTGATATAGTTCACAAAATAAGATCCTTTGGAAGANTTATACACAAGACATGATATTG GATTTATACACTGGATCCCAGGGATGTGACTCACTGGGAAAAAATGTTGGACTAGGCATGTTCAGTGAAGGAGCCAGGNAGTTATA TTTCACACTAACCAGTTGANGACTACACAAGATTAATACCATCCAGCATCAGGNTATAGCNTGTGGATTTTACAAACCATTTCTTAT TTCTAACTTTCAGGNGTTGATGTTTTTCCCAGTCCNTCTTAAAATTTTTACTGCTT (SEQ ID NO: 9290) 30 9291,H05914,,20,472,AAGCAGTAAAAATTTTAAGA,, 9292,H05914,,20,466,TAAAAATTTTAAGANGGACT,, 9293,H05914,,20,460,TTTTAAGANGGACTGGGAAA,, 9294,H05914,,20,454,GANGGACTGGGAAAAACATC,, 9295,H05914,,20,448,CTGGGAAAAACATCAACNCC,, 35 9296,H05914,,20,442,AAAACATCAACNCCTGAAAG,, 9297,H05914,,20,436,TCAACNCCTGAAAGTTAGAA,, 9298,H05914,,20,430,CCTGAAAGTTAGAAATAAGA,, 9299,H05914,,20,424,AGTTAGAAATAAGAAATGGT,, 40 9300,H05914,,20,418,AAATAAGAAATGGTTTGTAA,, 9301,H05914,,20,412,GAAATGGTTTGTAAAATCCA,, 9302,H05914,,20,406,GTTTGTAAAATCCACANGCT,, 9303,H05914,,20,400,AAAATCCACANGCTATANCC,, 9304,H05914,,20,394,CACANGCTATANCCTGATGC,, 45 9305,H05914,,20,388,CTATANCCTGATGCTGGATG,, 9306,H05914,,20,382,CCTGATGCTGGATGGTATTA,, 9307,H05914,,20,376,GCTGGATGGTATTAATCTTG,, 9308,H05914,,20,370,TGGTATTAATCTTGTGTAGT,, 9309,H05914,,20,364,TAATCTTGTGTAGTCNTCAA,, 9310,H05914,,20,358,TGTGTAGTCNTCAACTGGTT,, 50 9311,H05914,,20,352,GTCNTCAACTGGTTAGTGTG,, 9312,H05914,,20,346,AACTGGTTAGTGTGAAANAG,, 9313,H05914,,20,340,TTAGTGTGAAANAGTTCTGC,, 9314,H05914,,20,334,TGAAANAGTTCTGCCACCTC,, 9315,H05914,,20,328,AGTTCTGCCACCTCTGACGC,, 9316,H05914,,20,322,GCCACCTCTGACGCACCACT,, 9317,H05914,,20,316,TCTGACGCACCACTGCCAAT,, 9318,H05914,,20,310,GCACCACTGCCAATGCTGTA,, 9319,H05914,,20,304,CTGCCAATGCTGTACGTACT,, 60 9320,H05914,,20,298,ATGCTGTACGTACTGCATTT,, 9321,H05914,,20,292,TACGTACTGCATTTGCCCCT,, 9322,H05914,,20,286,CTGCATTTGCCCCTTGAGCC, 9323,H05914,,20,280,TTGCCCCTTGAGCCAGGTGG,, 9324,H05914,,20,274,CTTGAGCCAGGTGGATGTTT,, 65 9325,H05914,,20,268,CCAGGTGGATGTTTACCGTG,, 9326.H05914,,20,262,GGATGTTTACCGTGTGTTAT,, 9327,H05914,,20,256,TTACCGTGTGTTATATAACT,, 9328,H05914,,20,250,TGTGTTATATAACTNCCTGG,, 9329,H05914,,20,244,ATATAACTNCCTGGCTCCTT,, 70 9330,H05914,,20,238,CTNCCTGGCTCCTTCACTGA,, 9331,H05914,,20,232,GGCTCCTTCACTGAACATGC, 9332,H05914,,20,226,TTCACTGAACATGCCTAGTC,, 9333,H05914,,20,220,GAACATGCCTAGTCCAACAT,, 9334,H05914,,20,214,GCCTAGTCCAACATTTTTTC,,

9335,H05914,,20,208,TCCAACATTTTTTCCCAGTG,,

	9336,H0	5914,,20,202,ATTTTTTCCCAGTGAGTCAC,
		5914,,20,196,TCCCAGTGAGTCACATCCCT,,
		5914,,20,190,TGAGTCACATCCCTGGGATC,,
_		5914,,20,184,ACATCCCTGGGATCCAGTGT,
5		5914,,20,178,CTGGGATCCAGTGTATAAAT,
		5914,,20,172,TCCAGTGTATAAATCCAATA,
		5914,20,166,GTATAAATCCAATATCATGT,
		5914,,20,160,ATCCAATATCATGTCTTGTG,
10		5914,,20,154,TATCATGTCTTGTGTATAAN,
10		5914,,20,148,GTCTTGTGTATAANTCTTCC,
		5914,,20,142,TGTATAANTCTTCCAAAGGA,, 5914,,20,136,ANTCTTCCAAAGGATCTTAT,,
		5914,,20,130,CCAAAGGATCTTATT, 5914,,20,130,CCAAAGGATCTTATTTTGTG,
	0340 LIO	5914,,20,130,CCAAAGGATCTTATTTTGTG, 5914,,20,124,GATCTTATTTTGTGAACTAT,
15		5914,,20,118,ATTTTGTGAACTATATCAGT,
13		5914,20,112,TGAACTATATCAGTAGTGTA,
		5914,,20,106,ATATCAGTAGTGTACATTAC,
		5914,,20,100,GTAGTGTACATTACCATATA,
		5914,,20,94,TACATTACCATATAATGTAA,
20		5914,,20,88,ACCATATAATGTAAAAAGAT,
		5914,,20,82,TAATGTAAAAAGATCTACAT,
		5914,,20,76,AAAAAGATCTACATACAAAC,
		5914,,20,70,ATCTACATACAAACAATGCA,,
		5914,,20,64,ATACAAACAATGCAACCAAC,,
25		5914,,20,58,ACAATGCAACCAACTATCCA,,
		5914,,20,52,CAACCAACTATCCAAGTGTT,,
		5914,,20,46,ACTATCCAAGTGTTATACCA,,
	9363,H0	5914,,20,40,CAAGTGTTATACCAACTAAA,,
		5914,,20,34,TTATACCAACTAAAACCCCC,,
30	9365,H0	5914,,20,28,CAACTAAAACCCCCAATAAA,,
	9366,H0	5914,20,22,AAACCCCCAATAAACCTTGA,,
	9367,H0	5914,,20,16,CCAATAAACCTTGAACAGTG,,
	9368,H0	5914,,20,10,AACCTTGAACAGTGAAANAA,,
	9369,H0	5914,,20,4,GAACAGTGAAANAAAAAAAA,
35		
	SEQ ID	•
	Human I	
	12569	CTCCACTCACTCCAG
40	12570 12571	CTCCACTCACTCCAG GCAGCTGCCCCATGCTG
40	12572	GAGAAGGCCTTGTAACC
	12573	GCGCCCTGCTCCATTCGCC
	12574	TTTCTTCCAGCTGTGTGT
		CACCACGCCCGGCTTCTCT
	123/3	
45	12575 12576	TCTGCCCGCCTCAGCCTCC
45	12576 12577	TCTGCCCGCCTCAGCCTCC GGCACCAGGCTGGTCTCG
45	12576	TCTGCCCGCCTCAGCCTCC GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC
45	12576 12577	GGCACCAGGCTGGTCTCG
	12576 12577 12578	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC
50	12576 12577 12578 12579	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT
	12576 12577 12578 12579 12580 12581 12582	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG
	12576 12577 12578 12579 12580 12581 12582 12583	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGGCTTCGG
	12576 12577 12578 12579 12580 12581 12582 12583 12584	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC
	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCAGCCC GGTTTCCTGGGGCCCTGGGT
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCAG GCAGCTCCGTTTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCCTGGGT GGGATACGGGTTGCTCCAG
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCAGCCC GGTTTCCTGGGGCCTCGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTTGCTCCAG
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12588	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTTGTTCTCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCC
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCC GGCCCTCACCCGTGCTGCC
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590 12591	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTTGGGGCCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTCTCACT TTCAGGGTGCTGGCTGGCC GGCCCTCACCCGTGCCCTGT CCACTCACCCGTGCCCTGT
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590 12591	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCAG GCAGCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTCACT TTCAGGGTGCTGGCTGCC GGCCCTCACCCGTGCCCTGT CCACTCACTCCAGGTGGTGT TGTGCCACTTCAGGTGGTGT TGTGCCACTTCAGGTGGTGT
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590 12591 12592	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCCTGGGT GGGATACGGGTTGCTCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGCCTGC GCCCTCACCCGTGCCTGT CCACTCACCCGTGCCTGT TGTGCCACTTGGTGCTGG TGTGCCACTTGGTGCTGG TGCTGCCACTCGAAGGGCTCCCT
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590 12591 12592 12593 12594	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCATTGGGAGAT GCAAAGCCACCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCAGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCAGCCC GGTTTCCTGGGGCCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCC GGCCCTCACCCGTGCCCTGT CCACTCCAGCTGGTTGTCCAG TGTGCCACTTGGTGCTCG TGGCCACTCCAGCTGTCCTG CCACTCCATCCAGGTGGTGT TGTGCCACTTGGTGCTCG TGGCGCTCCAAGGGCTCCCT GGCGGCTCCCGGGCTCCCT GGCGGCTCCCGGGCTGGCT
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590 12591 12592 12593 12594 12595	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACTT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGCTGCCGG GCCCTCACCCGTGCCCTGT CCACTCACCCGTGCCCTGT CCACTCACTCCAGGTGGTT TGTGCCACTTGTCTGG TGCTGCTCCAAGGGCTCCCT GGCGGCTTCCCAAGGGCTCCCT GGCGGCTGCCGGGT CGGGGCTGCCGGGT CGGGGCTGCCGGGT CGGGGCTCCCGGGCTCCCT GGCGGCTCCCGGGCTCCCCT GGCGGCTCCCGGGCTCCCCT
50	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590 12591 12592 12593 12594 12595 12596	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCAG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCC GGCCTCACCCGTGCCTGT CCACTCACCCGTGCCTGT CCACTCACTCCAGTGGTGT TGTGCCACTTGTCTGG TGCTGCTCGAGGCTCCCT GGCGGCTGCCCTGGT CCACTCACTCCAGGTGCTCCT GGCGGCTGCCGGGT CCGGGCTCCCCT GGCGGCTCCCACTG CTTGCCGGCTCCCCT CGGGACCGCTTCCCCACTG CTTGGCTGGTTCCTCCACTG
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12589 12590 12591 12592 12593 12594 12595 12596 12597	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCAG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGGTGGCCCTGGG GCCCTCACCCGTGCCCTGT CCACTCACCCGTGCCCTGT CCACTCACTCCAGGTGGTGT TGTGCCACTTGGTGCTGG TGCTGCTCGAAGGGCTCCCT GGCGGCTGCGGCTGGT CTTGCCGGCTGCCTGT CGGGACCGCTTCCCCACTG CTTGGCTGGTTCCCACTG CTTGGCTGGTTCCTCCACTG CTTGGCTGGTTCCTGGCCT TGGCAGCCTTCTCCCACTG
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12589 12590 12591 12592 12593 12594 12595 12596	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCAG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCC GGCCTCACCCGTGCCTGT CCACTCACCCGTGCCTGT CCACTCACTCCAGTGGTGT TGTGCCACTTGTCTGG TGCTGCTCGAGGCTCCCT GGCGGCTGCCCTGGT CCACTCACTCCAGGTGCTCCT GGCGGCTGCCGGGT CCGGGCTCCCCT GGCGGCTCCCACTG CTTGCCGGCTCCCCT CGGGACCGCTTCCCCACTG CTTGGCTGGTTCCTCCACTG
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12590 12590 12591 12592 12593 12594 12595 12596 12597 12598	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCAGCC GGTTTCCTGGGGCCTGGGT GGGATACGGTTGCTCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCC GGCCTCACCCGTGCCTGT CCACTCACCCGTGCCTGT CCACTCACTCCAGGTGGTT TGTGCCACTTGGTGTGGT TGTGCCACTTGGTGCTGG TCTGCTCGAAGGGCTCCCT GCGGACCGCTTCTCCACTG CTTGGCTGCTTCTCCACTG CTTGGCTGGTTCTTCCACTG CTTGGCAGCTTGTTCCTGCCT TGGCAGCCTTTCTCACTG CTTGCTGATCTCACTGGG
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12599 12591 12592 12593 12594 12595 12596 12597 12598 12599	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCACCCCATTGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGCCGGT GCCCTCACCCGTGCCCTGT CCACTCACCCGTGCCTGT CCACTCACTCCAGGTGGTT TGTGCCACTTGGTGCTG TGTGCCAAGGGCTCCCT GGCGGCTGCGGGT CGGGACCGCTTCCCACTG CTTGGCTGGTTCCTGGCT TTTGCTGGTGTGTGT TGTGCAAGGGCTCCCT TGGCAGCCTTCTCCACTG CTTTGCTTGAACTCCACTG CTTTGCTTGAACTCCACTG CTTTGCTTGATCTCCACTGG GTCATCCCACTG GTCATCCCACTGGTTCTCCCACTG GTCATCCCCGAAGGTGGT TCTTGCTGATCTCCACTGG GTCATCCCCGAAGGTGGG GTCATCCCCGAAGGTGGG GTTGTCTGGACTCCTC TCGTACTTCCCAAGGGTGG GGTTGTCTGGACTCCTC
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12590 12591 12592 12593 12594 12595 12596 12597 12598 12599 12599 12599	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCAG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCAGCCC GGTTTCCTGGGGCCTCGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCCTGT CCACTCACCCGTGCCCTGT CCACTCACCGTGCCCTGT TGGCACTTGGTGCTGG TGTGCCACTTGGTGCTGC TGTGCCACTTGGTGCTCCT GGCGGCTTCCCACTG CTTGGCTGGTTCCCACTG CTTGGCTGGTTCCTGCCTT TCTGCTGGTTCCTGCCTT TCTGCTGGTTCCTGCCT TCTTGCTGGTTCCTGCCT TCTTGCTGGTTCCTGCCT TCTTGCTGGTTCCTCCACTG GTCATCCCACTGGG GTCATCCCACTGGG GTCATCCCTGCTCCC TCGTACTTCCCACTGGG GTCATCCCCTGCTCCTC TCGTACTTCCCGAAGGTGG
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12590 12591 12592 12592 12593 12594 12595 12596 12597 12598 12599 12599 12599 12599 12600 12601	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCACCCCATTGGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACCT GOAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCAG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGCCCTGGGT GGGATACGGGTTGCTCCAG TCTGCCGGGTCGTTTTCACT TTCAGGGTGCTGGCTGCG GGCCCTCACCCGTGCCCTGT CCACTCACCCGTGCCTGT CCACTCACTCCAGGTGGT TGTGCCACTTGGTGCTGC TGTGTGCTGAAGGCTCCCT GGCGGCTGCGGGT CCTGGCTGGGTCCCT CGGAGCCTTCTCCCACTG CTTGCTGATCCCACTG GTCATCCCACTGGG GTCATCCCTGCTCCT TCGTACTCCCACTGG GTCATCCCTGCTCCT TCTGCTGATCTCCACTGG GTCATCCCTGCTCTC TCGTACTTCCCGAAGGTGG GTTGTCTCGAAGCTGG GTTGTCTGGACTTCCGGT GTTGCTGAAGCTGCGT GTTGCTGAAGCTGCGT GTTGCTGAAGCTGCGGT GTTGCTGAAGCTGCGGT GTTGCTGAAGCTGCGGT GTTGCTGAAGCTGCGGT GTTGCTGAAGCTGCGGT GTTGCTGAAGCTGCGGT CGGGTTCTCCCACGG
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12590 12591 12592 12593 12594 12595 12596 12597 12598 12598 12599 12590 12591	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCAGCC GGTTTCCTGGGGCCTGGGT GGGATACGGTTGCTCAG TCTGCCGGGTCGTTCTCACT TTCAGGGTGCTGCCTGC GCCCTCACCCGTGCCTGT CCACTCACCCGTGCCTGT CCACTCACTCCAGGTGGT TGTGCCACTTGTCTCG TGTGCCACTTGTCTCCACT CTTGCTGGTGCTGGCT CTGCTGCTTCTCCACTG TCTGCTGCTGCTTCTCCACTG CTTGCTGTTCTCCACTG CTTGCTGTTCTCCACTG CTTGCTGATCTCCACTGG GTCATCCCGAGGACCTTCTCCACTG GTCATCCTGCTCTCTC TCGTACTTCCCACTGG GTCATCCTGCTCTC TCGTACTTCCCACTGG GTTGTTGGCAGCTTCTCCCACTG GTTGCTGAAGCTGCGT CTGGTTCTCCCACTGG GTTGTTGGACTTCTCCCACTG GTTGCTGAAGCTCTCTC TCGTACTTCCCAAGGTGG GTTGTTGGACTCTCGGGT CTTGCTGAAGCTCCCAGG TGTTCTACTTCCCAGG TGCTCCCAGGTTCTCCCAGG TGCTCCCAGGTTCTCCCAGG
50 55 60 65 70	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12588 12590 12591 12592 12593 12594 12595 12596 12597 12598 12599 12599 12600 12601 12602 12603 12604 12605	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCATTGGAGAT GCAAAGCCACCCATTGG GTTCCCAGAGCTTGCCACT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCCGG GCGCCTCCGTTGTTTCTCAGG GCAGCTGCTGCCCAGCCC GGTTTCCTGGGGCCTGCGT GGGATACGGGTTGCTCAG TCTGCCGGGTCGTTCTCACT TTCAGGGTGCTGGCTGCCTGT CCACTCACCCGTGCCCTGT CCACTCCAGGTGCTGC TGTGCTCGAAGGCTCCT GGCGGCTCGCCTGT CGGGACCGCTTCTCCCACTG TCTGCTGGTTCCTGCCT TCTGCTGGTTCCTGCCT TCTGCTGGTTCCTGCCT TCTGCTGGTTCCTGCCT TCTGCTGGTTCCTGCCT TCTGCACCTGGTCCTGGCCT TCTGCTGGTTCCTGCCT TCTGCTGGTTCCTGCCT TCTGCTGCTCTCCACTG GTCATCCCACTGGG GTCATCCCACTGGG GTCATCCCACTGCTC TCGTACTTCCCAAGGTGG GTTGCTGAAGCTCCCCT CGGGTTCTTCCCACTG CTGCTCCTGCCTC TCGTACTTCCCAAGGTGG GTTGCTGAAGCTGCGGT CTGCTCCAAGGTGC GTTGCTGAAGCTTCCCACGG GTTGCTGAAGCTTCCCACG TCGCTCCCACGTTTCTCCAGG TCCCCCAGGTTTCTCCCACG TCCCCCACGTTTCTCCCACG TCCCCCACGTTTCTCCCACG TCCCCCACGTTTCTCCCACG TCCCCCACGTTTCTCCCACG TCCCCCACGTTTCTCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCCACGTTTCTCCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCACGTTTCTCCCCACG TCCCCCCCACGCTTCTCCCCCCCCCC
50 55 60	12576 12577 12578 12579 12580 12581 12582 12583 12584 12585 12586 12587 12589 12590 12591 12592 12593 12594 12595 12596 12597 12598 12599 12600 12601 12602 12603 12604	GGCACCAGGCTGGTCTCG TGGGAGATGCCAAGGCAC GCCACCCCATTGGAGAT GCAAAGCCACCCCATTGG GTTCCCAGAGCTTGCCACT GGAGCTCGGTGCTGCAATTG GATACACGTGTGGGCTTCGG GCGCCTCCGTTGTTCTCAGG GCAGCTGCTGCCAGCC GGTTTCCTGGGGCCTGGGT GGGATACGGTTGCTCAG TCTGCCGGGTCGTTCTCACT TTCAGGGTGCTGCCTGC GCCCTCACCCGTGCCTGT CCACTCACCCGTGCCTGT CCACTCACTCCAGGTGGT TGTGCCACTTGTCTCG TGTGCCACTTGTCTCCACT CTTGCTGGTGCTGGCT CTGCTGCTTCTCCACTG TCTGCTGCTGCTTCTCCACTG CTTGCTGTTCTCCACTG CTTGCTGTTCTCCACTG CTTGCTGATCTCCACTGG GTCATCCCGAGGACCTTCTCCACTG GTCATCCTGCTCTCTC TCGTACTTCCCACTGG GTCATCCTGCTCTC TCGTACTTCCCACTGG GTTGTTGGCAGCTTCTCCCACTG GTTGCTGAAGCTGCGT CTGGTTCTCCCACTGG GTTGTTGGACTTCTCCCACTG GTTGCTGAAGCTCTCTC TCGTACTTCCCAAGGTGG GTTGTTGGACTCTCGGGT CTTGCTGAAGCTCCCAGG TGTTCTACTTCCCAGG TGCTCCCAGGTTCTCCCAGG TGCTCCCAGGTTCTCCCAGG

	12607	TGAGCTCTGCGGACTGCG
	12608	CTGTTTCAGGTGGCCGC
	12609	GGATTTACTCTTCTCTG
5	12610 12611	GGGTCTGGCTTGAGCTCTG GCCCTAGTCCTCATCTGC
•	12612	TGCCAGCCTGGCTGCCTTCC
	12613	GCGACCCAGTGCCCTCTACT
	12614 12615	GTCTGCTGCAGAAGCTGTGG
10	12616	GGCTCGGCTTCTAGTTCAG GTCATTCCCTTGATGGCTG
	12617	TCGATTTCCCAAGGCCGCCC
	12618	TTCATGTCCTCTGTTGCTCC
	12619 12620	GGCATGGGTGTTTGGCAGC GTGCCTTATGCCTGCTGTCT
15	12621	TTCTGTTCCACTCTCCTC
	12622	AGAAACTITATTTATACAA
	12623 12624	GGCTCCACTCACTCCAG
	12625	GGCTCCACTCACTCCA GCTGGGATTATAGGCATGAG
20	12626	CCTGATCTCAAGTGATCTGC
	12627	ACAGGAACAGGAGCCCAGA
	12628 12629	GCAGCAGGACCAGGCAGCTC GGCTCCTGCAAGACCTTCAT
	12630	TGTAGTCGGAGACGCAGGTG
25	12631	CTCGCAAGTAGAGATGCTCA
	12632	GTGGGACCATTCATCTTCCA
	12633 12634	AACCAGCGTGTGGGCTTCGG AGAGCAGAAAAACCAGCTGG
	12635	GATACACGTGTGGGCTTCGG
30	12636	ACTGACCACGTCATCCATGA
	12637 12638	TCCAGTGTATAGTTATCCGC GAAGGAGCCCTTCCACAGCA
	12639	TTCACATGCTCGCTGGGCTT
	12640	GACATTGGTGTGAACTGTCA
35	12641	GTCAGCAGCAGAGTGTCGGA
	12642 12643	ATTATACAGGTAATTGTCAG TTGACTGCATAGGTGAGATG
	12644	ATAGATTCTGAAATCTGCCG
	12645	GGTTCTAGGTAGGTCACGTT
40	12646	TGGCTGCGATGCGGAGGGAG
	12647 12648	CCCTGTAGGAAATCCCAGAC TGGCTGCGATGCGGAGGGAG
	12649	TATAGCCCTGAGCCCAGGCC
15	12650	CAGGATGACAATGCAGGAAA
45	12651 12652	TAGCACAACAGGCAGACGGC TAATCTTGGTGATGCTGAAC
	12653	CTGATCCCACGTAAGAAAGA
	12654	TTATTATAGCCACGAGGCGG
50	12655	ACAATICTTCCAGTGTGGGC
30	12656 12657	CGGGACCGCTTCTCCCACTG ACTTGGCTGGTTCCTGGCCT
	12658	TCATCCCTTTTCATGTTGTG
	12659	GCCCTGGAAAGGCATCTCTT
55	12660 12661	GCTCTCTGGCCAGAGGACTG ACACATCGCACCACGCTGAT
55	12662	CTCCTCCTCACACTCCA
	12663	CAGGCGATGCACAGAAGCTC
	12664	ATGCCCTCCCTTCCCTCCTG
60	12665 12666	TCTCTGTTAGCCGGGCCACA GAGCAGGTCCAGGAACAGGC
	12667	AGGTGGAAGAAGGCATGACT
	12668	GGAACTCATCCCAGGGCATG
	12669 12670	CTCCTTGGGCCCTGCACTTG GCTCCAGGTGGAGAGGCTGC
65	12671	CGGGCTGGCAGGAGGACTTG
	12672	AGGCTTGCCTGCGATGACGA
	12673	ACGGTGACTGGCTCAGGGAG
	12674 12675	TGGACCCAGCTCTCTGGGAC TGTCTGAAGCTGCGGTAAGC
70	12676	ACAGTGGTTGGCTCAGAGAG
	12677	GGACATTTCGGCGGAGGATC
	12678	CAAACTCCTGATAGCCACTG ACCGCACTGGCCTGGGTGCC
	12679 12680	GGCCTTGTAACCAGCCTCTC
75	12681	CTGGCAAGCAGGCTTGAGAA

	12682 12683	GAATGAGGTCTTGGAAAGGC
	12684	TGTCCAGTCCAAAGGTGAAC CTTGGGAGATGTGAGCTCTG
	12685	GGCTCCAGACCCAGGTGCTC
5	12686	GGCTTTGGCATGTCCTCTAC
	12687	GGGTCTGTGGCCTGCTCCTG
	12688	TGCCCAGGCTGTCCACAAGG
	12689	GGCTGAGTAGACAATGCCAC
10	12690 12691	CCGCACAGGTGGCAGGTAAG TCCTCCTGGCCATGACACTG
10	12692	GCCACAGCAAGGACTGGCCA
	12693	GACCTGTCTCCACAGCAGCA
	12694	CAGACTGGCCTCCAGTGGAA
1.5	12695	GGTGCCAGGGAGGCCGGACA
15	12696 12697	GGGCAGGÀTGGAAGGATGAT GTCCCACGGAGACAAAGTTC
	12698	AGAGACCCTCATGTATGTGG
	12699	CAGGCATGGATAAGCCCTAG
	12700	TTCCAGGAGGTGGCATTTCC
20	12701	GCCAATCACCTTCATACCAT
	12702	TCCAGTCTCTGCAGCCCAGT
	12703 12704	GTGGCGAGCCCAGCCCAATG GCCCTCTACTCTCATGGGAT
	12704	GAGGTGCCCAAGGGCCTCAG
25	12706	CAACAACTCGTTCACAAGTC
	12707	GAAGCTGTGGAGGAGCAGC
	12708	AACAGGGACAGTCTGCTGCA
	12709	AACATGCCTTGGGCAGTTAC GGCCATGATCTGGTGGGCAA
30	12710 12711	GCCATGATCTGGTGGGCAA
50	12712	CCTGAAGTTCAATTTCTCAT
	12713	TCTAGGCAATGACCACCCTC
	12714	CGATTTCCCAAGGCCGCCCA
25	12715	ACAGCCGGGATTCTGCCTCC
35	12716 12717	TGCTTTAGTCATAGCAATTT GTTTGGCAGCAAATTGTCCC
	12718	TGGCTGAGCATATTTATTCT
	12719	GCCCACAGGGTGGCTGAGCA
	12720	CCTGCTGTCTGGATTGCCCG
40	12721	GCCAACATGCAGGGTAACTG
	12722 12723	CCCTAGCACCTGAGGTCTGG CAACCCAAGGTTCCCGCCTT
	12724	ACACACAGACGAGCATTACT
	IL5R	
45	12725	CCATGCGATGAGAAGCAGCGG
	12726	GGTGGCCATGCGATGAGAAGC
	12727 12728	CAATGTGCCTGGCCTGAG TCAGGCACAGGACCAATGCT
	12729	ACCAATGCTCAATGTGCC
50	12730	TAGCGTCAGGCACAGGACC
	12731	TCTAGCATAGCGTCAGGCAC
	12732	CAGCATCTAGCATAGCGTC
	12733 12734	CTATGCTCGTGGCTGCAAC CGTGTCTATGCTCGTGGCT
55	12735	CGTGTCTATGCTCGTGGC
	12736	GTGTCTGTCGTGTCTATGCTC
	12737	GGCGAGGACCGTGTCTGTCG
	12738	GGCGAGGACCGTGTCTGT
60	12739	CAGAAGATGGCGAGGACCGTG
UU	12740 12741	CAGAAGATGGCGAGGACCG CTCAACAGAAGATGGCGAGG
	12742	CCAGTACTCAACAGAAGATGG
	12743	TTCCGACCAGTACTCAACAG
	12744	CTCTTGTTCCGACCAGTACTC
65	12745	TCCTCTTGTTCCGACCAG
	12746 12747	GACGATCCTCTTGTTCCG CTACAGACGATCCTCTTG
	12748	GCCTGTCTACAGACGATCC
	12749	CTGTAGCCTGTCTACAGACG
70	12750	AATCTGTAGCCTGTCTAC
	12751	GATGAGTGAACATGACAGG
	12752	TTACTATGAGGATTTAA GCCACGATGATCATATCCTT
	12753 12754	GCCACGATGATCATATCCTT
75	12755	GCGCCACGATGATCATAT

	12756	ATGCGCCACGATGATCAT
	12757	TGCGCCACGATGATCATA
	12758	ATACATGCGCCACGATG
5	12759 12760	GAGTAATACATGCGCCAC GGATGAGTAATACATGCG
,	12761	TTGCAGTATCTCAGTGGC
	12762	GCTTGCAGTATCTCAGTG
	12763	GTCAGCTTGCAGTATCTC
10	12764 12765	GGAAGTAAGTCAGCTTGCAG TTGACAGGTGGGAGAAGTGA
10	12766	CCAGTAACTTTAATGGTG
	12767	GATCAGGATTTGGTTTCC
	12768	GCTCTTGATCAGGATTTGG
15	12769 12770	CCTTTGCTCTTGATCAGG GATTAACATTCCTTTGCTC
10	12771	CTGGTTTCATAGTCATCTTC
	12772	GGTTACACATTTGCTTTCAG
	12773 12774	TGTGGAGGATGGTTACAC GGTTACACATTTGCTTTCAG
20	12775	GTCGTTCTGCAGGATGGTCCG
	12776	GTGGTCGTTCTGCAGGATG
	12777	AGTGAGTGGTCGTTCTGC
	12778 12779	GCCAGTAGTGAGTGGTCGT GCTGGCCAGTAGTGAGTG
25	12780	GCCCAGCTGCTGGCCAGTAGT
	12781	GAAGCCCAGCTGCTGGCCA
	12782 12783	CAGCAGAAGCCCAGCTGC
	12783	GAAGTTCAGCAGAAGCCCA GGCATGAAGTTCAGCAGAAG
30	12785	TTCCAGGAGACCCTGGTG
	12786	TGAGGTTCCAGGAGACCC
	12787 12788	CACAATTGAGGTTCCAGG GTGTTTGTGGTGCAAGTTA
	12789	TGTCTTCTGTAGTGTTTGTGG
35	12790	GCCAGGTGCAGTGAAGGG
	12791 12792	ACAAGCCAGGTGCAGGTGA
	12792	TGCCAACAAGCCAGGTGC ATCTGTGCCAACAAGCCA
	12794	GGCATCTGTGCCAACAAGCC
40	12795	CCAAGAGCCATACCTATAG
	12796 12797	CAGTCCAAGAGCCATACC GCATTCTTCAGTCCAAGAGCC
	12798	CTTGGCATTCTTCAGTCC
4.5	12799	TGCTGTATTCTTGGCATTCTT
45	12800 12801	CTTTGCTGTATTCTTGGC CTCCCCAGTGTGTCTTTGCTG
	12802	TTCTCCCCAGTGTGTCTT
	12803	GATATTTCTCCCCAGTGT
£0	12804	CATGCGATATTTCTCCCC
50	12805 12806	CCAGCATGCGATATTTCT GCCAGTCACGCCCTTTGCTG
	12807	GCCAGTCACGCCCTTTGC
	12808	AGCCGTTAACAAGCACCG
55	12809 12810	GCTGGAGCCGTTAACAAG TGCTTGCTGGAGCCGTTA
33	12811	GCAGAGTGCTTGCTGGAGC
	12812	GATAGCAGAGTGCTTGCT
	12813	GGGCCTGATAGCAGAGTGC
60	12814 12815	ATCAATGGCGTGAAGGGC ATTTGATCAATGGCGTGA
	12816	TGTGACATTCAGTGGAGG
	12817	TCTCTGCTGTGACATTCAGT
	12818 12819	TCAATCTCTGCTGTGACA GTTCCTTCAATCTCTGCTG
65	12820	CGAGTTCCTTCAATCTCTGCTG
-	12821	GAGAGACGAGTTCCTTCA
	12822	GGATAGAGAGAGAGAGAGA
	12823 12824	CTCCCATTGGATAGAGAGACG GTTTCTCCCATTGGATAGAG
70	12825	CACTGGTTTCTCCCATTGG
	12826	GAATGCATTGGTCATCAA
	12827 12828	GAGATGAATGCATTGGTC CTTGAACATCGTACTTAG
	12828	GCTCTCACTTGAACATCGTAC
75	12830	CTGCTCTCACTTGAACATCG

		amaamaama. amma a
	12831 12832	CTGCTGCTCTCACTTGAAC TCTCTGCACATGGAGCTC
	12833	CTGCCTCTCTGCACATGG
	12834	GAGCCCTGCCTCTCTGCAC
5	12835	CTCCAGAGCCCTGCCTCTCT
	12836	CTCACTCCAGAGCCCTGCC
	12837 12838	CTCCACTCACTCCAGAGCC
	12839	TGGCTCCACTCACTCCAGAG GGTTGGCTCCACTCACTCCAG
10	12840	TGTTCATCATTTCCCACATA
	12841	AAGGGCTTGTGTTCATCA
	12842	AACCACTCTCTCAAGGGCT
	12843 12844	CAGTAACACTAATACCGT CAGATGGTTGCCATAATCAC
15	12845	TGAAGCAGATGGTTGCCAT
	12846	CTCATAGTTAGTGGTTAC
	12847	GCTTTCTCATAGTTAGTG
	12848	GGACCCAGCTTTCTCATAG
20	12849 12850	GACTTCAATTTCCGTCTC CAGATGACTTCAATTTCCG
20	12851	CAACTCCAGGCTTCTCTATA
	12852	CAACTCCAGGCTTCTCTAT
	12853	GGGTCTCAACTCCAGGCTTC
25	12854	CCAGGGTCTCAACTCCAGGC
25	12855 12856	ATCCTCCAGGGTCTCAAC CACAGAATCCTCCAGGGT
	12857	GGATGCCAAAGTGACAGTCA
	12858	GGATGCCAAAGTGACAGTC
	12859	TCATCAGAGGATGCCAAAGT
30	12860	GTGTGAGTTCATCAGAGGAT
	12861 12862	GGCATGTGTGAGTTCATCAG CTGAGGCATGTGTGAGTTC
	12863	GAGCCAGCATCCCTGTTCTT
	12864	GAGCCAGCATCCCCTGTTC
35	12865	AGCCAAGAGCCAGCATCCCTGT
	12866	GCCAAGAGCCAGCATCCCTGT
	12867 12868	TAGCCAAGAGCCAGCATCCC CCTCTTAGCCAAGAGCCAGC
	12869	ACACCTCTTAGCCAAGAGCC
40	12870	TCTGAACACCTCTTAGCCAAG
	12871	TTCTGAACACCTCTTAGC
	12872 12873	CTGGGTGTATTGCTTCGCAG
	12874	GGATGAAGCATCCATACTTT TGAGGCGATTTGGATGAAGC
45	12875	GTCAACTTCCCTGCTGTAGG
	12876	TGCTTGGATGAGTCAACTTC
	12877	GTGCTACCCTGTACGGCATG
	12878 12879	TTGGCAGGTGAGGAGGTGCT GTCTGAGGTGAGTCAAGC
50	12880	ACGCACAGCCAGAAGTA
	12881	ACAGCCAAACGGCACAGCCAG
	12882	GTGCTACAATTGGCAGCTT
	12883	TGGTTCACTCCAGGCTGATG
55	12884 CCR3	CAGTCTTGAATCCAAGTTC
-	12885	TTTTAGAGGTGAGTGTGGAA
	12886	GAGGTGAGTGTGGAAGGCTT
	12887	AATGTGTTTGCTTCATCTCC
60	12888	GTTTGCTTCATCTCCTTGGT CTTCATCTCCTTGGTCCTTC
00	12889 12890	TCTCCTTGGTCCTTCCTCTT
	12891	TTGGTCCTTCCTCTTTAGGC
	12892	CCTTCCTCTTTAGGCAATTT
15	12893	CTCTTTAGGCAATTTTCTGC
65	12894 12895	TAGGCAATTTTCTGCATCTG AATTTTCTGCATCTGACCTA
	12895	CAATAGAGAGTTCCGGCTCT
	12897	GAGAGTTCCGGCTCTGCTGT
 -	12898	TTCCGGCTCTGCTGTGGATG
70	12899	GCTCTGCTGTGGATGGAGAG
	12900	GCTGTGGATGGAGAGACAGA GGATGGAGAGACAGAGCTGG
	12901 12902	GAGAGACAGAGCTGGTTCTT
	12903	ACAGAGCTGGTTCTTTCCAG
75	12904	GCTGGTTCTTTCCAGCTTCT

	12905	TTCTTTCCAGCTTCTCACTA
	12906	TCCAGCTTCTCACTAGGAAG
	12907	CTTCTCACTAGGAAGGAATG
5	12908 12909	CACTAGGAAGGAATGGGATG
J	12909	GGAAGGAATGGGATGTATCT GAATGGGATGTATCTGCCCA
	12911	GGATGTATCTGCCCAGGTGC
	12912	TATCTGCCCAGGTGCATGAG
	12913	GCCCAGGTGCATGAGCAAGT
10	12914	GGTGCATGAGCAAGTGCCTG
	12915	ATGAGCAAGTGCCTGTGGAA
	12916	CAAGTGCCTGTGGAAGAAGT
	12917	GCCTGTGGAAGAAGTGGCGC
1.5	12918	TGGAAGAAGTGGCGCAGGTA
15	12919 12920	GAAGTGGCGCAGGTACTTCC
	12920	GGCGCAGGTACTTCCGGAAC AGGTACTTCCGGAACCTCTC
	12921	CTTCCGGAACCTCTCCAA
	12923	GCGTAGATCACCGGGTTCAT
20	12924	GATCACCGGGTTCATGCAGC
	12925	CCGGGTTCATGCAGCAGTGG
	12926	TTCATGCAGCAGTGGGAGTA
	12927	GCAGCAGTGGGAGTAGGCGA
	12928	AGTGGGAGTAGGCGATCACC
25	12929	GAGTAGGCGATCACCTCTGT
	12930	GGCGATCACCTCTGTCACCA
	12931 12932	TCACCTCTGTCACCAGCATG
	12932	TCTGTCACCAGCATGACCAG CACCAGCATGACCAGGTCCA
30	12934	GCATGACCAGGTCCAGATGC
-	12935	ACCAGGTCCAGATGCTTGCT
	12936	GTCCAGATGCTTGCTCCGCT
	12937	GATGCTTGCTCCGCTCACAG
	12938	TTGCTCCGCTCACAGTCATT
35	12939	CCGCTCACAGTCATTTCCAA
	12940	ATGGATTGATAGGAAGAGAG
	12941 12942	TTGATAGGAAGAGAGAAGGA AGGAAGAGAGAAGGATAGCC
	12942	GAGAGAAGATAGCC
40	12944	AAGGATAGCCACATTGTAGG
	12945	TAGCCACATTGTAGGGTGTC
	12946	ACATTGTAGGGTGTCCAGAA
	12947	GAGCCGGATGGCCTTGTACT
4.5	12948	GGATGGCCTTGTACTTTTT
45	12949	GCCTTGTACTTTTTTTACT
	12950 12951	ACCTCAGCAGCGTTTTGATG
	12951	AGCAGCGTTTTGATGATTCC CGTTTTGATGATTCCTGTGT
	12953	TGATGATTCCTGTGTAGCAG
50	12954	ATTCCTGTGTAGCAGATGGC
	12955	CGAGCAGAGGGAGAACGAGA
	12956	AGGTAGATGNTGGTCAT
	12957	GGTCNGAAATGGCCAGGTT
<i></i>	12958	AGGAAGAGCAGGTCNGAAAT
55	12959 12960	GTNATAAAACCCAGAGAGGA
	12961	CCTGTGTNATAAAACCCAGA ACAAGCCTGTGTNATAAAAC
	12962	GCTGTACAAGCCTGTGTNAT
	12963	CTCGCTGTACAAGCCTGTGT
60	12964	AAGATCTCGCTGTACAAGCC
	12965	AAAGAGGCTTGTACAGCGAG
	12966	ATGAAAAAGATCTCGCTGT
	12967	AGGATNATGAAAAAGATCTC
65	12968	CAGCAGGATNATGAAAAAGC
05	12969 12970	ATCGTCAGCAGGATNATGAA GTCAATCGTCAGCAGGATNA
	12970	ACCTGTCAATCGTCAGCAGG
	12972	AGGTACCTGTCAATCGTCAG
	12973	GGCCAGGTACCTGTCAATCG
70	12974	CNATCGATTGACAGGTACCT
	12975	TGGACNATCGATTGACAGGT
	12976	GTGATGACACCAAAAGTGAC
	12977	GCTGGTGATGACACCAAAAG
75	12977 12978 12979	GCTGGTGATGACACCAAAAG GATGCTGGTGATGACACCA CTGTACAAGCCTGTGNGA

	12980	ATNCCTGTGTAGCAGATG
	12981	GTAGGCGATCACCTCNGTCAC
	12982	AAGGCGTAGATCACNGGGTT
5	12983 12984	CCAACNAAGGCGTAGATCAC GTTGGAGAGAGGTTCCGGAA
J	12985	GAGAGAGGTTCCGGAAGTAC
	12986	CGCAGGTACTTCCGGAACCTC
	12987	TGNCGCAGGTACTTCCGGAA
10	12988 12989	AGAGGGAGAACGAGACAGAA GAGAACGAGACAGAAGATGG
	12990	CGAGACAGAAGATGGTCATT
	12991	CAGAAGATGGTCATTCTCAG
	12992 12993	GATGGTCATTCTCAGAGTGT AACTCTTCAGTCTCATAGAA
15	12994	ATTCAGGAAGAGCTGCTAGC
	12995	CAGGCCCCAGGTGACGATGC
	12996 12997	CCCAGGTGACGATGCTGGTG GTGACGATGCTGGTGATGAC
	12998	AAGTGACAGTCCGGGCTCGA
20	12999	ACAGTCCGGGCTCGAAGGGC
	13000 13001	CAGCATGGACAATGGCCAGG
	13001	TGGACAATGGCCAGGTACCT AATGGCCAGGTACCTGTCGA
	13003	CCAGGTACCTGTCGATTGTC
25	13004	TACCTGTCGATTGTCAGCAG
	13005 13006	GTCGATTGTCAGCAGGATTA AAGATCTCGCTGTACAAGCC
	13007	CTCGCTGTACAAGCCTGTGT
30	13008	AACCCTGAGAGGAGCTTACA
30	13009 13010	TGAGAGGAGCTTACACATGC GGAGCTTACACATGCCATGG
	13011	AACCCAGTTATGCCCCCTGA
	13012	AGTTATGCCCCCTGACATAG
35	13013 13014	TGCCCCTGACATAGTGGAT CCTGACATAGTGGATCCAGA
••	13015	CATAGTGGATCCAGAATGGA
	13016	TGGATCCAGAATGGAAGGGT
	13017 13018	CCAGAATGGAAGGGTGACGA ATGGAAGGGTGACGAGGAAG
40	13019	AGGGTGACGAGGAAGAGCAG
	13020	GACGAGGAAGAGCAGGTCCG
	13021 13022	GCCAGGTTGAGCAGGTAGAT GTTGAGCAGGTAGATGTTGG
	13023	GCAGGTAGATGTTGGTCATA
45	13024	ATTCGGAGCCTCCTGTATTT
	13025 13026	GAGCCTCCTGTATTTTATGA TCCTGTATTTTATGAGGATC
	13027	TATTTATGAGGATCATCAC
50	13028	TATGAGGATCATCACCACCA
50	13029 13030	GGATCATCACCACCACCACA ATCACCACCACCACATTGCC
	13031	CACCACCACATTGCCCAAGA
	13032	CCACATTGCCCAAGAGGCCC
55	13033 13034	TTGCCCAAGAGGCCCACAGT CAAGAGGCCCACAGTGAACA
	13035	GGCCCACAGTGAACACCAGG
	13036	ACAGTGAACACCAGGGAGTA
	13037 13038	GAACACCAGGGAGTACAGCG CTGGGCCATCAGTGCTCTGG
60	13039	CCATCAGTGCTCTGGTATCA
	13040	AGTGCTCTGGTATCAGCTTT
	13041 13042	TCTGGTATCAGCTTTTTCAC TATCAGCTTTTTCACAGAGC
	13042	GCTTTTTCACAGAGCAGGCC
65	13044	TTCACAGAGCAGGCCCACGT
	13045	AGAGCACGTCATCATAGTA
	13046 13047	AGGCCCACGTCATCATAGTA CACGTCATCATAGTAGGATG
	13048	CATCATAGTAGGATGTGGTA
70	13049	GTATCTAGTGAGGTTGTCAT
	13050 13051	TAGTGAGGTTGTCATTTCAC AGGTTGTCATTTCACTTCTC
	13052	GTCATTTCACTTCTCCCTGT
75	13053	TTCACTTCTCCCTGTGATA
75	13054	TTCTCCCTGTGATAGAAGAA

	13055	TTCACTTCTCCCTGTGATAG
	13056	TTCTCCCTGTGATAGAAGAA
	eotaxin	
	13057	GGTGGTGGTTTCTGGGTTGGT
5	13058	GGTGGTGGTTTCTGGGTTG
	13059	TGTTGGAGGCTGAAGGTGTG
	13060	CTGCGGAGACCTTCATGTTGG
	13061	TGCTGCGGAGACCTTCATG
	13062	GTGCTGCGGAGACCTTCATGT
10	13063	GGGCTGAAGGCAGCTGCT
- •	13064	CTGGCCCAGCGAGCCCCTGG
	13065	GCAGGTGGTTGGGACAGAAG
	13066	TCTTCCTATTGGCCAGGTT
	13067	CCTGTAGCTCTCTAGTCGCTG
15	13068	GGGACATTTGCCACTGGTG
15	13069	ATCACAGCTTTCTGGGGAC
	13070	GGCCAGTTTGGTCTTGAAG
	13070	CCTGCACCCACTTCTTCTTG
	13071	TTGGTCCAGATACTTCATGG
20	13072	TATTTATGGCTTTGGAGTTG
20	13073	TCAGGCTCTGGTTTGGTTTC
	13075	CCCATGCCCTTTGGACTG
	13076 13077	CTGATATTCATGGAGGAT
25		TTGCCCACACGTGACAGGGG
25	13078	TGATCATCTTTGCCAGGACC
	13079	GGGTTCACAAGAACAATGAC
	13080	CTTCCATTTAATGAGTCACAC
	13081	CCCCTCAGCTCAGTGTGG
20	13082	GGGCTTACCTGGCCAGC
30	13083	TGGTTACCTTACCTTTCCTG
	13084	CTGACCTAGTAGCCTGGAGG
	13085	GAATTTGCAGTGAGTCTGTA
	13086	GAGGCATTTCTTGTCCACCC
25	13087	GGCTCTTCCAGTGACTGGAT
35	13088	GACTCGGGAGCTTTCTAGTT
	13089	CCAGCGGCCCTCTTGAATGT
	13090	CACTGTAAGGATAGCTGGGT
	13091	CCATGCCCACAGTAAGACAG
40	13092	CAGATTTTCCTTCTCTCCCC
40	13093	TCTCTTAGCCACTGTCTCTG
	13094	TCCCCTGGGACCTCGTTCTT
	13095	TCTCCTAGATAACTTTCCC
	13096	CAGAGTATGGGAAAATGAGT
15	13097	CTGGCTCAGTGGGACCGAT
45	13098	TGTTTGTTACCATGCTATGC
	13099	TGCAGAAGCCTGAGCCCATA
	13100	CTCCATCAGTCTAGAATCCT
	13101	TCCATCAATGTTCCCCCAC
50	13102	CCTGAGAGCTTTCTTCTGCT
50	13103	TGAGCCACAGTGCATTGCCT
	13104	TCTTGGCCACTTTTGTTTGG
	13105	GACTTGCATTTCTTGGCCAC
	13106	TCTCCATCCTCTGTTTTGAG
	13107	CGTGGCCATGTGATGGTC
55	13108	CATTACTGTAGAGTGTATGG
	13109	TTGGAGGCATTAATTAGTTT
	13110	GCATCCTCCCTGTGCACTG
	13111	GGATGCTGTCCTGTCTTC
	13112	GGTGGAGGGAGAATCCCTCT
60	13113	GGTGGTTGGGACAGAAGCTG
	13114	GGGTATCTTCCTATTGGCC
	13115	TGATTCTCCTGTAGCTCTCT
	13116	CACAGTTCTTGACTCTGTGC
	13117	GGGAGCTGGGAGTGAACACT
65	13118	CCATCTTTGCTCTTGACTTG
	13119	CTTGGGTTAGTTGCTGCTCT
	13120	ACCCACTTCTTCTTGGGGTC
	13121	TGGTCCAGATACTTCATGG
_	13122	CTCAGGCTCTGGTTTGGTTTC
70	13123	CCCATGCCCTTTGGACTG
	13124	TAACTGATATTCATGGAGG
	13125	TTGCCCACACGTGACAGGG
	13126	GATTCCAGGGAGGAAGAG
	13127	TACTGATCATCTTTGCCAGG
75	13128	TGAGTCACACTTTGGGTTC

	RANTES	•
	13129	ATTITTCATGTTTGCCAGTA
	13130 13131	GAGTGCAGTGTTCCTCCCTT
5	13131	CAGTGTTCCTCCCTTCCTTG
ي	13133	CCCTTCCTTGCCTCTAGAGG
	13134	CCTTGCCTCTAGAGGCATGC
	13135	CCTCTAGAGGCATGCTGACT
10	13136	AGCAGCGCCTCAGAAGCTCT
10	13137 13138	CGCCTCAGAAGCTCTTCTAG
	13139	CAGAAGCTCTTCTAGGCTTT GCTCTTCTAGGCTTTAGTTG
	13140	AGCCTCCACCTCCTGGGTTC
	13141	CCTGCCTTAGCCTCCCGAGT
15	13142	CTTAGCCTCCCGAGTAGCTG
	13143 13144	CCTCCCGAGTAGCTGGGATT
	13144	GGATTACAGGCGTGGGCCAC ACAGGCGTGGGCCACCACGC
	13146	CGTGGGCCACCACGCGGCTA
20	13147	GCAGTGGCGCGATCTCGGCT
	13148	CAAGCTCCGCTCCCGGGTTC
	13149	TCCGCTCCCGGGTTCACGCC
	13150 13151	CTCAGCCTCCCGAGTAGCTG CCTCCCGAGTAGCTGGGACT
25	13152	CGAGTAGCTGGGACTACAGG
	13153	AGCTGGGACTACAGGCGCCC
	13154	GGACTACAGGCGCCCGCTAC
	13155	CGCCGCTACCACGCCCGGC
30	13156 13157	TTTTGTATTTTTAGTACACA
50	13158	TTTCATCATGTTGGCCAGGC TGTCTCGAACTCCTGACCTC
	13159	CGAACTCCTGACCTCAAGTG
	13160	ACCTCAAGTGATCCACCCAC
25	13161	AAGTGATCCACCCACCTTGG
35	13162	ATCCACCCACCTTGGCCTCC
	13163 13164	TGCTGGGATTACAAGGCTGA GGATTACAAGGCTGAGCCAC
	13165	ACAAGGCTGAGCCACCACGT
	13166	GCCACCACGTCCAGCCTGGG
40	13167	TGCTGCTCGTCGTCAGA
	13168 13169	CTCGTCGTGGTCAGAATCTG TCAGAATCTGGGCCCTTCAA
	13170	ATCTGGGCCCTTCAAGGAGC
	13171	GGCCCTTCAAGGAGCGGGTG
45	13172	GGGAAGCCTCCCAAGCTAGG
	13173	GGCAGATGCAGGAGCGCAGA
	13174 13175	ATGCAGGAGCGCAGAGGGCA TCTCCATCCTAGCTCATCTC
	13175	AGTTGATGTACTCCCGAACC
50	13177	GAACCCATTTCTTCTCTGGG
	13178	CATTTCTTCTCTGGGTTGGC
	13179	CTTCTCTGGGTTGGCACACA
	13180	TTGGCACACACTTGGCGGTT
55	13181 13182	ACACACTTGGCGGTTCTTTC CTTGGCGGTTCTTTCGGGTG
	13183	CTGCTGGGTTGGAGCACTTG
	13184	GGGTTGGAGCACTTGCCACT
	13185	TACTCCTTGATGTGGGCACG
60	13186	GCTGAGCCACCACGTCCAGC
00	13187 13188	CTGGGTTGGCACACACTTGG TCCTGACCTCAAGTGATCCA
	13189	CGTGGTCAGAATCTGGGCCC
	13190	ATTTTCCTGCCTTAGCCTCC
	13191	GCCTCCCAAGCTAGGACAAG
65	13192	CCAAGCTAGGACAAGAGCAA
	13193	CTAGGACAAGAGCAAGCAGA TTCAGGTTCAAGGACTCTCC
	13194 13195	GTTCAAGGACTCTCCATCCT
	13196	AGGACTCTCCATCCTAGCTC
70	13197	ACAGGCGCCCGCTACCACGC
	13198	ATGTACTCCCGAACCCATTT
	13199	CTCCCGAACCCATTTCTTCT TCATGTTGGCCAGGCTGTCT
	13200 13201	TTGGCCAGGCTGTCTCGAAC
75	13202	CAGGCTGTCTCGAACTCCTG

	13203	TCCCGGGTTCACGCCATTCT
	13204	GGTTCACGCCATTCTCCTGC
	13205	ACGCCATTCTCCTGCCTCAG
	13206	ATTCTCCTGCCTCAGCCTCC
5	13207	CCTGCCTCAGCCTCCCGAGT
	13208	GGGCAGTGGGCGGGCAATGT
	13209	GTGGGCGGCAATGTAGGCA
	13210	AAGCAGCAGGGTGTGGTGTC
10	13211 13212	GCAGGGTGTGGTGTCCGAGG GTGTGGTGTCCGAGGAATAT
10	13212	GGAGCGCAGAGGGCAGTAGC
	13214	GCAGAGGCAGTAGCAATGA
	13215	GGGCAGTAGCAATGAGGATG
	13216	GTAGCAATGAGGATGACAGC
15	13217	AATGAGGATGACAGCGAGGC
	13218	GGATGACAGCGAGGCGTGCC
	13219	ACAGCGAGGCGTGCCGCGGA
	13220	GAGGCGTGCCGCGGAGACCT
20	13221	GTGCCGCGGAGACCTTCATG
20	13222	GCGGAGACCTTCATGGTACC
	13223 13224	GACCTTCATGGTACCTGTGG TCATGGTACCTGTGGAGAGG
	13224	GTACCTGTGGAGAGGCTGTC
	13226	TGTGGAGAGGCTGTCGGAGG
25	13227	AGAGGCATGCTGACTTCCTT
	13228	CATGCTGACTTCCTTG
	13229	TGACTTCCTTCCTTGTCACA
	13230	TCCTTCCTTGTCACAGAGCC
	13231	CCTTGTCACAGAGCCCTTGC
30	13232	CCAGAGCTCAGAACCTAGAG
	13233	GCTCAGAACCTAGAGACTTC
	13234	GAACCTAGAGACTTCCTTTT
	13235 13236	TAGAGACTTCCTTTTGACAA GGGAAGCTTTTTGTTGTTGT
35	13237	CCTTTTCTTCTTCTTCTTC
55	13238	TTGTTGTTGTTGTGACG
	13239	GTTGTTGTTGACGGAGTC
	13240	TGTTGTGACGGAGTCTCACT
	13241	TGACGGAGTCTCACTTTGTC
40	13242	GAGTCTCACTTTGTCACCCA
	13243	TCACTTTGTCACCCAGGCTG
	13244	TTGTCACCCAGGCTGGAGTG
	13245 13246	ACCCAGGCTGGAGTGAAGTG GGCTGGAGTGAAGTGGCACA
45	13240	GAGTGAAGTGGCACAATCTC
73	13248	AAGTGGCACAATCTCAGCTC
	13249	CGAGTAGCTGGGATTACAGG
	13250	AGCTGGGATTACAGGCGTGG
	13251	GAGACGGAGTCTCGCTCTGT
50	13252	GGAGTCTCGCTCTGTCGCCC
	13253	CTCGCTCTGTCGCCCAGGCT
	13254	TCTGTCGCCCAGGCTGGAGT
	13255	CGCCCAGGCTGGAGTGCAGT AGGCTGGAGTGCAGTGGCGC
55	13256 13257	GGAGTGCAGTGCCGCGATCT
55	MCP4	donordenordecedarer
	13258	TCTGGCTGAGCAAGTCCCTG
	13259	TGCATTCATCTTTCCACAAT
	13260	AGAGCTCTCCTTCCTACATT
60	13261	TTCCTACATTGCGGCATCCC
	13262	ACATTGCGGCATCCCTTCAT
	13263	GCGGCATCCCTTCATGTCCA
	13264	ATCCCTTCATGTCCATGACT
65	13265 13266	TTCATGTCCATGACTCCCAC GTCCATGACTCCCACAGGCA
05	13267	TGACTCCCACAGGCATGCTC
	13268	CCCACAGGCATGCTCTCAAC
	13269	AGGCATGCTCTCAACCCCTG
	13270	TGCTCTCAACCCCTGGGAAC
70	13271	TGCCAGCAGCTCATAGTGGA
	13272	ATAGAAGAGGAGGCCAGAGG
	13273	AGAGGAGGCCAGAGGAGAAT
	13274	AGTCATTTCACGTACTCCAG
75	13275	TTTCACGTACTCCAGCTTGA
75	13276	CGTACTCCAGCTTGATTTCA

	13277	ATTCTGGACCCACTTCTCCT
	13278	GGACCCACTTCTCCTTTGGG
	13279	GGTGATCACATAGCTCTTCA
_	13280	TCACATAGCTCTTCAGCCTC
5	13281 13282	TAGCTCTTCAGCCTCTGCAA
	13282	CTTCAGCCTCTGCAAGGAGA GCCTCTGCAAGGAGATCTTC
	13284	ACCTGCTGGTGGTGATCACA
	13285	CTGGTGGTGATCACATAGCT
10	13286	TCCAGCTTGATTTCAGTAGG
	13287	GGTAGCAGAGTTCAAGTCTT
	13288	CAGAGTTCAAGTCTTCAGGG
	13289	TTCAAGTCTTCAGGGTGTGA
15	13290 13291	GTCTTCAGGGTGTGAGCTTC CAGGGTGTGAGCTTCCGGCC
1.5	13292	TGTGAGCTTCCGGCCCAGGT
	13293	GCTTCCGGCCCAGGTGTTTC
	13294	CGGCCCAGGTGTTTCATATA
	13295	GCAGCTCATAGTGGAAGGGA
20	13296	GCTTAGAGACAGCAACCTAC
	13297 13298	GAGACAGCAACCTACTTGCT
	13298	AGCAACCTACTTGCTCAAGG CCTACTTGCTCAAGGCCTTG
	13300	TTGCTCAAGGCCTTGCTATA
25	13301	ACATAGTACATTTTGAATCA
	13302	CCGAATGCATCCTATTTGAA
	13303	AATTATGGTAGAAGTATTCC
	13304	TGGTTCTGAAGATGACAGCC
30	13305 13306	CTGAAGATGACAGCCTTCTG
50	13306	GGGACACCTGCTGGTGGTGA TCAACCCCTGGGAACCGAAT
	13308	TCTCCTTCCTACATTGCGGC
	13309	AATGTCAGCAGTCCTACTAT
	13310	CAGCAGTCCTACTATTGCAT
35	13311	GTCCTACTATTGCATTCATC
	13312	ACTATTGCATTCATCTTTCC
	13313 13314	AACATATTTAGCAACACCTC ATTTAGCAACACCTCACATT
	13314	GCAACACCTCACATTCACAA
40	13316	TGCAAGGAGATCTTCTTACT
	13317	ATGTGAAGCAGCAAGTAGAT
	13318	AAGCAGCAAGTAGATGGGAC
	13319 13320	GCAAGTAGATGGGACGTTGA TAGATGGGACGTTGAGTGCA
45	13320	GGGACGTTGAGTGCA
	13322	GTTGAGTGCATCTGGCTGAG
	13323	GTGCATCTGGCTGAGCAAGT
	13324	CACTTCTCCTTTGGGTCAGC
50	13325	CTCCTTTGGGTCAGCACAGA
50	13326	TTGGGTCAGCACAGATCTCC
	13327 13328	TCAGCACAGATCTCCTTGCC ACAGATCTCCTTGCCCAGTT
	13329	TCTCCTTGCCCAGTTTGGTT
	13330	TTGCCCAGTTTGGTTCTGAA
55	13331	CAGTTTGGTTCTGAAGATGA
	13332	TGGTTCTGAAGATGACAGCC
	13333	CTGAAGATGACAGCCTTCTG
	13334	GGGACACCTGCTGGTGGTGA ACCTGCTGGTGGTGATCACA
60	13335 13336	CTGGTGGTGATCACA
•	13337	TCCAGCTTGATTTCAGTAGG
	13338	GGTAGCAGAGTTCAAGTCTT
	13339	CAGAGTTCAAGTCTTCAGGG
cs	13340	TTCAAGTCTTCAGGGTGTGA
65	13341	GTCTTCAGGGTGTGAGCTTC CAGGGTGTGAGCTTCCGGCC
	13342 13343	TGTGAGCTTCCGGCCCAGGT
	13343	GCTTCCGGCCCAGGTGTTTC
	13345	CGGCCCAGGTGTTTCATATA
70	13346	GCAGCTCATAGTGGAAGGGA
	13347	GCTTAGAGACAGCAACCTAC
	13348	GAGACAGCAACCTACTTGCT
	13349	AGCAACCTACTTGCTCAAGG CCTACTTGCTCAAGGCCTTG
75	13350 13351	TTGCTCAAGGCCTTGCTATA

	13352	ACATAGTACATTTTGAATCA
	13353	CCGAATGCATCCTATTTGAA
	13354	AATTATGGTAGAAGTATTCC
	13355	TCAACCCCTGGGAACCGAAT
5	13356	TCTCCTTCCTACATTGCGGC
	13357	AATGTCAGCAGTCCTACTAT
	13358	CAGCAGTCCTACTATTGCAT
	13359	GTCCTACTATTGCATTCATC
	13360	ACTATTGCATTCATCTTTCC
10	13361	AACATATTTAGCAACACCTC
	13362	ATTTAGCAACACCTCACATT
	13363	GCAACACCTCACATTCACAA
	13364	TGCAAGGAGATCTTCTTACT
15	13365 13366	ATGTGAAGCAGCAAGTAGAT AAGCAGCAAGTAGATGGGAC
13	13367	GCAAGTAGATGGGACGTTGA
	13368	TAGATGGGACGTTGAGTGCA
	13369	GGGACGTTGAGTGCA
	13370	GTTGAGTGCATCTGGCTGAG
20	13371	GTGCATCTGGCTGAGCAAGT
	13372	CACTTCTCCTTTGGGTCAGC
	13373	CTCCTTTGGGTCAGCACAGA
	13374	TTGGGTCAGCACAGATCTCC
	13375	TCAGCACAGATCTCCTTGCC
25	13376	ACAGATCTCCTTGCCCAGTT
	13377	TCTCCTTGCCCAGTTTGGTT
	13378	TTGCCCAGTTTGGTTCTGAA
	13379	CAGTTTGGTTCTGAAGATGA
20	CD23+A	
30	13380	TGCGTCCCCGCTCCCTAGCTG
	13381	TCCTGTTCTATTTGGCCTCTG
	13382 13383	GCTTGGAGGATTCATTATGCT GCCTGTGTCTGTCCTCCT
	13384	GCTTCGTTCCTCTCGTTC
35	13385	CTGCTTGGTGCCCTTGCC
55	13386	GTCCTGCTCCTCCGGGCTGTG
	13387	CCGCTGGTGGCTCCCCTGG
	13388	GTCCTCGCCCTGGCTCCGGCT
	13389	GCAGAAGGCGTCGTTCC
40	13390	CCTTCGCTGGCTGGCGGGTC
	13391	TCTTGCTCTGGGCCTGGCTGT
	13392	GCTGCCTCCGTTTGGGTGGC
	13393	GAAGCTCCTCGATCTCTG
4 -	13394	GGGAAGCTCCTCGATCTCTG
45	13395	CGCCTCCTGGGAAGCTCCTC
	13396	CCTGCAACACCGCCTCCT
	13397 13398	CCTGCAACACCGCCTCCTGG
	13398	GAGTCCCACGCCTGCAAC GAGTCCCACGCCTGCAACAC
50	13399	GATCTGAGTCCCACGCCTGC
50	13401	GCACGATCTGAGTCCCACGC
	13402	AGCACGATCTGAGTCCCACGC
	13403	CAGCCCAGCAGCACGATCT
	13404	GGTCACCAGCCCCAGCAGC
55	13405	CGGCGGTCACCAGCCCCAGC
	13406	GCCCACAGAGCGGCGGTC
	13407	CAGCAGCCCAGCCCACAG
	13408	CAGAGTCAGCAGCCCAGCCC
٥.	13409	GAAGCAGAGTCAGCAGCCCAC
60	13410	CAGGAGAAGCAGAGTCAG
	13411	TGCCACAGGAGAAGCAGA
	13412	CCCAGTGCCACAGGAGAAGC
,	13413	GGTGTCCCAGTGCCACAGG
65	13414	TGTGTGGTGTCCCAGTGCCAC TGTGTGGTGTCCCAGTGCC
U.J	13415 13416	TGTGTGGTGTCCCAGTGC
	13417	GACTCTGTGTGGTGTCCCAGT
	13418	GACTCTGTGTGTGTCCC
	13419	AGCTGTTTTAGACTCTGTGT
70	13420	CCTCTCTTCCAGCTGTTT
-	13421	GCAGCCCTCTCTTCCAGCTG
	13422	TCCGGGCAGCCCTCTCTTCC
	13423	TCCGGGCAGCCCTCTCTT
_	13424	GACGTTCCGGGCAGCCCTCTC
75	13425	GACGTTCCGGGCAGCCCTCT

	13426	GACGTTCCGGGCAGCCCTC
	13427	GACGTTCCGGGCAGCCCT
	13428	TGAGAGACGTTCCGGGCAGCC
_	13429	CTTGAGAGACGTTCCGGGC
5	13430	CTTGGAAACTTGAGAGACG
	13431 13432	GTTCTTGGAAACTTGAGAG
-	13432	TTTCCAAGTTCTTGGAAACTT GTGGCTTTCCAAGTTCTTGG
	13434	GTGGCTTTCCAAGTTCTT
10	13435	CCGTGGTGGCTTTCCAAGTTC
	13436	CCGTGGTGGCTTTCCAAG
	13437	GGTCACCGTGGTGGCTTTCC
	13438	GGTCACCGTGGTGGCTTT
	13439	CATCTGGTCACCGTGGTGGCT
15	13440	CATCTGGTCACCGTGGTG
	13441	TGCGCCATCTGGTCACCGTGG
	13442	TGCGCCATCTGGTCACCG
	13443	TTTCTGCGCCATCTGGTCAC
20	13444 13445	CTGGGATTTCTGCGCCATCTG
20	13445	CTGGGATTTCTGCGCCAT GTGGACTGGGATTTCTGCGCC
	13447	GTGGACTGGGATTTCTGC
	13448	TCTGCGTGGACTGGGATTTCT
	13449	TCTGCGTGGACTGGGATT
25	13450	TGAAATCTGCGTGGACTGGG
	13451	TCCTGTGAAATCTGCGTGG
	13452	CCAGTTCCTGTGAAATCTGCG
	13453	TTCCTCCAGTTCCTGTG
20	13454	CGAAGTTCCTCCAGTTCC
30	13455	CAGCTCGAAGTTCCTCCAGTT
	13456	CTGTTCAGCTCGAAGTTCCTC
	13457 13458	CTCTGCTGTTCAGCTCGAAGT TCAATCTCTGCTGTTCAGCTC
	13459	GATTTCAATCTCTGCTGTTC
35	13460	TCCTGAGATTTCAATCTCTGC
	13461	CCAAGTCCTGAGATTTCAATC
	13462	CAGCTCCAAGTCCTGAGATTT
	13463	CAGGACAGCTCCAAGTCCTG
	13464	GGTTCCAGGACAGCTCCAAGT
40	13465	GTTCAGGTTCCAGGACAGCTC
	13466	GCCCGTTCAGGTTCCAGG
	13467	CTTGAAGCCCGTTCAGGTTCC
	13468 13469	TCTGCTTGAAGCCCGTTCAGG CTCAGATCTGCTTGAAGCCCG
45	13470	GCTGCTCAGATCTGCTTG
43	13471	CTTGAAGCTGCTCAGATCTGC
	13472	TGGGACTTGAAGCTGCTC
	13473	TTCCTGGGACTTGAAGCTGCT
	13474	GTTCAATTCCTGGGACTTG
50	13475	CTCCTCCCGGAGTCTTTCCAG
	13476	GTCACCTCCTCCCGGAGTCTT
	13477	GCTTTGTCACCTCCTCCCGG
	13478	CCTTAGCTTTGTCACCTCCTC
55	13479 13480	TCCATCCTTAGCTTTGTCACC GCAACTCCATCCTTAGCTTTG
<i>JJ</i>	13481	CACCTGCAACTCCATCCTT
	13482	CTGGACACCTGCAACTCCATC
	13483	GCCGCTGGACACCTGCAACTC
	13484	CACAAAGCCGCTGGACACCTG
60	13485	TTGCACACAAAGCCGCTGG
	13486	CGTGTTGCACACAAAGCCGCT
	13487	CCACTTTCAGGGCACGTGTT
	13488	GTTGATCCACTTTTCAGGGC
65	13489	TGGAAGTTGATCCACTTTTC
65	13490 13491	TCCGTTGGAAGTTGATCC
	13491	GCACTTCCGTTGGAAGTTG TAGTAGCACTTCCGTTGG
	13492	CGAAGTAGTAGCACTTCCG
	13494	CTTGCCGAAGTAGTAGCACTT
70	13495	GTGCCCTTGCCGAAGTAGT
-	13496	TGGACCCACTGCTTGGTGCCC
	13497	GGGCGTGGACCCACTGCT
	13498	TACCGGGCGTGGACCCAC
	13499	CAGGCATACCGGGCGTGG
75	13500	CGTCACAGGCATACCGGG

	13501	CATGTCGTCACAGGCATACCG
	13502	CCTTCCATGTCGTCACAGGC
	13503	GCTGCCCTTCCATGTCGT
5	13504 13505	GACCAGCTGCCCTTCCATGT
,	13505	TGCTGACCAGCTGCCCTTCC TGTGGATGCTGACCAGCTGC
	13507	GCTTGGTCAGGAAGTCCTGC
	13508	GGCATGCTTGGTCAGGAAGTC
	13509	TGGCTGGCATGCTTGGTCAGG
10	13510	CGGTGTGGCTGGCATGCTTGG
	13511	GGAGCCGGTGTGGCTGGC
	13512	TCCAGGAGCCGGTGTGGCTGG
	13513	GGCCAATCCAGGAGCCGGTGT
	13514	CCGAAGGCCAATCCAGGAGCC
15	13515	GGTCCAAGTTCCGAAGGCC
	13516	CTTCAGGTCCAAGTTCCG
	13517 13518	TCTCCCTTCAGGTCCAAGTTC
	13518	TAAACTCTCCCTTCAGGTCC CCAGATAAACTCTCCCTTCAG
20	13520	TCCACCCAGATAAACTCTCCC
20	13521	TCCCATCCACCCAGATAAACT
	13522	TGGCTCCCATCCACCCAGAT
	13523	TGGCTCCCATCCACCCAG
	13524	ATGGCTCCCATCCACCCAGAT
25	13525	TCCACATGGCTCCCATCCACC
	13526	TCCACATGGCTCCCATCC
	13527	TGTAGTCCACATGGCTCCCAT
	13528	TGTAGTCCACATGGCTCCC
20	13529	GCCCAGTTGCTGTAGTCC
30	13530	CTGGAGCCCAGTTGCTGT
	13531 13532	CTCCCCTGGAGCCCAGTTGCT GGTCCAGCGACCGGAGCC
	13533	GTCGCAGAAGGCGTCGGTCC
	13534	TTACGGTCGCAGAAGGCGTC
35	13535	CCAGCTTACGGTCGCAGAAGG
	13536	GGCGCCCAGCTTACGGTCGC
	13537	CCCAGGCGCCCAGCTTACGGT
	13538	CGCACACCCAGGCGCCC
40	13539	CCGGTCGCACACCCAGGCGC
40	13540	GCCAGCCGGTCGCACACC
	13541 1354 2	TGTGGCCAGCCGGTCGCAC CGTGCATGTGGCCAGCCGGTC
	13542	CGTGCATGTGGCCAGCCGGTC
	13544	TGGCTGGCGCGCGTGCATGTG
45	13545	GGACTCCGCGGAACCTTCGC
	13546	CCCATGGACTCCGCGGAACC
	13547	CAGGTCCCATGGACTCCGCG
	13548	TGAATCAGGTCCCATGGACTC
	13549	TGAATCAGGTCCCATGGAC
50	13550	GGTCTTGAATCAGGTCCCATG
	13551	GGTCTGGTCTTGAATCAGGTC
	13552	GTCAGGGTCTGGTCTTGAATC GCAGGCGGCCGTCAGGGTC
	13553 13554	TCCATGCTCAAGAGTGGAGAG
55	13555	TCCATGCTCAAGAGTGGAG
	13556	TGGGCCTGGCTGTATCCATGC
	13557	GGTCTTCAGGGTCTTGCTCTG
	13558	GGCTTTTAGGCCGTGGTTGG
	13559	GCCACAAAGAGGCTTTTAGGC
60	13560	GGACCTTTCAGCCACAAAGAG
	13561	TGTCACAGGGACCTTTCAGCC
	13562	CAGAAAATGTCACAGGGACCT
	13563 13564	GGTGGCAGAAAATGTCACAGG GGTGGCAGAAAATGTCAC
65	13565	GTTTGGGTGGCAGAAAATGTC
0,5	13566	CCTCCGTTTGGGTGGCAG
	13567	TGCCTCCGTTTGGGTGGC
	13568	GTGTCAGCTGCCTCCGTTTGG
	13569	GTGTCAGCTGCCTCCGTTT
70	13570	GTGTCAGCTGCCTCCGTT
	13571	GCGGGAGATGTGTCAGCTGC
	13572	GAGGAGCGGGAGATGTGTC
	13573	GCCATAGAGGAGCGGGAG
75	13574 13575	GTACTCCTGGGAAGGCAGGG GGAGAGGGTGCTGTTGGG
, ,	13373	GONONOGOTOCIOTIOGO

	13576	TCTGGAGAGGGTGCTGTTGGG
	13577	TCTGGAGAGGGTGCTGTTGG
	13578 13579	TCTGGAGAGGGTGCTGTTG TCTGGAGAGGGTGCTGTT
5	13580	TCTGGAGAGGGTGCTGT
-	13581	TCTGGAGAGGGTGCTG
	13582	CATCTGGAGAGGGTGCTGTTG
	13583	CATCTGGAGAGGGTGCTGT
	13584	CATCTGGAGAGGGTGCT
10	13585	CATCTGGAGAGGGTG
	13586	CTCCCATCTGGAGAGGGTGCT
	13587	GGGCACTCCCATCTGGAGAGG
	13588 13589	GGGCACTCCCATCTGGAG CTCTCATCTGGAGAGGGTGC
15	13590	GAGGACTCACCACCCTGAGC
15	13591	GGCTGGACAGGAGGACTC
	13592	TATTGATGCAGGCTGGACÁGG
	13593	GGCCATCACTGCCCCATTT
	VCAM	
20	13594	TTTAGTACTGTGTCTCCTGT
	13595	CTTTCTGCTTCTTCCAGCCT
	13596	CTTCCAGCCTGGTTAATTCC
	13597 13598	TTTGCGTACTCTGCCTTTGT CTGCCTTGTTTGGGTTCGA
25	13599	TGGTAGGGATGAAGGTCATT
23	13600	TGTTCTCTAGAGATTTCATA
	13601	AGATTTCATATCCGTATCCT
	13602	CCAAAAACTCTATATTCTCC
	13603	TATATTCTCCAGAATAGTCT
30	13604	TAATTCAATCTCCAGCCGGT
	13605	CACGCTAGGAACCTTGCAGC
	13606	TTCACGAGGCCACCACTCAT
	13607	CACCACTCATCTCGATTTCT
35	13608 13609	CCGCTCAGAGGGCTGTCTAT GGCTGTCTATCTGGGTTCTC
	13610	CTGGGTTCTCCAGGAGAAAG
	13611	ATCTCAACAGTAAATGGTTT
	13612	CCAGAATCTTCCATCCTCAT
	13613	CAGCCTGCCTTACTGTGGGC
40	13614	TACTGTGGGCACAGAATCCA
	13615	TTCACAAGTTGCTGTGCACA
	13616	GCTGTGCACAGGTAAGAGTG
	13617	TTCGTTCCCAAAACTAACAG
45	13618 ICAM	TAGATTCTGGGGTGGTCTCG
73	13619	GGAAGTGTGGGCCTTTGTGT
	13620	GCCTTTGTGTTTTTGATGCTA
	13621	TTTGATGCTACACATGTCTA
	13622	CACATGTCTATGGAGGGCCA
50	13623	TGGAGGCCACTTCTTCTGT
	13624	CTTCTTCTGTAAGTCTGTGG
	13625	AAGTCTGTGGGGCCTCAGCA
	13626	GGCCTCAGCATACCCAATAG
55	13627 13628	TACCCAATAGGCAGCAAGTT GCAGCAAGTTTCAGTATTTC
55	13629	TCAGTATTTCCCAGTTGTAT
	13630	CCAGTTGTATGTCCTCATGG
	13631	GTCCTCATGGTGGGGCTATG
	13632	TGGGGCTATGTCTCCCCCAC
60	13633	TCTCCCCACCACTTCCCCT
	13634	CACTTCCCCTCTCATCAGGC
	13635	CTCATCAGGCTAGACTTTAA
	13636	TAGACTITAACATCCATCAA
65	13637	CATCCATCAATCATGTCTTG TCATGTCTTGAGTCTTGCTC
00	13638 13639	AGTCTTGCTCCTTCCTCTTG
	13640	CTTCCTCTTGGCTTAGTCAT
	13641	GCTTAGTCATGTGACTACAG
	13642	GTGACTACAGATCAGATGCG
70	13643	ATCAGATGCGTGGCCTAGTG
	13644	TGGCCTAGTGTTTTAGGTGT
	13645	TTTTAGGTGTGCAGGTACCA
	13646	GCAGGTACCATGGCCCCAAA
75	13647	TGGCCCCAAATGCTGTTGTA
75	13648	TGCTGTTGTATCTGACTGAG

	13649	TCTGACTGAGGACAATGCCC
	13650	GACAATGCCCTGTCCTCCGG
	13651	TGTCCTCCGGCGTCCCAGGG
5	13652 13653	CGTCCCAGGGCCGGTAGGTG CCGGTAGGTGTAGCTGCATG
,	13654	TAGCTGCATGGCATATGTCT
	13655	GCATATGTCTTCCACTCTGT
	13656	TCCACTCTGTTCAGTGTGGC
	13657	TCAGTGTGGCACCACTGCCA
10	13658 13659	ACCACTGCCACCAATATGGG
	13660	CCAATATGGGAAGGCCGAGG AAGGCCGAGGAAGAGGCCCT
	13661	AAGAGGCCCTGTCCCGGGAT
	13662	GTCCCGGGATAGGTTCAGGG
15	13663	AGGTTCAGGGAGGCGTGGCT
	13664 13665	AGGCGTGGCTTGTGTGTTCG TGTGTGTTCGGTTTCATGGG
	13666	GTTTCATGGGGGTCCCTTTT
	13667	GGTCCCTTTTTGGGCCTGTT
20	13668	TGGGCCTGTTGTAGTCTGTA
	13669	GTAGTCTGTATTTCTTGATC
	13670 13671	TTTCTTGATCTTCCGCTGGC
	13672	TTCCGCTGGCGGTTATAGAG GGTTATAGAGGTACGTGCTG
25	13673	GTACGTGCTGAGGCCTGCAG
	13674	AGGCCTGCAGTGCCCATTAT
	13675	TGCCCATTATGACTGCGGCT
	13676 13677	GACTGCGGCTGCTACCACAG
30	13678	GCTACCACAGTGATGATGAC TGATGATGACAATCTCATAC
50	13679	AATCTCATACCGGGGGGAGA
	13680	CGGGGGAGAGCACATTCAC
	13681	GCACATTCACGGTCACCTTG
35	13682 13683	GGTCACCTTGCGGGTGACCT
55	13684	CGGGTGACCTCCCCTTGAGT CCCCTTGAGTGCTCCTGGCC
	13685	GCTCCTGGCCCGACAGAGGT
	13686	CGACAGAGGTAGGTGCCCTC
40	13687	AGGTGCCCTCAAGATCTCGA
40	13688 13689	AAGATCTCGAGTGACAGTCA GTGACAGTCACTGATTCCCC
	13690	CTGATTCCCCGATGGGCAGT
	13691	GATGGGCAGTGGGAAAGTGC
. ~	13692	GGGAAAGTGCCATCCTTTAG
45	13693	CATCCTTTAGACACTTGAGC
	13694 13695	ACACTTGAGCTCGGGCAATG TCGGGCAATGGGTTCCCCCA
	13696	GGTTCCCCCAAGCCTGGCAC
	13697	AGCCTGGCACATTGGAGTCT
50	13698	ATTGGAGTCTGCTGGGAATT
	13699	GCTGGGAATTTTCTGGCCAC
	13700 13701	TTCTGGCCACGTCCAGTTTC GTCCAGTTTCCCGGACAATC
	13702	CCGGACAATCCCTCTCGTCC
55	13703	CCTCTCGTCCAGTCGGGGC
	13704	AGTCGGGGGCCATACAGGAC
	13705	CATACAGGACACGAAGCTCC
	13706 13707	ACGAAGCTCCCGGGTCTGGT CGGGTCTGGTTCTTGTGTAT
60	13708	TCTTGTGTATAAGCTGGCCG
	13709	AAGCTGGCCGGCCACCTCCA
	13710	GCCACCTCCAGGGTTGCAGA
	13711	GGGTTGCAGAGCAGGAGAAG
65	13712 13713	GCAGGAGAAGCTGCGCCCGT CTGCGCCCGTTGTCCTCTGG
05	13714	TGTCCTCTGGGGTGGCCTTC
	13715	GGTGGCCTTCAGCAGGAGCT
	13716	AGCAGGAGCTGGGCCCTCGG
70	13717	GGGCCTCGGGCCCAGTGGC
70	13718 13719	GCCCAGTGGCTGGGCTGGAA TGGGCTGGAACCCCATTCAG
	13720	CCCCATTCAGCGTCACCTTG
	13721	CGTCACCTTGGCTCTAGGGT
a c	13722	GCTCTAGGGTGGGCCTCACA
75	13723	GGGCCTCACACTTCACTGTC

	13724	CTTCACTGTCACCTCGGTCC
	13725	ACCTCGGTCCCTTCTGAGAC
	13726	CTTCTGAGACCTCTGGCTTC
_	13727	CTCTGGCTTCGTCAGAATCA
5	13728	GTCAGAATCACGTTGGGCGC
	13729	CGTTGGGCGCCGGAAAGCTG
	13730 13731	CGGAAAGCTGTAGATGGTCA TAGATGGTCACTGTCTGCAG
	13732	CTGTCTGCAGTGTCTCCTGG
10	13733	TGTCTCCTGGCTCTGGTTCC
	13734	CTCTGGTTCCCCAGTATTAC
	13735	CCAGTATTACTGCACACGTC
	13736	TGCACACGTCAGCCGCTGGG
	13737	AGCCGCTGGGTGCCCTCGTC
15	13738	TGCCCTCGTCCTCTGCGGTC
	13739	CTCTGCGGTCACACTGACTG
	13740 13741	ACACTGACTGAGGCCTTGGC AGGCCTTGGCCGAGAAGGAG
	13741	CGAGAAGGAGTCGTTGCCAT
20	13742	TCGTTGCCATAGGTGACTGT
	13744	AGGTGACTGTGGGGTTCAAC
	13745	GGGGTTCAACCTCTGGTCCC
	13746	CTCTGGTCCCCCAGTGCCAG
	13747	CCAGTGCCAGGTGGACCTGG
25	13748	GTGGACCTGGGCCTCCGAGA
	13749	GCCTCCGAGACTGGGAACAG
	13750	CTGGGAACAGCCCGTCCAGG
	13751	CCCGTCCAGGGAACAGACCA
20	13752	GAACAGACCACGGTCCCCTG
30	13753 13754	CGGTCCCCTGCGTGTCCACC
	13755	CGTGTCCACCTCTAGGACCC TCTAGGACCCGGGGGCTGAC
	13756	GGGGCTGACAAGTTGTGGG
	13757	AAGTTGTGGGGGAGTCGCTG
35	13758	GGAGTCGCTGGCAGGACAAA
	13759	GCAGGACAAAGGTCTGGAGC
	13760	GGTCTGGAGCTGGTAGGGGG
	13761	TGGTAGGGGGCCGAGGTGTT
40	13762	CCGAGGTGTTCTCAAACAGC
40	13763	CTCAAACAGCTCCAGCCCTT
	13764 13765	TCCAGCCCTTGGGGCCGCAG GGGGCCGCAGGTCCAGTTCA
	13766	GTCCAGTTCAGTGCGGCACG
	13767	GTGCGGCACGAGAAATTGGC
45	13768	AGAAATTGGCTCCATGGTGA
	13769	TCCATGGTGATCTCTCCTCA
	13770	TCTCTCCTCACCAGCACCGT
	13771	CCAGCACCGTGGTCGTGACC
	13772	GGTCGTGACCTCAGCGGGCT
50	13773	TCAGCGGGCTCCCCACAGC
	13774	CCCCACAGCTGGCTCCCGT
	13775	TGGCTCCCGTTTCAGCTCCT TTCAGCTCCTTCTCCCCACG
	13776 13777	TCTCCCCACGGAGCAGCACC
55	13778	GAGCAGCACCACGGTGAGGT
-	13779	ACGGTGAGGTTGGCCCGGGG
	13780	TGGCCGGGGTGCCCCACCC
	13781	TGCCCCACCTCCACCTGGC
	13782	TCCACCTGGCAGCGTAGGGT
60	13783	AGCGTAGGGTAAGGTTCTTG
	13784	AAGGTTCTTGCCCACTGGCT
	13785	CCCACTGGCTGCCAAGAGGG
	13786	GCCAAGAGGGGAGGGTGCC
65	13787 13788	GAGGGGTGCCAGTTCCACCC AGTTCCACCCGTTCTGGAGT
05	13789	GTTCTGGAGTCCAGTACACG
	13790	CCAGTACACGGTGAGGAAGG
	13791	GTGAGGAAGGTTTTAGCTGT
	13792	TTTTAGCTGTTGACTGCCCA
70	13793	TGACTGCCCATCAGGGCAGT
	13794	TCAGGGCAGTTTGAATAGCA
	13795	TTGAATAGCACATTGGTTGG
	13796	CATTGGTTGGCTATCTTCTT
75	13797	CTATCTTCTTGCACATTGCT
75	13798	GCACATTGCTCAGTTCATAC

		•
	13799	CAGTTCATACACCTTCCGGT
	13800	ACCTTCCGGTTGTTCCCAGG
	13801	TGTTCCCAGGCAGGAGCAAC
	13802	CAGGAGCAACTCCTTTTTAG
5	13803	TCCTTTTTAGGCAACGGGGT
,	13804	GCAACGGGGTCTCTATGCCC
	13805	CTCTATGCCCAACAACTTGG
	13806	AACAACTTGGGCTGGTCACA
	13807	GCTGGTCACAGGAGGTGCTG
10	13808	GGAGGTGCTGCATGTCACCA
	13809	CATGTCACCAGCACGGAGCC
	13810	GCACGGAGCCTCCCCGGGGC
	13811	TCCCCGGGGCAGGATGACTT
	13812	AGGATGACTTTTGAGGGGGA
15	13813	TTGAGGGGGACACAGATGTC
	13814	CACAGATGTCTGGGCATTGC
	13815	TGGGCATTGCCAGGTCCTGG
	13816	CAGGTCCTGGGAACAGAGCC
	13817	GAACAGAGCCCCGAGCAGGA
20	13818	
20		CCGAGCAGGACCAGGAGTGC
	13819	CCAGGAGTGCGGGCAGCGCG
	13820	GGGCAGCGCGGGGCC
	13821	GGCCGGGGCTGCTGGGAGC
	13822	TGCTGGGAGCCATAGCGAGG
25	13823	CATAGCGAGGCTGAGGTTGC
	13824	CTGAGGTTGCAACTCTGAGT
	13825	AACTCTGAGTAGCAGAGGAG
	13826	AGCAGAGGAGCTCAGCGTCG
	13827	CTCAGCGTCGACTGGGGCGC
30	Tryptase	
••	13828	AGGCTCAGCATCCTGGCCAC
	13829	GCAGCAGGCTCAGCATCCTG
	13830	CAGCAGCAGCAGCTCAGCA
	13831	AGCGCCAGCAGCAGCAGGCT
35		
22	13832	CGGGCAGCGCCAGCAGCAGC
	13833	CAGGACGGCAGCA
	13834	CTCGCCAGGACGGCAGCGC
	13835	CGCGGCTCGCCAGGACGGGC
4.0	13836	GTAGGCGCGGCTCGCCAGGA
40	13837	GCCGCGTAGGCGCGCTCGC
	13838	CAGGGCCGCGTAGGCGCGG
	13839	TGGGCAGGGCCGCGTAGG
	13840	TGGACTGGGGCAGGGCCGC
	13841	GGGCCTGGACTGGGGCAGGG
45	13842	CTGCAGGGCCTGGACTGGGG
	13843	GCTTGCTGCAGGGCCTGGAC
	13844	TACCCGCTTGCTGCAGGGCC
	13845	GACGATACCCGCTTGCTGCA
	13846	CCCCGACGATACCCGCTTG
50	13847	CCTGACCCCGACGATACCC
50	13848	GGCTCCTGACCCCGACGA
	13849	TOTTOTTOTOTOTO
	13850	TGCTCCTGGGGGCCTCCTGA
	13851	CCACTTGCTCCTGGGGGCCT
55	13852	CAGGCCACTTGCTCCTGGG
	13853	CCTGCCAGGGCCACTTGCTC
	13854	GCTCACCTGCCAGGGCCACT
	13855	CTCAGGCTCACCTGCCAGGG
	13856	GGACTCTCAGGCTCACCTGC
60	13857	GTCGCGGACTCTCAGGCTCA
	13858	TATCGGTCGCGGACTCTCAG
	13859	TCCAGTATCGGTCGCGGACT
	13860	GTGCATCCAGTATCGGTCGC
	13861	CAGAAGTGCATCCAGTATCG
65	13862	CCCGCAGAAGTGCATCCAG
UJ	13863	GGAGCCCCGCAGAAGTGCA
		ATGAGGGAGCCCCCGCAGAA
	13864	
	13865	GGTGGATGAGGGAGCCCCCG
70	13866	CTGGGGGTGGATGAGGGAGC
70	13867	ACCCACTGGGGGTGGATGAG
	13868	TCAGCACCCACTGGGGGTGG
	13869	CGCGGTCAGCACCCACTGGG
	13870	TGCGCCGCGGTCAGCACCCA
	13871	GGCAGTGCGCCGCGGTCAGC
75	13872	TCCCAGGCAGTGCGCCGCGG

	13873	TCCGGTCCCAGGCAGTGCGC
	13874	TGACGTCCGGTCCCAGGCAG
	13875	ATCCTTGACGTCCGGTCCCA
_	13876	GCCAGATCCTTGACGTCCGG
5	13877 13878	GGGTGGCCAGATCCTTGACG CCTGAGGGTGGCCAGATCCT
	13879	TGCACCCTGAGGGTGGCCAG
	13880	GCAGTTGCACCCTGAGGGTG
	13881	CTCCCGCAGTTGCACCCTGA
10	13882	TGCTGCTCCCGCAGTTGCAC
	13883 13884	AGAGGTGCTGCTCCCGCAGT GTAGTAGAGGTGCTGCTCCC
	13885	TCCTGGTAGTAGAGGTGCTG
	13886	GCTGGTCCTGGTAGTAGAGG
15	13887	CAGCAGCTGGTCCTGGTAGT
	13888	ACTGCAGCAGCTGGTCCTG
	13889 13890	TGCTGACTGGCAGCAGCTGG GATCCTGCTGACTGGCAGCA
	13891	ACGATGATCCTGCTGACTGG
20	13892	GGTGCACGATGATCCTGCTG
	13893	CTGTGGGTGCACGATGATCC
	13894	TAGAACTGTGGGTGCACGAT
	13895 13896	TGATGTAGAACTGTGGGTGC CTGGATGATGTAGAACTGTG
25.	13897	CCAGTCTGGATGATGTAGAA
	13898	CCGCTCCAGTCTGGATGATG
	13899	GATATCCGCTCCAGTCTGGA
	13900	AGGGCGATATCCGCTCCAGT
30	13901 13902	CCAGCAGGGCGATATCCGCT CAGCTCCAGCAGGGCGATAT
50	13902	TCCTCCAGCTCCAGCAGGGC
	13904	CGGGCTCCTCCAGCTCCAGC
	13905	GTTCACGGGCTCCTCCAGCT
25	13906	GAGATGTTCACGGGCTCCTC
35	13907 13908	GGCTGGAGATGTTCACGGGC GACGCGGCTGGAGATGTTCA
	13909	GTGTGGACGCGGCTGGAGAT
	13910	TGACCGTGTGGACGCGGCTG
40	13911	CAGCATGACCGTGTGGACGC
40	13912	GGGGCAGCATGACCGTGTG
	13913 13914	AGGCAGGGGGCAGCATGACC CTCCGAGGCAGGGGGCAGCA
	13915	AAGGTCTCCGAGGCAGGGG
	13916	GGGGGAAGGTCTCCGAGGCA
45	13917	CCCCGGGGGGAAGGTCTCCG
	13918 13919	GGCATCCCGGGGGAAGGT
	13919	AGCACGGCATCCCCGGGGGG GACCCAGCACGGCATCCCCG
	13921	CCAGTGACCCAGCACGCAT
50	13922	CCCAGCCAGTGACCCAGCAC
	13923	ATCGCCCCAGCCAGTGACCC
	13924 13925	TCCACATCGCCCCAGCCAGT CATTGTCCACATCGCCCCAG
	13926	CTCATCATTGTCCACATCGC
55	13927	AGGGCTCATCATTGTCCAC
	13928	GTGGGAGGGCTCATCATTG
	13929	TGGCGGTGGGAGGGCTCAT
	13930 13931	GGAAATGGCGGTGGGAGGGG TCAGGGGAAATGGCGGTGGG
60	13932	CTGCTTCAGGGGAAATGGCG
-	13933	TTCACCTGCTTCAGGGGAAA
	13934	GGACCTTCACCTGCTTCAGG
	13935	TATGGGGACCTTCACCTGCT
65	13936 13937	TCCATTATGGGGACCTTCAC GGTTTTCCATTATGGGGACC
03	13938	AATGTGGTTTTCCATTATGG
	13939	TCACAAATGTGGTTTTCCAT
	13940	TTGCGTCACAAATGTGGTTT
70	13941	GTATTTTGCGTCACAAATGT
70	13942 13943	AGGTGGTATTTTGCGTCACA CGCCAAGGTGGTATTTTGCG
	13943	GTAGGCGCCAAGGTGGTATT
	13945	CCCGTGTAGGCGCCAAGGTG
	13946	CGTCTCCCGTGTAGGCGCCA
75	13947	GACGTCGTCTCCCGTGTAGG

	13948	ATGCGGACGTCGTCTCCCGT
	13949	GGATGATGCGGACGTCGTCT
	13950	GTCACGGATGATGCGGACGT
5	13951 13952	ATGTCGTCACGGATGATGCG
,	13953	ACAGCATGTCGTCACGGATG GGCACACAGCATGTCGTCAC
	13954	TTCCCGGCACACAGCATGTC
	13955	GGCTGTTCCCGGCACACAGC
10	13956	CCTCTGGCTGTTCCCGGCAC
10	13957 13958	GAGTCCCTCTGGCTGTTCCC
	13959	TGCAGGAGTCCCTCTGGCTG GCCCTTGCAGGAGTCCCTCT
	13960	GAGTCGCCCTTGCAGGAGTC
	13961	CTCCAGAGTCGCCCTTGCAG
15	13962	GGGCCCTCCAGAGTCGCCCT
	13963	ACCAGGGGCCCTCCAGAGTC
	13964 13965	TGCACACCAGGGGCCCTCCA CACCTTGCACACCAGGGGCC
	13966	CCATTCACCTTGCACACCAG
20	13967	AGGTGCCATTCACCTTGCAC
	13968	TAGCCAGGTGCCATTCACCT
	13969	GCCTGTAGCCAGGTGCCATT
	13970 13971	CGCCGCCTGTAGCCAGGTG
25	13972	GACCACGCCCGCCTGTAGCC CAGCTGACCACGCCCGCCTG
	13973	CGTCCCAGCTGACCACGCCC
	13974	GCCCTCGTCCCAGCTGACCA
	13975	GCACAGCCCTCGTCCCAGCT
70	13976	GCTGGGCACAGCCCTCGTCC
30	13977 13978	GTTGGGCTGGGCACAGCCCT GGCCGGTTGGGCTGGGCACA
	13979	TGCCAGGCCGGTTGGGCTGG
	13980	GTAGATGCCAGGCCGGTTGG
	13981	CGGGTGTAGATGCCAGGCCG
35	13982	TGACACGGGTGTAGATGCCA
	13983	GTAGGTGACACGGGTGTAGA
	13984 13985	AAGTAGTAGGTGACACGGGT AGTCCAAGTAGTAGGTGACA
	13986	GATCCAGTCCAAGTAGTAGG
40	13987	TGGTGGATCCAGTCCAAGTA
	13988	CATAGTGGTGGATCCAGTCC
	13989	GGGACATAGTGGTGGATCC
	13990 13991	TTTTTGGGGACATAGTGGTG ACGGCTTTTTGGGGACATAG
45	13992	GACTCACGGCTTTTTGGGGA
-	Tryptase	
	13993	AGATTCAGCATCCTGGCCAC
	13994	GCAGCAGATTCAGCATCCTG
50	13995 13996	CAGCAGCAGCAGATTCAGCA AGCGCCAGCAGCAGCAGATT
50	13997	TGGCCTGGGGCAGGGCCGC
	13998	GGCCTGGACTGGGGCAGGG
	13999	CTGCAGGGCCTGGCCTGGGG
	14000	CCTCGCTGCAGGGCCTGGCC
55	14001	TGCCCACTCGCTGCAGGGCC AACGATGCCCACTCGCTGCA
	14002 14003	CCCCCAACGATGCCCACTCG
	14004	CCTGACCCCCAACGATGCCC
	14005	GGCCTCCTGACCCCCAACGA
60	14006	GCCGTGGACTCTCAGGCTCA
	14007	TATGGGCCGTGGACTCTCAG
	14008 14009	-TCCAGTATGGGCCGTGGACT GTGCATCCAGTATGGGCCGT
•	14010	CAGAAGTGCATCCAGTATGG
65	14011	TGCGGTCAGCACCCACTGGG
	14012	TGCGCTGCGGTCAGCACCCA
	14013	CGCAGTGCGCTGCGGTCAGC
	14014	TCCCACGCAGTGCGCAGTGCGG
70	14015 14016	TCCGGTCCCACGCAGTGCGC TGACGTCCGGTCCCACGCAG
. •	14017	GGGCGGCCAGATCCTTGACG
	14018	CCTGAGGGCGGCCAGATCCT
	14019	TGCACCCTGAGGGCGGCCAG
75	14020	GCAGTTGCACCCTGAGGGCG
75	14021	ACCGGCAGCAGCTGGTCCTG

	14022	TGCTGACCGGCAGCAGCTGG
	14023	GATCCTGCTGACCGGCAGCA
	14024	ACGATGATCCTGCTGACCGG
	14025	CGGTGTAGAACTGTGGGTGC
5	14026	CTGGACGGTGTAGAACTGTG
	14027	CCGATCTGGACGGTGTAGAA
	14028	CCGCTCCGATCTGGACGGTG
	14029	GATGTCCGCTCCGATCTGGA
	14030	AGGGCGATGTCCGCTCCGAT
10	14031	CCAGCAGGGCGATGTCCGCT
	14032	CAGCTCCAGCAGGGCGATGT
	14033	CCGCTCCTCCAGCTCCAGC
	14034	CTTCACCGGCTCCTCCAGCT
15	14035 14036	GAGACCTTCACCGGCTCCTC GGCTGGAGACCTTCACCGGC
13	14036	GACGTGGCTGGAGACCTTCA
	14038	GTGTGGACGTGGCTGGAGAC
	14039	TGACCGTGTGGACGTGGCTG
	14040	CAGGGTGACCGTGTGGACGT
20	14041	GGGGCAGGGTGACCGTGTG
	T4042	AGGCAGGGGGCAGGGTGACC
	14043	CTCTGAGGCAGGGGCAGGG
	14044	AAGGTCTCTGAGGCAGGGG
	14045	GGGGGAAGGTCTCTGAGGCA
25	14046	CCCCGGGGGGAAGGTCTCTG
	14047	AGGCGCTCATCATTGTCCAC
	14048	GTGGGAGGCGCTCATCATTG
	14049	TGGCGGTGGGAGGCGCTCAT
20	14050	GGAAATGGCGGTGGGAGGCG
30	14051	TCAGAGGAAATGGCGGTGGG
	14052	CTGCTTCAGAGGAAATGGCG
	14053 14054	TTCACCTGCTTCAGAGGAAA GGACCTTCACCTGCTTCAGA
	14054	GGACGATGCGGACGTCGTCT
35	14056	GTCACGGACGATGCGGACGT
-	14057	ATGTCGTCACGGACGATGCG
	14058	ACAGCATGTCGTCACGGACG
	14059	GGCTGTTCCCGGCACACAGC
	14060	CCTCTGGCTGTTCCCGGCAC
40	14061	GAGTCCCTCTGGCTGTTCCC
	14062	TGCAGGAGTCCCTCTGGCTG
	14063	GCCCTTGCAGGAGTCCCTCT
	14064	GAGTCGCCCTTGCAGGAGTC
15	14065	CTCCAGAGTCGCCCTTGCAG
45	14066	GGGCCCTCCAGAGTCGCCCT
	14067	ACCAGGGGCCCTCCAGAGTC
	14068 14069	TGCACACCAGGGGCCCTCCA TAGCCAGGTGCCATTCACCT
	14009	GCTGTAGCCAGGTGCCATT
50	14070	CGCCGCCTGTAGCCAGGTG
50	14072	GACCACGCCCGCCTGTAGCC
	14073	CGTCCCAGCTGACCACGCCC
	14074	GCCCTCGTCCCAGCTGACCA
	14075	GCACAGCCCTCGTCCCAGCT
55	14076	GCTGGGCACAGCCCTCGTCC
	PDE4A	
	14077	TCAGGTAGGGTCTCCACCTG
	14078	TCTCCACCTGACCCCCCGCC
	14079	ACCCCCGCCACCAGGAGCT
60	14080	ACCAGGAGCTGGGAGTGCGG
	14081	GGGAGTGCGGATGTCCTC
	14082	ATGTGTCCTCCCAAATGTC
	14083	CCCAAATGTCCCTGCGCAGG CCTGCGCAGGCACTGCAAGC
65	14084 14085	CACTGCAAGCCCTCTTGGCA
UJ.	14085	CCTCTTGGCAGCCTGGTGCT
	14087	GCCTGGTGCTCTCGTTGGGC
	14088	CTCGTTGGGCCTCCACCTCG
	14089	CTCCACCTCGGCCGCCGTGG
70	14090	GCCGCCGTGGAGGGGAGGCC
	14091	AGGGAGGCCCGGGAGGCCC
	14092	CGGGAGGCCCGGGGCATGCT
	14093	GGGCATGCTCTGAAACAGA
	14094	CTGAAACAGACAGGGTCCTC
75	14095	CAGGGTCCTCCAAGCAGGGA

	14096	CAAGCAGGGAGAAGGGGGC
	14097	GAAGGGGGCTTTGAAGAGCC
	14098	TTGAAGAGCCAGGGCAGAGC
_	14099	AGGGCAGAGGGGCTGCTGTG
5	14100 14101	GGCTGCTGTGGCTTACAGCA
	14101	GCTTACAGCAACCACGAATT ACCACGAATTCCTCCCGGGA
	14103	CCTCCCGGGACGAGAACTCA
	14104	CGAGAACTCATCCGGAGCCA
10	14105	TCCGGAGCCACAGGTGCACT
	14106	CAGGTGCACTGCCTGTGGAC
	14107	GCCTGTGGACTGTGCCTGCT
	14108 14109	TGTGCCTGCTGTCAAATA
15	14110	GTGTCAAATACACTGCCTCC CACTGCCTCCAGCTCGGCCT
10	14111	AGCTCGGCCTCCAGGGATGC
	14112	CCAGGGATGCTTCCTGTGCC
	14113	TTCCTGTGCCATAACTTCCA
••	14114	ATAACTTCCAACGACTCCTG
20	14115	ACGACTCCTGGGCCGGGGAT
	14116 14117	GGCCGGGGATGCCTCCAGG
	14117	GCCTCCCAGGCTATGGTTGC CTATGGTTGCATCCAGAGCT
	14119	ATCCAGAGCTTCCTCGACTC
25	14120	TCCTCGACTCCTGACAATCC
	14121	CTGACAATCCCTGCGCAGTC
	14122	CTGCGCAGTCAATGCCTCTT
	14123	AATGCCTCTTGGGCTGTGCA
30	14124 14125	GGGCTGTGCACGGTATCTGG CGGTATCTGGGCCATTGATA
30	14125	GCCATTGATATTTCTTCCTC
	14127	TTTCTTCCTCCTCTTCCTCC
	14128	CTCTTCCTCCTCCAGCGTCA
	14129	TCCAGCGTCAGCTCAAACTG
35	14130	GCTCAAACTGGAACTTGTCA
	14131	GAACTTGTCAGGCAGGGGTG
	14132 14133	GGCAGGGGTGGCCTGG GGTGGCCTGGCCCCCTTGAC
	14134	CCCCTTGACTCCTCCTCGG
40	14135	TCCTCCTCGGGTGGCGGAGA
	14136	GTGGCGGAGATGGGCTCTGC
	14137	TGGGCTCTGCCGGATGGCGC
	14138	CGGATGGCGCTGTAGTACCA
45	14139 14140	TGTAGTACCAGTCCCGGTTG GTCCCGGTTGTCCTCCAAAG
73	14141	TCCTCCAAAGTGTCCAAGAT
	14142	TGTCCAAGATCTCCTGGGCA
	14143	CTCCTGGGCATCTGGGTGGA
	14144	TCTGGGTGGACAAGGTCCGC
50	14145	CAAGGTCCGCCCAGGTCTCC
	14146	CCAGGTCTCCCACAATGGGT CACAATGGGTGCACAATGTA
	14147 14148	GCACAATGGGTGCACAATGTA
	14149	GTCAATAAAACCCACCTGAG
55	14150	CCCACCTGAGACTTCTCCAC
	14151	ACTTCTCCACGGAGGCAGTG
	14152	GGAGGCAGTGTGCTTGTCAC
	14153	TGCTTGTCACACATGGGGCT
60	141 <i>5</i> 4 14155	ACATGGGGCTGATTTCCATG GATTTCCATGCCACGCTCGC
00	14155	CCACGCTCGCGCTCTCGGTC
	14157	GCTCTCGGTCACCCTGCTGG
	14158	ACCCTGCTGGAAGAACTCGG
	14159	AAGAACTCGGCCATGATGCG
65	14160	CCATGATGCGGTCTGTCCAC
	14161	GTCTGTCCACTGGCGGTACA
	14162 14163	TGGCGGTACAGCTCCAGCGG GCTCCAGCGGCTTGGTGGG
	14164	CTTGGTGGGGTTGCTGAGGT
70	14165	TTGCTGAGGTCGGCACAGTG
-	14166	CGGCACAGTGCACCATGTTC
	14167	CACCATGTTCCGGAGGACCT
	14168	CGGAGGACCTGGATGCGGTC
75	14169	GGAGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
75	14170	GGAGTAGTTATCTAGCAGGA

	14171	TCTAGCAGGAGGACCCCTGA
	14172	GGACCCCTGAGCTGGTCACT
	14173	GCTGGTCACTTTCTTGGTCT
	14174	TTCTTGGTCTCCACCATGGT
5	14175	CCACCATGGTCTTCAGGTCA
	14176	CTTCAGGTCAGCCAGGAGGC
	14177	GCCAGGAGGGTCATGTGCTT
	14178	TCATGTGCTTGGACATGTCC
10	14179	GGACATGTCCGTGGCCAGCA
10	14180 14181	GTGGCCAGCACCATGTCGAT
	14182	CCATGTCGATGACCATCTTG GACCATCTTGCGTAGGCTCT
	14183	CGTAGGCTCTGCCGCTGGCG
	14184	GCCGCTGGCGCTTGCTGAGG
15	14185	CTTGCTGAGGTTCTGGAAGA
	14186	TTCTGGAAGATGTCGCAGTT
	14187	TGTCGCAGTTGTCCTCCTGC
	14188	GTCCTCCTGCAGCAGCTTGA
•	14189	AGCAGCTTGAAGCCCACGGC
20	14190	AGCCCACGCCAGGTGGTGA
	14191	CAGGTGGTGATTCTCGAGCA
	14192 14193	TTCTCGAGCACCGACTCATC CCGACTCATCGTTGTACATG
	14194	GTTGTACATGAGCGCCAGCT
25	14195	AGCGCCAGCTCCGAATTGGT
	14196	CCGAATTGGTGTTGATGAGG
	14197	GTTGATGAGGAACTGGTTGG
	14198	AACTGGTTGGAGACCCCAGG
	14199	AGACCCCAGGGTGATCCACA
30	14200	GTGATCCACATCGTGGATGG
	14201	TCGTGGATGGCAGCCGCGAA
	14202	CAGCCGCGAAGAGGGCGGCC
	14203 14204	GAGGGCGGCGAGAATCTCCA AGAATCTCCAGGTCCGTGAA
35	14204	GGTCCGTGAACACTGCATCT
55	14206	CACTGCATCTAGTGCAGGCG
	14207	AGTGCAGGCGTGGCCAGCAC
	14208	TGGCCAGCAGTACGTGGGTG
	14209	TACGTGGGTGGACTGCAGCA
40	14210	GACTGCAGCACGTCAGCTGC
	14211	CGTCAGCTGCGTGCAGGCTG
	14212 14213	GTGCAGGCTGTTATGGTAGG
	14213	TTATGGTAGGCCACGTCAGC CCACGTCAGCGTGGTAGTGA
45	14215	GTGGTAGTGATCCTCCAGCG
	14216	TCCTCCAGCGTCAGCATGTA
	14217	TCAGCATGTATGTCACCATC
	14218	TGTCACCATCGTGTCCACCG
	14219	GTGTCCACCGGGATGCGGAA
50	14220	GGATGCGGAATTTCTTCAGC
	14221	TTTCTTCAGCAGGTCCCGCT
	14222	AGGTCCCGCTCCTGGAATAT
	14223 14224	CCTGGAATATCATGTACATG CATGTACATGATGCAGGTGA
55	14225	ATGCAGGTGAGTGAGCGGCC
	14226	GTGAGCGGCCTCCAGCGTAA
	14227	TCCAGCGTAATCCGACACGC
	14228	TCCGACACGCAAAAGATGTT
	14229	.AAAAGATGTTCAGGCCCCAC
60	14230	CAGGCCCCACTTGTTCAGGT
	14231	TTGTTCAGGTTCTCCAGTTC
	14232	TCTCCAGTTCTTGGGCCAGG TTGGGCCAGGAGCTCTTCTT
	14233 14234	AGCTCTTCTTGATCGGTCTT
65	14235	GATCGGTCTTCACCCCAAAT
0.5	14236	CACCCCAAATCGGGGAATGT
	14237	CGGGGAATGTTAGAGTTGTT
	14238	TAGAGTTGTTCAGGCTGTTA
	14239	CAGGCTGTTACTATGCATCA
70	14240	CTATGCATCAACTTTTTCAA
	14241	ACTITITCAACCCTGTGATT
	14242	CCCTGTGATTTGGGACATGG
	14243	TGGGACATGGGCTGTAAGTG GCTGTAAGTGTGGTACAGGG
75	14244 14245	TGGTACAGGGGGGGGGGG
, ,	14247	100111011000000000000000000000000000000

	14246	GGCGGGGGCGGCTGGGAGGG
	14247	GCTGGGAGGGTCTTGGTCGC
	14248	TCTTGGTCGCGGCGCTTGCT
_	14249	GGCGCTTGCTGTTTTTCTCG
5	14250	GTTTTTCTCGTTCCTTCATC
	14251 14252	TTCCTTCATCGTGGGTGATG
	14252	GTGGGTGATGGGATCTCCAC GGATCTCCACTTCATTCTGT
	14254	TTCATTCTGTTTGTCCAGGA
10	14255	TTGTCCAGGAATGTTGTGGA
	14256	ATGTTGTGGAAATGTACTCT
	14257	AATGTACTCTGAGACCTGGT
	14258	GAGACCTGGTTTCCGGACCT
1 =	14259	TTCCGGACCTGCTCATTTCT
15	14260	GCTCATTTCTGACAGGTGTG
	14261 14262	GACAGGTGTGTGAGCTCACG TGAGCTCACGGTTCAACATC
	14263	GTTCAACATCCTTTTGAACT
	14264	CTTTTGAACTGGTCCCACCA
20	14265	GGTCCCACCAGCCCACCAGC
	14266	GCCCACCAGCCAAGGCTTAG
	14267	CAAGGCTTAGAGCAGGTCTC
	14268	AGCAGGTCTCGCAGAAGAAA
0.5	14269	GCAGAAGAAATCCACCAAGG
25	14270	TCCACCAAGGGCATCTTGGA
	14271	GCATCTTGGAGACTTAGCCC
	PDE4A-I 14272	CCATGATGCGGTCTGTCCA
	14273	TCTTCAGCAGGTCCCGCTCCTG
30	14274	AACTGGTTGGAGACCCCAGG
	14275	CCTGCAGCAGCTTGAAGCCCAC
	14276	GCTGAGGTTCTGGAAGAT
	14277	GTGGCCAGCACCATGTC
~ -	14278	TTCTTGGTCTCCACCATGGTCTT
35	14279	CAGCGGCTTGGTGGGGTTGCT
	14280	GTCCACTGGCGGTACAG
	14281 14282	TGCTTGTCACACATGGG GTCCACTGGCGGTACAGCT
	14283	TGTGCTTGTCACACATGGGGCT
40	14284	TTGTCCTCCAAAGTGTCCAA
	14285	CTTGGTGGGGTTGCTCAG
	14286	AGAGTCAGTTCAAACTG
	14287	AAGACCCCATTTGTTCA
4.5	14288	TCTGCCCATGTCTCCCA
45	14289	AACTTGTTGGAGGCCATCTC
	14290 14291	CGGTCCGTCCACTGGCGGTACA TGCTTGTCACACATGGG
	PDE4C	TOCTTOTCACACATOOG
	14292	TITITITITITITITITIC
50	14293	TTTTTTTTCTTTTTTGAGA
	14294	TTTTTTGAGACAGTGTCTTG
	14295	CAGTGTCTTGCTCTGTCAGC
	14296	CTCTGTCAGCCCCAGGCTGG
55	14297	CCCAGGCTGGAGTGCAGTGG
دد	14298 14299	AGTGCAGTGGCATGATGTCG CATGATGTCGGCTCACTGCA
	14300	GCTCACTGCAACCTCCACCT
	14301	ACCTCCACCTCCTGAATTCA
	14302	CCTGAATTCAAGTGATTCTC
60	14303	AGTGATTCTCCTGCCTCAGC
	14304	CTGCCTCAGCCTCCCCAGTA
	14305	CTCCCCAGTAGCTGGGATTA
	14306	GCTGGGATTACAGGCACCCG
<i>(</i>	14307	CAGGCACCGCCACCATGCC
65	14308	CACCATGCCAGCCAATTT
	14309 14310	CAGCCAATTTTTGTATTTTT TTGTATTTTTAGTAGAGATG
	14310	AGTAGAGATGGGGTTTCACC
	14311	GGGTTTCACCATGTTGGCCA
70	14313	ATGTTGGCCAGGCTGGTCTC
	14314	GGCTGGTCTCGAACTCCTAA
	14315	GAACTCCTAACCTCAGGTGA
•	14316	CCTCAGGTGATCCACCTGCC
	14317	TCCACCTGCCTCAGCCTCCC
75	14318	TCAGCCTCCCAAAGTGCTGG

	14319	AAAGTGCTGGGATTATAGGC
	14320	GATTATAGGCATGGGCCACT
	14321	ATGGGCCACTGTGCTCGGCC
_	14322	GTGCTCGGCCTCAGAGCCCC
5	14323 14324	TCAGAGCCCCGTCTCTTTCC
	14324 14325	GTCTCTTCCTTTCCTTCTC
	14325	TTTCCTTCTCTTTTCTTTTT
	14327	ATTTTTAGACAGGATCTTGC
10	14328	AGGATCTTGCTGTTTGCCC
	14329	TGTGTTGCCCAGGCTGGAGT
	14330	AGGCTGGAGTGCAGTGATGC
	14331	GCAGTGATGCAGTCATAGCT
15	14332 14333	AGTCATAGCTCTCTCAGCC
13	14333	CTCTTCAGCCTCCAACTCCT TCCAACTCCTGGGCTCAAGC
	14335	GGGCTCAAGCGATCCCCTTT
	14336	GATCCCCTTTGTCTCAACCT
	14337	GTCTCAACCTTCTGAGTAGC
20	14338	TCTGAGTAGCTGGGATTCTC
	14339	TGGGATTCTCAGGTGCACAC
	14340	AGGTGCACACCACCATGCCT
	14341 14342	CACCATGCCTGGCTAATTTT
25	14342	GGCTAATTTTTTTTTTCÅGA TTTTTTCAGAGATGGTGGGG
23	14344	GATGGTGGGGGTCTTGCTAT
	14345	GTCTTGCTATGTTGCCCAGG
	14346	GTTGCCCAGGCTGGTCTCAA
	14347	CTGGTCTCAAACTCCTGAGC
30	14348	ACTCCTGAGCTTAAGCAGTC
	14349	TTAAGCAGTCCTCCCACCTC
	14350 14351	CTCCCACCTCAGCCTCCCAA
	14351	AGCCTCCCAAAGTACCGGGA AGTACCGGGATTACAGGCAT
35	14353	TTACAGGCATAAGCCACTAT
	14354	AAGCCACTATGCCTTGCCCA
	14355	GCCTTGCCCAGCCCTTCTTT
	14356	GCCCTTCTTTTCTGCTCCTC
40	14357	TCTGCTCCTCTTCCTGCCCC
40	14358 14359	TTCCTGCCCCCTACCGTAGT CTACCGTAGTTTCAGAAACA
	14360	TTCAGAAACAAAACTGGGTA
	14361	AAACTGGGTATGAGTGAAGC
	14362	TGAGTGAAGCTTTGGTGCTG
45	14363	TTTGGTGCTGAAAATTTTCC
	14364	AAAATTTTCCCCACTCACAT
	14365	CCACTCACATTTCCATGCTC
	14366 14367	TTCCATGCTCTTGCAGAGAG TTGCAGAGAGCCGCTTGGTA
50	14368	CCGCTTGGTAGAGGAAGACA
•	14369	GAGGAAGACAGGGAGATGCC
	14370	GGGAGATGCCTTTGGGATGG
	14371	TTTGGGATGGTCTCCTGACT
~ ~	14372	TCTCCTGACTCCCCACCCTT
55	14373	CCCACCTTTGTGCAGGGC
	14374 14375	TGTGCAGGGCTACTACAGAG TACTACAGAGGCAGAAAGCT
	14376	GCAGAAAGCTGGCCCGAAGT
	14377	GGCCCGAAGTAGATGAGCAA
60	14378	AGATGAGCAATAAATATTTG
	14379	TAAATATTTGATAAAGAAGG
	14380	ATAAAGAAGGAAATAATTAA
	14381	AAATAATTAAGTGACAGATG
65	14382 14383	GTGACAGATGTGACTCAAGA TGACTCAAGAGTGACCACTG
03	14384	GTGACCACTGGAGAGGGTGG
	14385	GAGAGGGTGGACTAGAGGCT
	14386	ACTAGAGGCTCCAGCAGACA
	14387	CCAGCAGACAGCACCTCTCC
70	14388	GCACCTCTCCTCACAGGGAT
	14389	TCACAGGGATAGAAGCCCAG
	14390	AGAAGCCCAGGAGAAAGACA GAGAAAGACACCAGGGCATC
	14391 14392	CCAGGGCATCGTAAGAGGCT
75	14392	GTAAGAGGCTGCCCCTTAGA

	14394	GCCCCTTAGAGAGCTCTTTT
	14395	GAGCTCTTTTAGGCAAGTCT
	14396	AGGCAAGTCTAGGGTCAGAG
	14397	AGGGTCAGAGTGGACCCCAG
5	14398	TGGACCCCAGCCAGGTGCCT
	14399	CCAGGTGCCTCCAATTAGAC
	14400	CCAATTAGACCCTGGGAGCC
	14401	CCTGGGAGCCACCTATAACT
10	14402 14403	ACCTATAACTAAGAGCTTGA
10	14404	AAGAGCTTGATTGTCTCCCT TTGTCTCCCTAAATGGGTGG
	14405	AAATGGGTGGGAAAGTGAAG
	14406	GAAAGTGAAGCAGGAGCCAG
	14407	CAGGAGCCACATGGAGCCTC
15	14408	ATGGAGCCTCTTCCTGGAAA
	14409	TTCCTGGAAAGTCTGCCTGC
	14410	GTCTGCCTGCCAAGAGCCAA
	14411	CAAGAGCCAAAGGGCTTTAC
•	14412	AGGCTTTACCATCCATTGC
20	14413	CATCCATTGCCCCTGCAGTT
	14414	CCCTGCAGTTCACGCAGGGC
	14415 14416	CACGCAGGGCTGGCCCTAAG TGGCCCTAAGTCCTCTGGTT
	14417	TCCTCTGGTTGTCGAGGGGT
25	14418	GTCGAGGGGTAAGTCCCCAG
23	14419	AAGTCCCCAGGGTCTGGGCC
	14420	GGTCTGGGCCGGCTTCAGGG
	14421	GGCTTCAGGGGACAGGAGTT
	14422	GACAGGAGTTCAGTGTCAGG
30	14423	CAGTGTCAGGCAACTCCAAG
	14424	CAACTCCAAGGCCTCTTTGG
	14425	GCCTCTTTGGCTAAAGCTGT
	14426	CTAAAGCTGTCTCTTCCCCC
35	14427 14428	CTCTTCCCCCTCTCTTCTT
33	14429	TCCTCTCTTCCTCCTCATC CCTCCTCATCCTCTTCCTCT
	14430	CTCTTCCTCTGCCTCCTCCA
	14431	GCCTCCTCCAGAGTCAGTTC
	14432	GAGTCAGTTCAAACTGGAAT
40	14433	AAACTGGAATCTGTCAGGCC
	14434	CTGTCAGGCCCGTCCCGCTC
	14435	CGTCCCGCTCGGGGTTGGTG
	14436	GGGGTTGGTGAGGTCTGAGG
15	14437	AGGTCTGAGGGACTTCGGGG
45	14438	GACTTCGGGGGATCTTGCTC
	14439 14440	GATCTTGCTCTGGTACCACT TGGTACCACTCTCGATTGTC
	14441	CTCGATTGTCCTCCAGCGTG
	14442	CTCCAGCGTGTCCAGCAGGT
50	14443	TCCAGCAGGTCCTGTGCATC
	14444	CCTGTGCATCTGGGTGGACC
	14445	TGGGTGGACCAGGTCAGCCC
	14446	AGGTCAGCCCAAGTCTCCCA
	14447	AAGTCTCCCACAGTGGGTGA
55	14448	CAGTGGGTGAGCAATGTAGT
	14449	GCAATGTAGTCAATGAAACC CAATGAAACCCACCTGGGAC
	14450 14451	CACCTGGGACTTCTCCACTG
	14452	TTCTCCACTGAGGCCGTATG
60	14453	AGGCCGTATGCTTGTCACAC
	14454	CTTGTCACACATGGGACTGA
	14455	ATGGGACTGATGTCCAGGCC
	14456	TGTCCAGGCCCGACTCACGC
	14457	CGACTCACGCTCGCGGTCTC
65	14458	TCGCGGTCTCCCTGCTGGAA
	14459	CCTGCTGGAAGAACTCGGCC
	14460	GAACTCGGCCATGATGCGGT
	14461	ATGATGCGGTCCGTCCACTG
70	14462 14463	CCGTCCACTGGCGGTACAGG GCGGTACAGGGGCAGCGGCT
, ,	14464	GGCAGCGGCTTGGTGGGGTT
	14465	TGGTGGGGTTGCTCAGATCA
	14466	GCTCAGATCAGCACAGTGCA
	14467	GCACAGTGCACCAGGTTCTG
75	14468	CCAGGTTCTGCAAGACCTGG

	14469	CAAGACCTGGATTCGGTCGG
	14470	ATTCGGTCGGAATAGTTGTC
	14471	AATAGTTGTCCAGGAGGAGG
5	14472	CAGGAGGAGGACACCGAGGC
5	14473 14474	ACACCGAGGCTTGTCACCTT TTGTCACCTTCTTGGTCTCC
	14475	CTTGGTCTCCACCATGGTCT
	14476	ACCATGGTCTTGAGGTCGGC
	14477	TGAGGTCGGCCAGGAGGTTC
10	14478	CAGGAGGTTCATGTGTTTGG
	14479	ATGTGTTTGGACATGTCTGT
	14480	ACATGTCTGTGGCCAGCACC
	14481 14482	GGCCAGCACCATGTCAATGA ATGTCAATGACCATCCTGCG
15	14483	CCATCCTGCGCAGACTCAGT
-	14484	CAGACTCAGTCGCTGCTTGG
	14485	CGCTGCTTGGCGCTGAGGTT
	14486	CGCTGAGGTTCTGGAAGATA
	14487	CTGGAAGATATCGCAGTTCT
20	14488	TCGCAGTTCTCTGCCTGCAG
	14489 14490	CTGCCTGCAGCAGCTTGAAG CAGCTTGAAGCCCACAGCCA
	14491	CCCACAGCCAGGTGATGGTT
	14492	GGTGATGGTTCTCCAGCACC
25	14493	CTCCAGCACCGAGGCGTCGT
	14494	GAGGCGTCGTTGTACATAAG
	14495	TGTACATAAGCGCCACGTCT
	14496	CGCCACGTCTGAGTTGGTGT
30	14497	GAGTTGGTGTTAATCAGAAA TAATCAGAAACTGGTTGGAG
30	14498 14499	CTGGTTGGAGACCCCAGGAT
	14500	ACCCAGGATGGTCCACGTC
	14501	GGTCCACGTCGTGGATGGCG
	14502	GTGGATGGCGCTTGCAAAGA
35	14503	CTTGCAAAGAGGGCAGCCAG
	14504	GGGCAGCCAGGATTTCCAAG
	14505	GATTTCCAAGTCTGTGAACA
	14506 14507	TCTGTGAACACAGCCTCGAG CAGCCTCGAGGGCGGGCGTA
40	14508	GGCGGCGTAGCCAGCAGCA
	14509	GCCAGCAGCACATGCGTGGA
	14510	CATGCGTGGACTGGGCCACG
	14511	CTGGGCCACGTCGGCGCAT
45	14512	TCGGCGGCATGTAGGCTGTT
43	14513 14514	GTAGGCTGTTGTGGTAGGCC GTGGTAGGCCACATTGGCGT
	14515	ACATTGGCGTGGTAGTGACC
	14516	GGTAGTGACCCTCCAGCATC
	14517	CTCCAGCATCAGCAGGTAGG
50	14518	AGCAGGTAGGTGGCCAGTGT
	14519	TGGCCAGTGTGTCTGCTGGG
	14520 14521	GTCTGCTGGGATCTGGAATG ATCTGGAATGTCTTCAGCAG
	14521	TCTTCAGCAGGTCCCGCTCC
55	14523	GTCCCGCTCCTGAAAAATGC
	14524	TGAAAAATGCTGAATATGAT
	14525	TGAATATGATAGCTGTGAGG
	14526	AGCTGTGAGGGGCCGGTTCC
60	14527	GGCCGGTTCCCACTTACGTC
60	14528 14529	CACTTACGTCCGCCACCTTG CGCCACCTTGAACACATCAA
	14529	AACACATCAAGTCCCCACTT
	14531	GTCCCCACTTGTTGGTGTCT
	14532	GTTGGTGTCTTCTAGCTCCT
65	14533	TCTAGCTCCTTGGCCAGTTG
	14534	TGGCCAGTTGCTCCTCGG
	14535	CTCCTCCTGGTCAGTCTGGA
	14536	TCAGTCTGGACCCCAAAGCG
70	14537 14538	CCCCAAAGCGTGGGACAGTG TGGGACAGTGGCTGAGGAGA
, 5	14539	GCTGAGGAGAGGCTGGCACT
	14540	GGCTGGCACTGTGGCAGAGC
	[454]	GTGGCAGAGCCCATGTAGGC
20	14542	CCATGTAGGCCACTGATCCG
75	14543	CACTGATCCGGGACATGGGC

	14544	GGACATGGGCTGTGGGGCCT
	14545	TGTGGGGCCTCCTCAGCGGT
	14546	CCTCAGCGGTCACCTTGGGC
_	14547	CACCTTGGGCAGCTCCACCT
5	14548	AGCTCCACCTCGGTCTGCTG
	14549 14550	CGGTCTGCTGGTCCAGGAAG
	14551	GTCCAGGAAGGTCCGGGAGA GTCCGGGAGATGTACTCGGA
	14552	TGTACTCGGACACCTGGTTC
10	14553	CACCTGGTTCCCGGAGCGGC
	14554	CCGGAGCGGCTGGTTTCGGA
	14555	TGGTTTCGGACAGGTGGGTC
	14556	CAGGTGGGTCAACTCCCGGT
15	14557 14558	AACTCCCGGTTCAGGATCCG TCAGGATCCGCTTGAACTTG
13	14559	CTTGAACTTGTTGGAGGCCA
	14560	TTGGAGGCCATCTCCCCCAC
	14561	TCTCCCCACCGAGTGCCGG
	14562	CGAGTGCCGGGTCTGCAGCG
20	14563	GTCTGCAGCGTCTCCAACTG
	14564	TCTCCAACTGATCCAGGCAC
	14565	ATCCAGGCACCAGTCCAGCT
	14566 14567	CAGTCCAGCTCGTCTAGCGT CGTCTAGCGTCTCCAATGCC
25	14568	CTCCAATGCCAGCTTCTGCC
23	14569	AGCTTCTGCCCCGTGTCCTC
	14570	CCGTGTCCTCTGCAGGAGGG
	14571	TGCAGGAGGGAGCTGATTGC
• •	14572	AGCTGATTGCTGGATGAAGG
30	14573	TGGATGAAGGGTTTCCGACG
	14574	GTTTCCGACGGGTCCCTGCT
	14575 14576	GGTCCCTGCTTGGCTGCTCC TGGCTGCTCCTAGGCATTGC
	14577	TAGGCATTGCTGGCGGGCAA
35	14578	TGGCGGCAAGGGCCGCCAC
	14579	GGGCCGCCACGTTGCTCCGA
	14580	GTTGCTCCGAACGGTCCGCA
	14581	ACGGTCCGCAGACTGGCCAG
40	14582 14583	GACTGGCCAGGACCTGGGCA GACCTGGGCAAAGGGCGTCA
40	14584	AAGGCCTCACAATCATGTC
	14585	CAATCATGTCCTCTCCATGT
	14586	CTCTCCATGTAGGTCGCTGG
	14587	AGGTCGCTGGCCACAGAGGA
45	14588	CCACAGAGGAGTTCCGAGAC
	14589	GTTCCGAGACATGGCCTTGG
	14590 14591	ATGGCCTTGGGCGAGAGTTC GCGAGAGTTCATAGTCGCTA
	14592	ATAGTCGCTATCTGAGCGGT
50	14593	TCTGAGCGGTACAGGAAGGA
	14594	ACAGGAAGGACTCGCGCCGC
	14595	CTCGCGCCGCTGGCTGTGCG
	14596	TGGCTGTGCGGGACTGGAGC
55	14597	GGACTGGAGCCTGCATAATC
55	14598 14599	CTGCATAATCCGGCCCAGGC CGGCCCAGGCCAGGGCTGGA
	14600	CAGGGCTGGACTGAGGGTCC
	14601	CTGAGGGTCCAGGGCCCTCC
	14602	AGGGCCCTCCTCCCACACGA
60	14603	TCCCACACGAGAGCCCATTT
	14604	GAGCCCATTTTCCAGGTCAA
	14605	TCCAGGTCAAAGCGCCTGCA
	14606	AGCGCCTGCAGGAGGAAACG GGAGGAAACGGGCCAGGAGA
65	14607 14608	GGCCAGGAGAGCCGCGACTT
05	14609	GCCGCGACTTCCTGAGCTCC
	14610	CCTGAGCTCCGGCCGCGGC
	14611	GGCCGCGGGCTCAGGTCCCT
70	14612	TCAGGTCCCTCTCGCGGCAG
70	14613	CTCGCGGCAGCCCGCGGACT
	14614	CCCGCGGACTTGTCCGGATC TGTCCGGATCCGAATAGAAG
	14615 14616	CGAATAGAAGCGCTGTTGGA
	14617	CGCTGTTGGATGCGGATGGG
75	14618	TGCGGATGGGGCGCCGGGGT

	14619	GCGCCGGGGTTGCCGCCACA
	14620	TGCCGCCACAGGTGCTTCGG
	14621	GGTGCTTCGGGGCTCTGGTC
	14622	GGCTCTGGTCATGCTGTGGC
5	14623	ATGCTGTGGCGGCGCGAGA
	14624	GGCCGCGAGAGCGACTCAAC
	14625	GCGACTCAACCTGCTGCAAG
	14626	CTGCTGCAAGCCTCTGCCCC
	14627	CCTCTGCCCCTTCGCCGACC
10	14628	TTCGCCGACCCCCAGGTTCT
	14629	CCCAGGTTCTCCATGCGCCA
	14630	CCATGCGCCAGAGAAAGGCT
	14631	GAGAAAGGCTGGATGAAGGG
	14632	GGATGAAGGGTTTCCGACGG
15	14633	TTTCCGACGGGTCCCTGCTT
	14634	GTCCCTGCTTGGCTGCTCCT
	14635	GGCTGCTCCTAGGCATTGCT
	14636	AGGCATTGCTGGCGGGCAAG
	14637	GGCGGCAAGGGCCGCCACG
20	14638	GGCCGCCACGTTGCTCCGAA
	14639	TTGCTCCGAACGGTCCGCAG

25

30

In one preferred embodiment, the links between neighboring mononucleotides are phosphodiester links. In another preferred, at least one mononucleotide phosphodiester residue of the anti-sense oligonucleotide(s) is substituted by a methylphosphonate, phosphotriester, phosphorothioate, phosphorodithioate, boranophosphate, formacetal, thioformacetal, thioether, carbonate, carbamate, sulfate, sulfonate, sulfamate, sulfonamide, sulfone, sulfite, sulfoxide, sulfide, hydroxylamine, 2'-O-methyl, methylene(methyimino), methyleneoxy (methylimino), phosphoramidate residues, and combinations thereof. The oligos having one or more phosphodiester residues substituted by one or more of the other residues are generally longer lasting, given that these residues are more resistant to hydrolysis than the phosphodiester residue. In some cases up to about 10%, about 30%, about 50%, about 75%, and even all phosphodiester residues may be substituted (100%).

In another preferred embodiment, the multiple target anti-sense oligo (MTA) of the invention comprises at least about 7 mononucleotides, in some instances up to 60 and more mononucleotides, preferably about 10 to about 36, and more preferably about 12 to about 21 mononucleotides. However, other lengths are also suitable depending on the length of the target macromolecule. Examples of multi-targeted anti-sense (MTA) oligos of the invention are provided in Table 3 below, which includes ninety-four sequences (SEQ ID NOS.: 2316 through 2410).

Table 3: MTA Oligos, Location Targeted & Target **MTA** Oligo SEQ. ID Location Compound Target No. Targeted **HUMNFKBP65A AS** 5'=1 CCC GGC CCC GCC TCG TGC C 12388 EPI 2192 CGT CCB TGC CGC GGG CCC 12389 5'=28(AUG)EPI 2193 GCC CCG CTG CTT GGG CTG CTC TGC CGG G 5'=65 12390 **EPI 2194** TCT GTG CTC CTC TCG CCT GGG 12391 5'=137 EPI 2195 45 TGG TGG GGT GGG TCT TGG TGG 12392 5'=159 **EPT 2196** CTG TCC CTG GTC CTG TG 12393 5'=196 **EPI 2197** GGT CCC GCTTCT TC 12394 5'=362**EPI 2198** GGG GTT GTT GTT GGT CTG G 12395 5'=401 EPI 2199 TGT CCT CTT TCT GC 12396 5'=656 **EPI 2200** 50 GCC TCG GGC CTC CC 12397 5'=697 **EPI 2201** GGC TGG GGT CTG CGT 12398 5'=769 EPI 2202 GGC CGG GGG TCG GTG GGT CCG CTG 12399 5'=953 EPI 2203 GGG CTG GGG TGC TGG CTT GGG G 12400 5'=1022 **EPI 2204** GGG GCT GGG GCC TGG GCC 12401 5'=1208 **EPI 2205** 55 GCC TGG GTG GGC TTG GGG GC 12402 5'=1272 EPI 2206 GCT GGG TCT GTG CTG TTG CC 12403 5'=1362 2207 EPI GTT GTG TGG GGG GCC 12404 2208 5'= 1451 GCT GGG TCG GGG GGC CTC TGG GCT GTC 12405 5'=1511 EPI 2209 GCC CCG GGG CCC CC 12406 5'=1550 EPI 2210 TGG CTC CCC CCT CC 12407 5'=1772 **EPI 2211** GCT CCC CCC TTT CC 12408 5'=1863 **EPI 2212** CGG ACG AAG ACA GAG A 12409 5'=1979 **EPI 2213** GGC TTT GTG GGC TC 12410 5'=2011 **EPI 2214** GCC TGC TCT CCC CC EPI 2215 12411 5'=2312 65 CCC GGC CCC GCC BCG BBC C 12412 intron EPI 2192-01A HSU50136C4Synth

	CCC GGC CCC GCC BCG	12413	intron	EPI 2192-01B	
	CCC GGC CCC GCC BCG BBC C	12414	5'untr	EPI 2192-02A	HTIMI-T POX5LO
	CCC GGC CCC GCC BCG	12415	5'untr	EPI 2192-02B	
	CCC GBC CCC GCC TCB BG	12416	trans		HSNFKBS Subunit
5	CCC GBC CCC GCC TC	12417	trans	EPI 2192-03B	NSNFRBS Subdiffe
,	CCG GCC CCG CCT C				manan:
		12418	5'untr	EPI 2192-04	TGFβR1
	CCC GBB CCC GCB TBG TGC C	12419	5'trans		HSU58198Il enhan
	CCC GCB TBG TGC C	12420	5'untr	EPI 2192-05B	
	CCC GGB CCC BCC BBG TGC C	12421	3'trans	EPI 2192-06	HSVECAD
10	CBG BBC CCG CCT CGT GCC	12422	intron	EPI 2192-07A	NFKB2
	C CCG CCT CGT GCC	12423	intron	EPI 2192-07B	NFKB2
	CCG GCB CCG CCT CBT GCC	12424	5'trans	EPI 2192-08	Carboxypep
	CCG GCC CCG CCB CBT GCC	12425	3'trans	EPI 2192-09	HumADRA2Cq2AdrKid
	CCC GBC CCC GBC TCG	12426	5'untrs	EPI 2192-10	HUMFK506B
15	CCC GGC CBC GBC TCG	12427	5'untrs	EPI 2192-11	HSNBARKS1 & AdrKin
	CCC GGC CCB GCC TBG	12428	5'UTR	EPI 2192-12	HSNFXN1 (NFKB1)
	CCC GGC BCB GBC TCG TBC C		3'UTR		
	CCC GGC BCB GBC TCG TBC C	12429	3 01R	EPI 2192-13	HSILF(transcrp.
•	600 000 000 000				Factor ILF)
20	CCC GGC CCC GCC BCG	12413		EPI-2192-14	NFKB/C4Syn/5-LO/
20					TGFBrec1 MTA
	CCC GGC CCC GCC BCG	12430		EPI-2192-15	NFKB/C4Syn/5-LOMTA
	TCC BTG CCG CGG GC	12432	3' trans	EPI-2193-01	MBTOncogene
	TCC BTG CCB CGG GCC	12433	3' trans	EPI-2193-02	HSFGR2 (IG)
	TCC BTG CCB CGG GCC	12434	mid cod	EPI-2193-03	5-LO
25	TCC BTG CCB CBG GCC	12435	mid cod	EPI-2193-04	HUMTK14
	GTC CBT GBC GCG G	12436	3'trans	EPI-2193-05	HUMTNFR
	TC CBT GBC GCG GG	12437	AUG		Probl.HUMPTCH
	10 021 020 000 00	12437	AUG		cardiacK+channel
	TCT GBG CTC CTC TBB CCT GGG	12438	intr	EPI-2195-01	humCSPAcytotox.
30	Tel dad ele ele las eel dad	12430	IIICI,	BF1-2175-01	Ser. Protease
-	CTG TGC BCC TBB CBC CTG GG	12439	intr	EPI-2195-02	HSINOSX08induc.NOS
	TGT GBT CCB CTB GBC TGG G	12440	11101	EPI-2195-03	
	IGI GBI CCB CIB GBC IGG G	12440		FET-7132-02	HUMACHRM2musc.m2
	Mom con con no mon com c	10447		DDT 0105 04	acetylch.rec.
35	TCT GTB CTC BBC TCB CCT G	12441		EPI-2195-04	s86371s1
33	Mag mag man ann ann an	10445		777 0405 05	Neurokinin3Recept
	TGC TCC TCB CBB CTG GG	12442		EPI-2195-05	HUMMIP1 Amacro
					Inflam. Factor
	CTC CTC TBG CCT GG	12443		BPI-2195-06	HSNBARKS4
	β-Adr Rec Kinase				
40	GTG CTC CBB TCB BCT GGG	12444		EPI-2195-07	HSTNFR2SO6TNF R2
	GTG CBC CBB TCB CCT GGG	12445		EPI-2195-08	humfkbp fk506
	binding prot.				
	TCT GTG CBC CTC TBG BCT	12446	exon	BPI-2195-09	HSNBARKSleta-Adr.
					Recept.Kinase
45	CTG TBB TCC TBB CBC CTG G	12482	intron	EPI-2195-10	HUMIL8
	TGT GCT BBT CBC BCB TGG G	12448		EPI-2195-11	HSU50157 PDE4
	GTG CBC CBC TCB CCT G	12449	intron/exon	EPI-2195-12	IL-2 R
	CTG TGC BCC TCT C	12450	3'UTR	BPI-2203-05	IL-6 R HSIL6R
	CBG TGC BCC BCT CBC CTG	12451	intr/ex		HSTL2rG6
50	G TGC BCC BCT CBC CTG	12449	intr/ex	EPI-2203-06B	
50	CBC CTC TCB CCT GGG	12453		EPI-2203-00B	
	C CTC TCB CCT GGG	12454		BPI-2203-07B	
	GCT CCB CTC GCC T	12455	_	BPI-2203-08	IL-6 R HSI6REC
~ ~	TGC TCC TCB CGC C			A EPI-2303-09	
55	GTT GTT GBT CTG G	12457	3'utr	EPI-2199-01	GATA-4Transcrip.
	Factor for IL-5				
	GGT TGB BBT TGG TCT TGG	12458	Coding	EPI-2199-02	TNFQ HUMTNFA
	GGT TGT TGB TGB TCT G	12459	Far 5'UTR	EPI-2199-03	HSSUBPIG(Sub Pr)
	GGG TTB BBG TTG BTC TGG	12460	Coding	EPI-2199-04	NeutrophilAdh.
60			=		R HUMNARIA
	GGG TTB BBG TTG BTC TGG	12461	HSHM2	EPI-2199-05	m2 Muscarinic R
	TTG TTG TBG BTC TGG	12462		EPI-2199-06	L1 LeukAadhProt
	GGG TBG BBG BGT CCG CTG	12463		EPI-2203-01	HUMGATA2A
	GGG TCB GBG GBT CBG CTG	12464		EPI-2203-02	IGE eps
65	GGG TBG GTG GGT C				
03	GGG TCG GBG GGT CBG C	12465	_	EPI-2203-03	HSGCSFR2
		12466		EPI-2203-04	TGFβ3
	GGG TGG GCT T	12485	HUMNK65PF	RO EPI-2206-01	
					TCell
70	GGG TGG GCT TGG G	12468	шмовове	ACTIVA 3 EPI 2206-02	ting Prot
. •	000 100 100 0	12400	MONTEREE	. DE 1 6600-06	NFKB/Prostagl. EP3 Rec
					DED KEC

	CCTGGGTGGGBBTGGG	12469	EPI 2206-03 HSNF2B/GCSF NFKB/GranuLocCSF/ Transcr.FactorNF2B
5	CCTGGBTGGGCBTGGG	12470	EPI-2206-04 HUMLAP/NFKB Leuk.Adhes.Prot
	GCCTGBGTGBBCTTGGG N2 S63833	12471	EPI2206-05 NFKB/Endothel
	CCCAVGVCCVCCCAGGC	11769	EPI 2206-06 NFKBAS13/B Lymph SerThrProt.Kinase
10	AGCCCACCCAGGC	11770	EPI2206-07 NFKBAS13/GCSF1 HSGCSFR1Rec
	BCCTGGGTGGGCTB	11771	EPI2206-08 NFKBAS13/GCSF1/ NK7TCELLACT.Prot
15	GGTGGGCTTGGG HSTGFB1 TGFB	11772	EPI 2206-09 NFKBAS13/
	CCBBGGTGGGCTTGGG	11773	EPI 2206-10 NFKBAS13/ HSTGFB1 TGFB1
	CTGGGTGGGBBTGGG HSGCSFR1 GCSFR1	11774	EPI 2206-11 NFKBAS13/
20	CCBGGGTGGGCTTGG	11775	EPI 2206-12 NFKBAS13/HUMCD30A LymphActAntiqCoding
	GGGTGGGCTTGG	11776	EPI-2206-12B NFKBAS13/HUMCD30A
	CCTGBGTGBGCBTGGG	11777	BPI 2206-13 NFKBAS13/HUMCAM1V
25			Vasc.Endoth.Cell Adh.Molec
	B: Universal Base		T.G.I. TOTAL

The MTA oligos of Table 3 and others in accordance with this invention are suitable for use with two or more of the targets, such as those listed in Table 4 below.

Table 4: Targets for the MTA Oligos of Table 3

Compound	Target
EPI 2010	Adenosine A1 receptor
EPI 2045	Adenosine A3 receptor
EPI 2873, EPI 2193	NFκB
EPI 1873	Interleukin-I
EPI 1857	Interleukin -5
EPI 2945	Interleukin -4
EPI 2977	Interleukin -8
EPI 2031	5-Lipoxygenase
EPI 1898	Leukotriene C-4 Synthase
EPI 1856 ·	Eotaxin
EPI 1131	ICAM
EPI 1085	VCAM
EPI 2085	TNFα
EPI 1908	PAF
EPI 1925	IL-4 receptor
EPI 2643	β2 aderenergic receptor kinase
EPI 2934	Tryptase
EPI 2033	Major Basic Protein
EPI 2795	Eosinophil Peroxidase

In Intracellular adhesion molecule VCAM: intracellular adhesion molecule VCAM: vascular cell adhesion molecule TNF: tumor necrosis factor PAF: platelet activating factor

The mRNA sequence of the targeted protein or the DNA sequence of the regulatory segment may be derived from the nucleotide sequence of the gene expressing or regulating the protein, whether for existing targets or

35

30

those to be found in the future. Sequences for many target genes of different systems are presently known. See, GenBank data base, NIH, the entire sequences of which are incorporated here by reference. The sequences of those genes, whose sequences are not yet available, may be obtained by isolating the target segments applying technology known in the art. Once the sequence of the gene, its RNA and/or the protein are known, anti-sense oligonucleotides are produced as described above and utilized to validate the target by in vivo administration and testing for a reduction of the production of the targeted protein in accordance with standard techniques, and of specific functions. As already described above, the anti-sense oligonucleotides may be of any suitable length, e.g., from about 7 to about 60 nucleotides in length, depending on the particular target being bound and the mode of delivery thereof. The anti-sense oligonucleotide preferably is directed to an mRNA region containing a junction between intron and exon or to regions vicinal to the junction. Where the anti-sense oligonucleotide is directed to an intron/exon junction, it may either entirely overlie the junction or may be sufficiently close to the junction to inhibit splicing out of the intervening exon during processing of precursor mRNA to mature mRNA, e.g., with the 3' or 5' terminus of the antisense oligonucleotide being positioned within about, for example, 10, 5, 3, or 2 nucleotide of the intron/exon junction. Also preferred are anti-sense oligonucleotides which overlap the initiation codon and, more generally, those that target the coding region of the target mRNA. When practicing the present invention, the anti-sense oligonucleotide(s), administered, whether DNA or RNA may be related in origin to the species to which it is administered or to other species including prokaryotes. When treating humans, human anti-sense may be used if desired, except when targeting foreign invaders. Anti-sense oligos to endogenous sequences of other species, however, are also clearly encompassed.

10

20

50

Other agents that may be incorporated into the present composition are one or more of a variety of therapeutic agents which are administered to humans and animals. Some of the categories of agents suitable for incorporation into the present composition and formulations are analgesics, pre-menstrual medications, menopausal agents, anti-aging agents, anti-anxiolytic agents, mood disorder agents, anti-depressants, anti-bipolar mood agents, anti-schizophrenic agents, anti-cancer agents, alkaloids, blood pressure controlling agents, hormones, antiinflammatory agents, muscle relaxants, soporific agents, anti-ischemic agents, anti-arrhythmic agents, contraceptives, vitamins, minerals, tranquilizers, neurotransmitter regulating agents, wound healing agents, antiangiogenic agents, cytokines, growth factors, anti-metastatic agents, antacids, anti-histaminic agents, anti-bacterial agents, anti-viral agents, anti-gas agents, appetite suppressants, sun screens, emollients, skin temperature lowering products, radioactive phosphorescent and fluorescent contrast diagnostic and imaging agents, libido altering agents, bile acids, laxatives, anti-diarrheic agents, skin renewal agents, hair growth agents, analgesics, pre-menstrual medications, anti-menopausal agents such as hormones and the like, anti-aging agents, anti-anxiolytic agents, nociceptic agents, mood disorder agents, anti-depressants, anti-bipolar mood agents, anti-schizophrenic agents, anticancer agents, alkaloids, blood pressure controlling agents, hormones, anti-inflammatory agents, other agents suitable for the treatment and prophylaxis of diseases and conditions associated or accompanied with pain and inflammation, such as arthritis, burns, wounds, chronic bronchitis, chronic obstructive pulmonary disease (COPD), inflammatory bowel disease such as Crohn's disease and ulcerative colitis, autoimmune disease such as lupus erythematosus, muscle relaxants, steroids, soporific agents, anti-ischemic agents, anti-arrhythmic agents, contraceptives, vitamins, minerals, tranquilizers, neurotransmitter regulating agents, wound and burn healing agents, anti-angiogenic agents, cytokines, growth factors, anti-metastatic agents, antacids, anti-histaminic agents, antibacterial agents, anti-viral agents, anti-gas agents, agents for reperfusion injury, counteracting appetite suppressants, sun screens, emollients, skin temperature lowering products, radioactive phosphorescent and fluorescent contrast diagnostic and imaging agents, libido altering agents, bile acids, laxatives, anti-diarrheic agents, skin renewal agents, hair growth agents, etc.

Among the hormones suitable for active agents of the invention, are female and male sex hormones such as premarin, progesterone, androsterones and their analogues, thyroxine and glucocorticoids, including Budesonide, Dexamethasone, Flunisolide, Triamcinolone, and others. Among the libido altering agents are Viagra and other NO-level modulating agents, among the analgesics are over-the-counter medications such as ibuprofen, oruda, aleve and acetaminophen and controlled substances such as morphine and codeine, among the anti-depressants are tricyclics, MAO inhibitors and epinephrine, γ -amino butyric acid (GABA), dopamine and serotonin level elevating agents, e.g. Prozac, Amytryptilin, Wellbutrin and Zoloft, among the skin renewal agents are Retin-A, hair growth agents such as Rogaine, among the anti-inflammatory agents are non-steroidal anti-inflammatory drugs (NSAIDs) and steroids, among the soporifics are melatonin and sleep inducing agents such as diazepam, cytoprotective, anti-ischemic and

head injury agents such as enadoline, and many others. Examples of agents in the different groups are provided in the following list. Examples of analgesics are Acetaminophen, Anilerdine, Aspirin, Buprenorphine, Butabital, Butorpphanol, Choline Salicylate, Codeine, Dezocine, Diclofenac, Diflunisal, Dihydrocodeine, Elcatoninin, Etodolac, Fenoprofen, Hydrocodone, Hydromorphone, Ibuprofen, Ketoprofen, Ketorolac, Levorphanol, Magnesium Salicylate, Meclofenamate, Mefenamic Acid, Meperidine, Methadone, Methotrimeprazine, Morphine, Nalbuphine, Naproxen, Opium, Oxycodone, Oxymorphone, Pentazocine, Phenobarbital, Propoxyphene, Salsalate, Sodium Salicylate, Tramadol and Narcotic analgesics in addition to those listed above. See, Mosby's Physician's GenRx. Examples of anti-anxiety agents include Alprazolam, Bromazepam, Buspirone, Chlordiazepoxide, Chlormezanone, Clorazepate, Diazepam, Halazepam, Hydroxyzine, Ketaszolam, Lorazepam, Meprobamate, Oxazepam and Prazepam, among others. Examples of anti-anxiety agents associated with mental depression are Chlordiazepoxide, Amitriptyline, Loxapine Maprotiline and Perphenazine, among others. Examples of anti-inflammatory agents are non-rheumatic Aspirin, Choline Salicylate, Diclofenac, Diflunisal, Etodolac, Fenoprofen, Floctafenine, Flurbiprofen, Ibuprofen, Indomethacin, Ketoprofen, Magnesium Salicylate, Meclofenamate, Mefenamic Acid, Nabumetone, Naproxen, Oxaprozin, Phenylbutazone, Piroxicam, Salsalate, Sodium Salicylate, Sulindac, Tenoxicam, Tiaprofenic Acid, Tolmetin. Examples of anti-inflammatories for ocular treatment are Diclofenac, Flurbiprofen, Indomethacin, Ketorolac, Rimexolone (generally for post-operative treatment). Examples of anti-inflammatories for non-infectious nasal applications are Beclomethaxone, and the like. Examples of soporifics (anti-insommia/sleep inducing agents) such as those utilized for treatment of insomnia, are Alprazolam, Bromazepam, Diazepam, Diphenhydramine, Doxylamine, Estazolam, Flurazepam, Halazepam, Ketazolam, Lorazepam, Nitrazepam, Prazepam Quazepam, Temazepam, Triazolam, Zolpidem and Sopiclone, among others. Examples of sedatives are Diphenhydramine, Hydroxyzine, Methotrimeprazine, Promethazine, Propofol, Melatonin, Trimeprazine, and the like. Examples of sedatives and agents used for treatment of petit mal and tremors, among other conditions, are Amitriptyline HCl, Chlordiazepoxide, Amobarbital, Secobarbital, Aprobarbital, Butabarbital, Ethchiorvynol, Glutethimide, L-Tryptophan, Mephobarbital, MethoHexital Na, Midazolam HCl, Oxazepam, Pentobarbital Na, Phenobarbital, Secobarbital Na, Thiamylal Na, and many others. Agents used in the treatment of head trauma (Brain Injury/Ischemia) include Enadoline HCl (e.g. for treatment of severe head injury, orphan status, Warner Lambert). Examples of cytoprotective agents and agents for the treatment of menopause and menopausal symptoms are Ergotamine, Belladonna Alkaloids and Phenobarbitals. Examples of agents for the treatment of menopausal vasomotor symptoms are Clonidine, Conjugated Estrogens and Medroxyprogesterone, Estradiol, Estradiol Cypionate, Estradiol Valerate, Estrogens, conjugated Estrogens, esterified Estrone, Estropipate and Ethinyl Estradiol. Examples of agents for treatment of symptoms of Pre Menstrual Syndrome (PMS) are Progesterone, Progestin, Gonadotrophic Releasing Hormone, oral contraceptives, Danazol, Luprolide Acetate and Vitamin B6. Examples of agents for the treatment of emotional/psychiatric treatments are Tricyclic Antidepressants including Amitriptyline HCl (Elavil), Amitriptyline HCl, Perphenazine (Triavil) and Doxepin HCl (Sinequan). Examples of tranquilizers, anti-depressants and anti-anxiety agents are Diazepam (Valium), Lorazepam (Ativan), Alprazolam (Xanax), SSRI's (selective Serotonin reuptake inhibitors), Fluoxetine HCl (Prozac), Sertaline HCl (Zoloft), Paroxetine HCl (Paxil), Fluvoxamine Maleate (Luvox), Venlafaxine HCl (Effexor), Serotonin, Serotonin Agonists (Fenfluramine), and other over the counter (OTC) medications. Examples of anti-migraine agents are Imitrex and

15

25

40

45

The amount of each active agent may be adjusted when, and if, additional agents with overlapping activities are included as discussed in this patent. The dosage of the active compounds, however, may vary depending on age, weight, and condition of the subject. Treatment may be initiated with a small dosage, e.g. less than the optimal dose, of the first active agent of the invention, whether an anti-inflammatory steroid or a ubiquinone, or both, and optionally other bioactive agents described above. This may be similarly done with the second active agent, until a desirable level is attained. Or vice versa, for example in the case of multivitamins and/or minerals, the subject may be stabilized at a desired level of these products and then administered the first active compound. The dose may be increased until a desired and/or optimal effect under the circumstances is reached. In general, the active agent is preferably administered at a concentration that will afford effective results without causing any unduly harmful or deleterious side effects, and may be administered either as a single unit dose, or if desired in convenient subunits administered at suitable times throughout the day. The second therapeutic or diagnostic agent(s) is (are) administered in amounts which are known in the art to be effective for the intended application. In cases where the second agent has an overlapping activity with the principal agent, the dose of one of the other or of both agents may

be adjusted to attain a desirable effect without exceeding a dose range which avoids untoward side effects. Thus, for example, when other analgesic and anti-inflammatory agents are added to the composition, they may be added in amounts known in the art for their intended application or in doses somewhat lower that when administered by themselves.

5

10

30

35

Pharmaceutical compositions and kits comprising an anti-sense oligo and/or the non-corticoid steroid and/or ubiquinone including doses effective to reduce expression of target protein(s) by binding specifically with DNA or mRNA either encoding, or regulating the expression of the target proteins in the cell so as to prevent its translation are also part of the present invention. Such compositions are provided in a suitable pharmaceutically or veterinarily acceptable carrier(s), e.g., sterile pyrogen-free saline solution either separately or in combination when intended for dual administration, e.g. in a kit where both first and second agent are administered on specified dates whereas only one is administered other days. The active agents may be formulated with a hydrophobic carrier capable of passing through a cell membrane, e.g., in a liposome, with the liposomes carried in a pharmaceutically acceptable aqueous carrier. The oligonucleotides may also be coupled to a substance which inactivates mRNA, such as a ribozyme. Such oligonucleotides may be administered to a subject to inhibit the activation of a target, such as the adenosine receptors, which subject is in need of such treatment for any of the reasons discussed herein. Furthermore, the pharmaceutical formulation may also contain chimeric molecules comprising anti-sense oligonucleotides attached to molecules which are known to be internalized by cells. These oligonucleotide conjugates utilize cellular uptake pathways to increase cellular concentrations of oligonucleotides. Examples of macromolecules used in this manner include transferrin, asialoglycoprotein (bound to oligonucleotides via polylysine) and streptavidin. In the pharmaceutical formulation, the anti-sense compound may be contained within a lipid particle or vesicle, such as a liposome or microcrystal. The particles may be of any suitable structure, such as unilamellar or plurilamellar, so long as the anti-sense oligonucleotide is contained therein. Positively charged lipids such as N- [1-(2, 3 -dioleoyloxy) propyl] -N, N, N-trimethylammoniumethylsulfate, or "DOTAP," are particularly preferred for such particles and vesicles. The preparation of such lipid particles is well known. See, e.g., U.S. Patent Nos. 4,880,635 to Janoff et al.; 4,906,477 to Kurono et al.; 4,911,928 to Wallach; 4,917,951 to Wallach; 4,920,016 to Allen et al.; 4,921,757 to Wheatley et al.; etc.

The active compounds provided in this patent are preferably administered to the subject as a pharmaceutical or veterinary composition. Pharmaceutical compositions for use in the present invention include formulations suitable for systemic and topical administration, including by inhalation, intrapulmonary infusion, nasal, respirable, oral, topical (including buccal, sublingual, dermal and intraocular), parenteral (including subcutaneous, intradermal, intramuscular, intravenous and intraarticular), rectal, vaginal, ophthalmic, otical, implantable, and transdermal and iontophoretic administration, among others. The compositions may conveniently be provided in bulk, or presented in unit or multiple unit dosage form, and may be prepared by any of the methods well known in the art.

The first and second active compounds may be administered to the lungs, i.e. intrapulmonarily, nasally, respirably or by inhalation, of a subject by any suitable means. A preferred method of administration is by generating an aerosol or spray comprised of nasal or respirable particles comprising the active compound. The thus administered particles are then inhaled by the subject, i.e. by inhalation, intrapulmonary drip, or nasal administration, or by direct administration into the airways or respiration. The respirable particles may be liquid or solid, and they are preferably in the range of about 0.05, about 0.5, about 1, about 2, about 2.5 to about 3.5, about 4, about 6, about 8, about 10 micron, and preferably about 1 to about 5 micron (respirable or inhalable particles), or about 10, about 15, about 20, about 30 to about 50, about 100, about 150, about 200, about 300, about 400, about 500 micron, preferably about 10 to about 50, about 100 micron for intrapulmonary instillation or nasal administration. As explained above, particles of non-respirable size that are included in the aerosol or spray tend to deposit in the throat and be swallowed, and the quantity of non-respirable particles in the aerosol is preferably minimized. For nasal administration or intrapulmonary instillation, particularly for newborn babies and infants, a particle size in the range of about 10 to about 50 microns is preferred to ensure deposition and retention in the nasal or pulmonary cavity. Liquid pharmaceutical compositions of the active compound for producing an aerosol or spray may be prepared by combining the active compound with a stable vehicle, such as sterile pyrogen free water. Solid particulate compositions containing respirable dry particles of micronized active compound may be prepared by grinding dry active compound with a mortar and pestle, and then passing the micronized composition through a 400 mesh screen to break up or separate out large agglomerates. Another method would include passing through a mill

and collecting the fine particles from the device for further classification. A solid particulate composition comprised of the active compound may optionally contain a dispersant that serves to facilitate the formation of an aerosol. A suitable dispersant is lactose, which may be blended with the active compound in any suitable ratio, e. g. a 1 to 2.5 ratio by weight. Again, other therapeutic and formulation compounds may also be included, such as a surfactant to improve the state of surfactant in the lung and help with the absorption of the active agent.

The dosage of the anti-sense compound administered will depend upon the disease being treated, the condition of the subject, the particular formulation, the route of administration, the timing of administration to a subject, etc. In general, intracellular concentrations of the oligonucleotide of from about 0.01, about 0.05, about 0.1, about 0.2, about 1 to about 5 μ M, about 50 μ M, about 100 μ M or more, and more particularly about 0.2 to about 0.5 μ M, are desired. For administration to a subject such as a human, a dosage of from about 0.01, about 0.1 or about 1 mg/Kg up to about 50, about 100, or about 150 mg/Kg and even higher doses are typically employed depending on the route of administration as is known in the art. Depending on the solubility of the particular formulation of active compound administered, the daily dose may be divided among one or several unit dose administrations. Administration of the anti-sense compounds may be carried out therapeutically (i.e., as a rescue treatment) or prophylactically. Aerosols of liquid particles comprising the active compound may be produced by any suitable means, such as with a nebulizer. See, e. g. U.S. Patent No. 4,501,729. Nebulizers are commercially available devices that transform solutions or suspensions of the active ingredient into a therapeutic aerosol mist either by means of acceleration of a compressed gas, typically air or oxygen, through a narrow venturi orifice or by means of ultrasonic agitation. Suitable compositions for use in nebulizer comprise the active ingredient in a liquid carrier or diluent, the active ingredient comprising about 0.05 up to about 40% w/w of the composition, preferably about 1 to less than about 20% w/w. The carrier is typically water or a dilute aqueous alcoholic solution, preferably made isotonic with body fluids by the addition of, for example sodium chloride. Other carriers, however, are also suitable as an artisan would know. Optional additives include preservatives if the composition is not prepared sterile. An example of a preservative is methyl hydroxybenzoate, and other agents such as antioxidants, flavoring agents, volatile oils, buffering agents and surfactants, however, may also be added.

20

30

50

In one preferred embodiment, the pharmaceutical composition may further comprise one or more bronchodilating agents, and one or more surfactants along with a carrier and formulation agents alternatively, these active agents may be administred separately. Suitable surfactants or surfactant components for enhancing the uptake of the anti-sense oligonucleotides of the invention include synthetic and natural as well as full and truncated forms of surfactant protein A, surfactant protein B, surfactant protein C, surfactant protein D and surfactant Protein E, partially and fully saturated phosphatidylcholine (other than dipalmitoyl), dipalmitoylphosphatidylcholine, phosphatidylcholine, phosphatidylglycerol, phosphatidylinositol, phosphatidylethanolamine, phosphatidylserine; lysophosphatidylethanolamine, phosphatidic acid, ubiquinones, lysophosphatidylcholine, palmitoyl-lysophosphatidylcholine, dehydroepiandrosterone, dolichols, sulfatidic acid, glycerol-3-phosphate, dihydroxyacetone phosphate, glycerol, glycero-3-phosphocholine, dihydroxyacetone, palmitate, cytidine diphosphate (CDP) diacylglycerol, CDP choline, choline, choline phosphate; as well as natural and artificial lamellar bodies which are the natural carrier vehicles for the components of surfactant, omega-3 fatty acids, polyenic acid, polyenoic acid, lecithin, palmitinic acid, non-ionic block copolymers of ethylene or propylene oxides, polyoxypropylene, monomeric and polymeric, polyoxyethylene, monomeric and polymeric, poly (vinyl amine) with dextran and/or alkanoyl side chains, Brij 35, Triton X-100 and synthetic surfactants ALEC, Exosurf, Survan and Atovaquone, among others. These surfactants may be used either as a single, or as part of a multiple component, surfactant in a formulation, or as covalently bound additions to the 5' and/or 3' ends of the anti-sense oligo(s). Aerosols of solid particles comprising the active compound may likewise be produced with any solid particulate medicament aerosol generator. Aerosol generators for administering solid particulate medicaments to a subject produce particles which are respirable, as explained above, and generate a volume of aerosol containing a predetermined metered dose of a medicament at a rate suitable for human administration. One illustrative type of solid particulate aerosol generator is an insufflator. Suitable formulations for administration by insufflation include finely comminuted powders which may be delivered by means of an insufflator or taken into the nasal cavity in the manner of a snuff. In the insufflator, the powder (e.g., a metered dose thereof effective to carry out the treatments described herein) is contained in capsules or cartridges, typically made of gelatin or foil, which are either pierced or opened in situ and the powder delivered by air drawn through the device upon inhalation or by means of a manuallyoperated pump. The powder employed in the insufflator consists either solely of the active ingredient or of a powder

blend comprising the active ingredient, a suitable powder diluent, such as lactose, and an optional surfactant. The active ingredient typically comprises from about 0.1 to about 100 w/w of the formulation. A second type of illustrative aerosol generator comprises a metered dose inhaler. Metered dose inhalers are pressurized aerosol dispensers, typically containing a suspension or solution formulation of the active ingredient in a liquefied propellant. During the use these devices discharge the formulation through a valve adapted to deliver a metered volume, typically from about 10:1 to about 150:1, to produce a fine particle spray containing the active ingredient. Suitable propellants include certain chlorofluorocarbon compounds, for example, dichlorodifluoromethane, trichlorofluoromethane, dichlorotetrafluoroethane and mixtures thereof. The formulation may additionally contain one or more co-solvents, for example, ethanol, surfactants, such as olcic acid or sorbitan trioleate, antioxidants and suitable flavoring agents. The aerosol, whether formed from solid or liquid particles, may be produced by the aerosol generator for example at a rate of from about 10, about 30, about 70 to about 100, about 150, about 150 liters per minute, more preferably from about 30 to 150 liters per minute, and most preferably about 60 liters per minute. Aerosols containing greater amounts of medicament, however, may be administered more rapidly as is known in the art.

Aerosols of solid particles comprising the active compound may likewise be produced with any sold particulate medicament aerosol generator. Aerosol and spray generators for administering solid particulate medicaments to a subject, comprise product particles that are respirable or inhalable, and they generate a volume of aerosol containing a predetermined metered dose of a medicament at a rate suitable for human administration. Examples of such aerosol and spray generators include metered dose inhalers and insufflators known in the art. Liquid pharmaceutical compositions of active compound for producing an aerosol can be prepared by combining the anti-sense compound with the anti-inflammatory steroid(s) and/or the ubiquinone(s) and a suitable vehicle, such as sterile pyrogen free water. Other therapeutic compounds and formulation components may optionally be included as well. Solid particulate compositions containing respirable dry particles of micronized anti-sense compound may be prepared as known in the art, and generally described above, and then passing the micronized composition through a 400 mesh screen to break up or separate out large agglomerates.

15

30

35

40

45

50

Compositions suitable for oral administration may be presented in discrete units, such as capsules, cachets, lozenges, or tablets, each containing a pre-determined amount of the first and second active compounds; as a powder or granules; as a solution or a suspension in an aqueous or non-aqueous liquid; or as an oil-in-water or water-in-oil emulsion. Such compositions may be prepared by any suitable method of pharmacy that includes the step of bringing into association the active compounds and a suitable carrier. In general, the compositions of the invention are prepared by uniformly and intimately admixing the active compounds with a liquid or finely divided solid carrier, or both, and then, if necessary, shaping the resulting mixture. For example, tablet may be prepared by compressing or molding a powder or granules containing the active compound(s) alone, or optionally with one or more accessory ingredients. Compressed tablets may be prepared by compressing, in a suitable machine, the compound in a free-lowing form, such as a powder or granules optionally mixed with a binder, lubricant, inert diluent, and/or surface active/dispensing agent(s) or surfactants. Molded tablets may be made by molding, in a suitable machine, the powdered compound(s) moistened with an inert liquid binder. Compositions for oral administration may optionally include enteric coatings known in the art to prevent degradation of the compositions in the stomach and provide release of the drug in the small intestine.

Compositions suitable for buccal or sub-lingual administration include lozenges comprising the active compound in a flavored base, usually sucrose and acacia or tragacanth, and pastilles comprising the compound in an inert base such as gelatin and glycerin or sucrose and acacia.

Compositions suitable for parenteral administration comprise sterile aqueous and non-aqueous injection solutions, suspensions or emulsions of the active compound, which preparations are preferably isotonic with the blood of the intended recipient. These preparations may contain anti-oxidants, buffers, surfactants, bacteriostats, solutes which render the compositions isotonic with the blood of the intended recipient, and other formulation components known in the art. Aqueous and non-aqueous sterile suspensions may include suspending agents and thickening agents. The compositions may be presented in unit-dose or multi-dose containers, for example sealed ampoules and vials, and may be stored in a freeze-dried (lyophilized) condition requiring only the addition of the sterile liquid carrier, for example, saline or water-for-injection immediately prior to use. Extemporaneous injection solutions, suspensions and emulsions may be prepared from sterile powders, granules and tablets of the kind previously described.

Compositions suitable for topical application to the skin preferably take the form of an ointment, cream, lotion, paste, gel, spray, aerosol, or oil, although others are also suitable. Carriers that may be used include vaseline, lanoline, polyethylene glycols, alcohols, transdermal enhancers, and combinations of two or more thereof.

Compositions suitable for rectal and vaginal administration are also included and may be prepared by methods known in the art.

Compositions suitable for transdermal administration may be presented as discrete patches adapted to remain in intimate contact with the epidermis of the recipient for a prolonged period of time. Compositions suitable for transdermal administration may also be delivered by iontophoresis. See, e.g. Pharmaceutical Research 3:318 (1986). They typically take the form of an optionally buffered aqueous solution of the active compound containing appropriate ions to facilitate the iontophoretic delivery of the agent.

The relevant disclosures of all scientific publications and patent references cited in this patent are specifically intended to be incorporated herein by reference, particularly in reference to preparatory methods and technologies which are enabling of the invention. The following examples are provided to illustrate the present invention, and should not be construed as limiting thereon.

15 <u>EXAMPLES</u>

5

10

20

25

35

45

50

In the following examples, μM means micromolar, ml means milliliters, μm means micrometers, mm means millimeters, cm means centimeters, EC means degrees Celsius, μg means micrograms, mg means milligrams, g means grams, kg means kilograms, M means molar, and h or hr. means hours.

Example 1: Design and Synthesis of Anti-sense Oligonucleotides

The design of anti-sense oligonucleotides against the A_1 and A_3 adenosine receptors may require the solution of the complex secondary structure of the target A_1 receptor mRNA and the target A_3 receptor mRNA. After generating this structure, anti-sense nucleotide are designed which target regions of mRNA which might be construed to confer functional activity or stability to the mRNA and which optimally may overlap the initiation codon. Other target sites are readily usable. As a demonstration of specificity of the anti-sense effect, other oligonucleotides not totally complementary to the target mRNA, but containing identical nucleotide compositions on a w/w basis, are included as controls in anti-sense experiments.

The mRNA secondary structure of the adenosine A₁ receptor was analyzed and used as described above, to design a phosphorothioate anti-sense oligonucleotide. The anti-sense oligonucleotide which was synthesized was designated HAdA₁AS and had the following sequence: 5'-GAT GGA GGG CGG CAT GGC GGG-3' (SEQ ID NO:9370). As a control, a mismatched phosphorothioate anti-sense nucleotide designated HAdAlMM1 was synthesized with the following sequence: 5'-GTA GCA GGC GGG GAT GGG GGC-3' (SEQ ID NO:9371). Each oligonucleotide had identical base content and general sequence structure. Homology searches in GENBANK (release 85.0) and EMBL (release 40.0) indicated that the anti-sense oligonucleotide was specific for the human and rabbit adenosine A₁ receptor genes, and that the mismatched control was not a candidate for hybridization with any known gene sequence.

The secondary structure of the adenosine A₃ receptor mRNA was similarly analyzed and used as described above to design two phosphorothioate anti-sense oligonucleotides. The first anti-sense oligonucleotide (HAdA3AS1) synthesized had the following sequence: 5' -GTT GTT GGG CAT CTT GCC-3' (SEQ ID NO:9372). As a control, a mismatched phosphorothioate anti-sense oligonucleotide (HAdA3MM1) was synthesized, having the following sequence: 5' -GTA CTT GCG GAT CTA GGC-3' (SEQ ID NO:9373). A second phosphorothioate anti-sense oligonucleotide (HAdA3AS2) was also designed and synthesized, having the following sequence: 5' -GTG GGC CTA GCT CTC GCC-3' (SEQ ID NO:9374). Its control oligonucleotide (HAdA3MM2) had the sequence: 5' -GTC GGG GTA CCT GTC GGC-3' (SEQ ID NO:9375). Phosphorothioate oligonucleotides were synthesized on an Applied Biosystems Model 396 Oligonucleotide Synthesizer, and purified using NENSORB chromatography (DuPont, MD).

Example 2: In Vivo Testing of Adenosine A₁ Receptor Anti-sense Oligos

The anti-sense oligonucleotide against the human A₁ receptor (SEQ ID NO:9370) described above, was tested for efficacy in an in vitro model utilizing lung adenocarcinoma cells HTB-54. HTB-54 lung adenocarcinoma cells were demonstrated to express the A₁ adenosine receptor using standard northern blotting procedures and

receptor probes designed and synthesized in the laboratory.

HTB-54 human lung adenocarcinoma cells (106/100 mm tissue culture dish) were exposed to 5.0 :M HAdAlAS or HAdAlMM1 for 24 hours, with a fresh change of media and oligonucleotides after 12 hours of incubation. Following 24 hour exposure to the oligonucleotides, cells were harvested and their RNA extracted by standard procedures. A 21-mer probe corresponding to the region of mRNA targeted by the anti-sense (and therefore having the same sequence as the anti-sense, but not phosphorothioated) was synthesized and used to probe northern blots of RNA prepared from HAdAlAS-treated, HAdAlMM1-treated and non-treated HTB-54 cells. These blots showed clearly that HAdAlAS but not HAdAlMM1 effectively reduced human adenosine receptor mRNA by >50%. This result showed that HAdAlAS is a good candidate for an anti-asthma drug since it depletes intracellular mRNA for the adenosine A₁ receptor, which is involved in asthma.

Example 3: In Vivo Efficacy of Adenosine A₁ Receptor Anti-sense Oligos

10

15

20

40

45

A fortuitous hoology between the rabbit and human DNA sequences within the adenosine A₁ gene overlapping the initiation codon permitted the use of the phosphorothioate anti-sense oligonucleotides initially designed for use against the human adenosine A1 receptor in a rabbit model. Neonatal New Zealand white Pasteurella-free rabbits were immunized intraperitoneally within 24 hours of birth with 312 antigen units/ml house dust mite (D. farinae) extract (Berkeley Biologicals, Berkeley, CA), mixed with 10% kaolin. Immunizations were repeated weekly for the first month and then biweekly for the next 2 months. At 3-4 months of age, eight sensitized rabbits were anesthetized and relaxed with a mixture of ketamine hydrochloride (44 mg/kg) and acepromazine maleate (0.4 mg/kg) administered intramuscularly. The rabbits were then laid supine in a comfortable position on a small molded, padded animal board and intubated with a 4.0-mm intratracheal tube (Mallinkrodt, Inc., Glens Falls, NY). A polyethylene catheter of external diameter 2.4 mm with an attached latex balloon was passed into the esophagus and maintained at the same distance (approximately 16 cm) from the mouth throughout the experiments. The intratracheal tube was attached to a heated Fleisch pneumotachograph (size 00; DOM Medical, Richmond, VA), and flow was measured using a Validyne differential pressure transducer (Model DP-45161927; Validyne Engineering Corp., Northridge, CA) driven by a Gould carrier amplifier (Model 11-4113; Gould Electronic, Cleveland, OH). The esophageal balloon was attached to one side of the differential pressure transducer, and the outflow of the intratracheal tube was connected to the opposite side of the pressure transducer to allow recording of transpulmonary pressure. Flow was integrated to give a continuous tidal volume, and measurements of total lung resistance (RL) and dynamic compliance (Cdyn) were calculated at isovolumetric and flow zero points, respectively, using an automated respiratory analyzer (Model 6; Buxco, Sharon, CT). Animals were randomized and on Day 1 pretreatment values for PC50 were obtained for aerosolized adenosine. Anti-sense (HAdAIAS) or mismatched control (HAdAlMM) oligonucleotides were dissolved in sterile physiological saline at a concentration of 5000 µg (5 mg) per 1.0 ml. Animals were subsequently administered the aerosolized anti-sense or mismatch oligonucleotide via the intratracheal tube (approximately 5000 :g in a volume of 1.0 ml), twice daily for two days. Aerosols of either saline, adenosine, or anti-sense or mismatch oligonucleotides were generated by an ultrasonic nebulizer (DeVilbiss, Somerset, PA), producing aerosol droplets 80% of which were smaller than 5 :m in diameter. In the first arm of the experiment, four randomly selected allergic rabbits were administered anti-sense oligonucleotide and four the mismatched control oligonucleotide. On the morning of the third day, PC50 values (the concentration of aerosolized adenosine in mg/ml required to reduce the dynamic compliance of the bronchial airway 50% from the baseline value) were obtained and compared to PC₅₀ values obtained for these animals prior to exposure to oligonucleotide. Following a 1 week interval, animals were crossed over, with those previously administered mismatch control oligonucleotide now administered anti-sense oligonucleotide, and those previously treated with anti-sense oligonucleotide now administered mismatch control oligonucleotide. Treatment methods and measurements were identical to those employed in the first arm of the experiment. It should be noted that in six of the eight animals treated with anti-sense oligonucleotide, adenosine-mediated bronchoconstriction could not be obtained up to the limit of solubility of adenosine, 20 mg/ml. For the purpose of calculation, PC50 values for these animals were set at 20 mg/ml. The values given therefore represent a minimum figure for anti-sense effectiveness. Actual effectiveness was higher. The results of this experiment are illustrated in Table 5 below.

Table 5:

Effect of Adenosine A₁ Receptor Anti-sense Oligo upon PC50 Values in Asthmatic Rabbits

Mismatch Control	A ₁ Receptor Anti-sense Oligo		
Pre Oligonucleotide	Post Oligonucleotide	Pre Oligonucleotide	Post Oligonucleotide
3.56 ± 1.02	5.16 ± 1.03	2.36 ± 0.68	>19.5 ± 0.34**

The results are presented as the mean $(n=8) \pm SEM$.

The significance was determined by repeated-measures analysis of variance (ANOVA), and Tukey's protected test.

**Significantly different from all other groups, p<0.01.

In both arms of the experiment, animals receiving the anti-sense oligonucleotide showed an order of magnitude increase in the dose of aerosolized adenosine required to reduce dynamic compliance of the lung by 50%. No effect of the mismatched control oligonucleotide upon PC50 values was observed. No toxicity was observed in any animal receiving either anti-sense or control inhaled oligonucleotide. These results show clearly that the lung has exceptional potential as a target for anti-sense oligonucleotide-based therapeutic intervention in lung disease. They further show, in a model system which closely resembles human asthma, that downregulation of the adenosine A₁ receptor largely eliminates adenosine-mediated bronchoconstriction in asthmatic airways. Bronchial hyperresponsiveness in the allergic rabbit model of human asthma is an excellent endpoint for anti-sense intervention since the tissues involved in this response lie near to the point of contact with aerosolized oligonucleotides, and the model closely simulates an important human disease.

Example 4: Specificity of A₁-adenosine Receptor Anti-sense Oligonucleotide

At the conclusion of the cross-over experiment of Example 3 above, airway smooth muscle from all rabbits was quantitatively analyzed for adenosine A1 receptor number. As a control for the specificity of the anti-sense oligonucleotide, adenosine A₂ receptors, which should not have been affected, were also quantified. Airway smooth muscle tissue was dissected from each rabbit and a membrane fraction prepared according to the method of Kleinstein et al. (Kleinstein, J. and Glossmann, H., Naunyn-Schmiedeberg's Arch. Pharmacol. 305: 191-200 (1978)), the relevant portion of which is hereby incorporated in its entirety by reference, with slight modifications. Crude plasma membrane preparations were stored at -70EC until the time of assay. Protein content was determined by the method of Bradford (M. Bradford, Anal. Biochem. 72, 240-254 (1976), the relevant portion of which is hereby incorporated in its entirety by reference). Frozen plasma membranes were thawed at room temperature and were incubated with 0.2 U/ml adenosine deaminase for 30 minutes at 37EC to remove endogenous adenosine. The binding of [3H] DPCPX (A₁ receptor-specific) or [3H] CGS-21680 (A₁ receptor-specific) was measured as previously described by Ali et al. (Ali, S. et al., J. Pharmacol. Exp. Ther. 268, Am. J. Physiol 266, L271-277 (1994), the relevant portion of which is hereby incorporated in its entirety by reference). The animals treated with adenosine A₁ anti-sense oligonucleotide in the cross-over experiment had a nearly 75% decrease in A₁ receptor number compared to controls, as assayed by specific binding of the A₁-specific antagonist DPCPX. There was no change in adenosine A2 receptor number, as assayed by specific binding of the A2 receptor-specific agonist 2- [p- (2carboxyethyl)-phenethylamino] -5' - (N-ethylcarboxamido) adenosine (CGS-21680). This is illustrated in Table 6 below.

<u>Table 6</u> :	Specificity of Action of Adenosine A ₁ Receptor Oligonucleotide Anti-sense	
Mismatch Control Oligonucleotide	A ₁ Anti-sense Oligonucleotide	
A ₁ -Specific Binding	1105 ± 48**	293 ± 18
A ₂ -Specific Binding	302 ± 22 . 442 ± 171	

The results are presented as the mean $(n = 8) \pm SEM$.

35

40

The significance was determined by repeated-measures analysis of variance (ANOVA), and Tukey's protected test. **Significantly different from mismatch control, p<0.01.

The above results illustrate the effectiveness of anti-sense oligonucleotides in treating airway disease. Since
the anti-sense oligos described above, eliminate the receptor systems responsible for adenosine-mediated
bronchoconstriction, it may be less imperative to eliminate adenosine from them. However, it would be preferable to
eliminate adenosine from even these oligonucleotides to reduce the dose needed to attain a similar effect. Described

above are other anti-sense oligonucleotides targeting mRNA of proteins involved in inflammation. Adenosine has been eliminated from their nucleotide content to prevent its liberation during degradation.

Example 5: Anti-sense Oligos directed to other Target Nucleic Acids

This work was conducted to demonstrate that the present invention is broadly applicable to anti-sense oligonucleotides ("oligos") specific to nucleic acid targets broadly. The following experimental studies were conducted to show that the method of the invention is broadly suitable for use with anti-sense oligos designed as taught by this application and targeted to any and all adenosine receptor mRNAs. For this purpose, various anti-sense oligos were prepared to adenosine receptor mRNAs exemplified by the adenosine A₁, A_{2b} and A₃ receptor mRNAs. Anti-sense Oligo I was disclosed above (SEQ ID NO:9370). Five additional anti-sense phosphorothicate oligos were designed and synthesized as indicated above.

- 1- Oligo II (SEQ ID NO: 9376) also targeted to the adenosine A1 receptor, but to a different region than Oligo I.
- 2-Oligo V (SEQ ID NO: 9379) targeted to the adenosine A_{2b} receptor.
- 3- Oligos III (SEQ ID NO: 9377) and IV (SEQ ID NO: 9378) targeted to different regions of the adenosine A₃ receptor.
- 4- Oligo I-PD (SEQ ID NO: 11050)(a phosphodiester oligo of the same sequence as Oligo I).

These anti-sense oligos were designed for therapy on a selected species as described above and are generally specific for that species, unless the segment of the target mRNA of other species happens to contain a similar sequences. All anti-sense oligos were prepared as described below, and tested in vivo in a rabbit model for bronchoconstriction, inflammation and allergy, which have breathing difficulties and impeded lung airways, as is the case in ailments such as asthma, as described in the above-identified application.

20 Example 6: Design & Sequences of other Anti-sense Oligos

Six oligos and their effects in a rabbit model were studied and the results of these studies are reported and discussed below. Five of these oligos were selected for this study to complement the data on Oligo I (SEQ ID NO: 9370) provided in Examples 1 to 4 above. This oligo is anti-sense to one region of the adenosine A₁ receptor mRNA. The oligos tested are identified as anti-sense Oligos I (SEQ ID NO: 9370) and II (SEQ ID NO: 9376) targeted to a different region of the adenosine A₁ receptor mRNA, Oligo V (SEQ ID NO:9377) targeted to the adenosine A_{2b} receptor mRNA, and anti-sense Oligos III and IV (SEQ ID NOS: 9378and 9379) targeted to two different regions of the adenosine A₃ receptor mRNA. The sixth oligo (Oligo I-PD) is a phosphodiester version of Oligo I (SEQ ID NO:9370). The design and synthesis of these anti-sense oligos was performed in accordance with Example 1 above.

30 (I) Anti-sense Oligo I

10

15

The anti-sense oligonucleotide I referred to in Examples 1 to 4 above is targeted to the human A₁ adenosine receptor mRNA (EPI 2010). Anti-sense oligo I is 21 nucleotide long, overlaps the initiation codon, and has the following sequence:5'-GAT GGA GGG CGG CAT GGC GGG-3'(SEQ.ID NO:9370). The oligo I was previously shown to abrogate the adenosine-induced bronchoconstriction in allergic rabbits, and to reduce allergen-induced airway obstruction and bronchial hyperresponsiveness (BHR), as discussed above and shown by Nyce, J. W. & Metzger, W. J., Nature, 385:721 (1977), the relevant portions of which reference are incorporated in their entireties herein by reference.

(II) Anti-sense Oligo II

A phosphorothicate anti-sense oligo (SEQ ID NO:9376) was designed in accordance with the invention to target the rabbit adenosine A₁ receptor mRNA region +936 to +956 relative to the initiation codon (start site). The anti-sense oligo II is 21 nucleotide long, and has the following sequence: 5'-CTC GTC GCC GCC GGC GGG-3' (SEQ ID NO:9376).

(III) Anti-sense Oligo III

A phosphorothioate anti-sense oligo other than that provided in Example 1 above (SEQ ID NO:9377) was designed in accordance with the invention to target the anti-sense A₃ receptor mRNA region +3 to + 22 relative to the initiation codon start site. The anti-sense oligo III is 20 nucleotide long, and has the following sequence: 5'-GGG TGC TAT TGT CGG GC-3' (SEQ ID NO:9377).

(IV) Anti-sense Oligo IV

50

Yet another phosphorothioate anti-sense oligo (SEQ ID NO:9378) was designed in accordance with the invention to target the adenosine A₃ receptor mRNA region + 386 to + 401 relative to the initiation codon (start site). The anti-sense oligo IV is 15 nucleotide long, and has the following sequence: 5'-GGC CCA GGG CCA

GCC-3' (SEQ ID NO:9378)

(V) Anti-sense Oligo V

A phosphorothioate anti-sense oligo (SEQ ID NO:9379) was designed in accordance with the invention to target the adenosine A_{2b} receptor mRNA region -21 to -1 relative to the initiation codon (start site). The anti-sense oligonucleotide V is 21 nucleotide long, and has the following sequence: 5'-GGC CGG GCC AGC CGG GCC CGG-3' (SEQ ID NO:9379).

(VI) A₁ Mismatch Oligos

Two different mismatched oligonucleotides having the following sequences were used as controls for antisense oligo I(SEQ ID NO: 1) described in Example 5 above: A₁ MM2:5'-GTA GGT GGC GGG CAA GGC GGG-3' (SEQ ID NO:12490), and A₁ MM3:5'-GAT GGA GGC GGG CAT GGC GGG-3' (SEQ ID NO:12489). Anti-sense oligo I and the two mismatch anti-sense oligos had identical base content and general sequence structure. Homology searches in GENBANK (release 85.0) and EMBL (release 40.0) indicated that the anti-sense oligo I was specific, not only for the human, but also for the rabbit, adenosine A₁ receptor genes, and that the mismatched controls were not candidates for hybridization with any known human or animal gene sequence.

(VII) Anti-sense Oligo A₁-PD (Oligo VI)

A phosphodiester anti-sense oligo (Oligo VI; SEQ ID NO:9370) having the same nucleotide sequence as Oligo I was designed as disclosed in the above-identified application. Anti-sense oligo I-PD is 21 nucleotide long, overlaps the initiation codon, and has the following sequence: 5'- GAT GGA GGG CGG CAT GGC GGG-3' (SEQ ID NO:9370).

20 (III) Controls

15

25

30

50

Each rabbit was administered 5.0 ml aerosolized sterile saline following the same schedule as for the antisense oligos in (II), (III), and (IV) above.

Example 7: Synthesis of Anti-sense Oligos

Phosphorothioate anti-sense oligos having the sequences described in (a) above, were synthesized on an Applied Biosystems Model 396 Oligonucleotide Synthesizer, and purified using NENSORB chromatography (DuPont, DE). TETD (tetraethylthiuram disulfide) was used as the sulfurizing agent during the synthesis. Antisense oligonucleotide II (SEQ ID NO: 9376), anti-sense oligonucleotide III (SEQ ID NO: 9377) and anti-sense oligonucleotide IV (SEQ ID NO: 9378) were each synthesized and purified in this manner.

Example 8: Preparation of Allergic Rabbits

Neonatal New Zealand white Pasturella-free rabbits were immunized intraperitoneally within 24 hours of birth with 0.5 ml of 312 antigen units/ml house dust mite (D. farinae) extract (Berkeley Biologicals, Berkeley, CA) mixed with 10% kaolin as previously described (Metzger, W. J., in Late Phase Allergic Reactions, Dorsch, W., Ed., CRC Handbook, pp. 347-362, CRC Press, Boca Raton (1990); Ali, S., Metzger, W. J. and Mustafa, S. J., Am. J. Resp. Crit. Care Med. 149: 908 (1994)), the relevant portions of which are incorporated in their entireties here by reference. Immunizations were repeated weekly for the first month and then biweekly until the age of 4 months. These rabbits preferentially produce allergen-specific IgE antibody, typically respond to aeroallergen challenge with both an early and late-phase asthmatic response, and show bronchial hyper responsiveness (BHR). Monthly intraperitoneal administration of allergen (312 units dust mite allergen, as above) continues to stimulate and maintain allergen-specific IgE antibody and BHR. At 4 months of age, sensitized rabbits were prepared for aerosol administration as described by Ali et al. (Ali, S., Metzger, W. J. and Mustafa, S. J., Am. J. Resp. Crit. Care Med. 149 (1994)), the relevant section being incorporated in its entirety here by reference.

DOSE-RESPONSE STUDIES

Example 9: Experimental Setup

Aerosols of either adenosine (0-20 mg/ml), or anti-sense or one of two mismatch oligonucleotides (5 mg/ml) were separately prepared with an ultrasonic nebulizer (Model 646, DeVilbiss, Somerset, PA), which produced aerosol droplets, 80% of which were smaller than 5:m in diameter. Equal volumes of the aerosols were administered directly to the lungs via an intratracheal tube. The animals were randomized, and administered aerosolized adenosine. Day 1 pre-treatment values for sensitivity to adenosine were calculated as the dose of adenosine causing a 50% loss of compliance (PC₅₀ Adenosine). The animals were then administered either the aerosolized anti-sense or one of the mismatch anti-sense oligos via the intratracheal tube (5 mg/1.0 ml), for 2 minutes, twice daily for 2

days (total dose, 20 mg). Post-treatment PC₅₀ values were recorded (post-treatment challenge) on the morning of the third day. The results of these studies are provided in Example 21 below.

Example 10: Crossover Experiments

For some experiments utilizing anti-sense oligo I (SEQ ID NO: 9370) and a corresponding mismatch control oligonucleotide A1MM2, following a 2 week interval, the animals were crossed over, with those previously administered the mismatch control A₁MM2, now receiving the anti-sense oligo I, and those previously treated with the anti-sense oligo I, now receiving the mismatch control A₁MM2 oligo. The number of animals per group was as follows. For mismatch A₁MM2 (Control 1), n=7, since one animal was lost in the second control arm of the experiment due to technical difficulties, for mismatch A₁MM3 n=4 (Control 2) and for A₁AS anti-sense oligo I, n=8. The A₁MM3 oligo-treated animals were analyzed separately and were not part of the cross-over experiment. The treatment methods and measurements employed following the cross-over were identical to those employed in the first arm of the experiment. In 6 of the 8 animals treated with the anti-sense oligo I (SEQ ID NO: 9370), no PC₅₀ value could be obtained for adenosine doses of up to 20 mg/ml, which is the limit of solubility of adenosine. Accordingly, the PC₅₀ values for these animals were assumed to be 20 mg/ml for calculation purposes. The values given, therefore, represent a minimum figure for the effectiveness of the anti-sense oligonucleotides of the invention. Other groups of allergic rabbits (n=4 for each group) were administered 0.5 or 0.05 mg doses of the anti-sense oligo I (SEQ ID NO: 9370), or the A₁MM2 oligo in the manner and according to the schedule described above (the total doses being 2.0 or 0.2 mg). The results of these studies are provided in Example 22 below.

Example 11: Anti-sense Oligo Formulation

20

25

35

40

45

50

Each one of anti-sense oligos were separately solubilized in an aqueous solution and administered as described for anti-sense oligo I (SEQ ID NO:9370) in (e) above, in four 5 mg aliquots (20 mg total dose) by means of a nebulizer via endotracheal tube, as described above. The results obtained for anti-sense oligo I and its mismatch controls confirmed that the mismatch controls are equivalent to saline, as described in Example 19 below and in Table 1 of Nyce & Metzger, Nature 385: 721-725 (1997). Because of this finding, saline was used as a control for pulmonary function studies employing anti-sense oligos II, III and IV (SEQ ID NO: 9376, 9377 and 9378).

Example 12: Specificity of Oligo I for Adenosine A₁ Receptor (Receptor Binding Studies)

Tissue from airway smooth muscle was dissected to primary, secondary and tertiary bronchi from rabbits which had been administered 20 mg oligo I (SEQ ID NO: 9370) in 4 divided doses over a period of 48 hours as described above. A membrane fraction was prepared according to the method of Ali et al. (Ali, S., et al., Am. J. Resp. Crit. Care Med. 149: 908 (1994), the relevant section relating to the preparation of the membrane fraction is incorporated in its entirety hereby by reference). The protein content was determined by the method of Bradford and plasma membranes were incubated with 0.2 U/ml adenosine deaminase for 30 minutes at 37EC to remove endogenous adenosine. See, Bradford, M. M. Anal. Biochem. 72, 240-254 (1976), the relevant portion of which is hereby incorporated in its entirety by reference. The binding of [3H]DPCPX, [3H]NPC17731, or [3H]CGS-21680 was measured as described by Jarvis et al. See, Jarvis, M.F., et al., Pharmacol. Exptl. Ther. 251, 888-893 (1989), the relevant portion of which is fully incorporated herein by reference. The results of this study are shown in Table 8 and discussed in Example 20 below.

Example 13: Pulmonary Function Measurements (Compliance c_{DYN} and Resistance)

At 4 months of age, the immunized animals were anesthetized and relaxed with 1.5 ml of a mixture of ketamine HCl (35 mg/kg) and acepromazine maleate (1.5 mg/kg) administered intramuscularly. After induction of anesthesia, allergic rabbits were comfortably positioned supine on a soft molded animal board. Salve was applied to the eyes to prevent drying, and they were closed. The animals were then intubated with a 4.0 mm intermediate high-low cuffed Murphy 1 endotracheal tube (Mallinckrodt, Glen Falls, NY), as previously described by Zavala and Rhodes. See, Zavala and Rhodes, Proc. Soc. Exp. Biol. Med. 144: 509-512 (1973), the relevant portion of which is incorporated herein by reference in its entirety. A polyethylene catheter of OD 2.4 mm (Becton Dickinson, Clay Adams, Parsippany NJ) with an attached thin-walled latex balloon was passed into the esophagus and maintained at the same distance (approximately 16 cm) from the mouth throughout the experiment. The endotracheal tube was attached to a heated Fleisch pneumotach (size 00; DEM Medical, Richmond, VA), and the flow (v) measured using

a Validyne differential pressure transducer (Model DP-45-16-1927, Validyne Engineering, Northridge, CA), driven by a Gould carrier amplifier (Model 11-4113, Gould Electronics, Cleveland, OH). An esophageal balloon was attached to one side of the Validyne differential pressure transducer, and the other side was attached to the outflow of the endotracheal tube to obtain transpulmonary pressure (P_{tp}) . The flow was integrated to yield a continuous tidal volume, and the measurements of total lung resistance (R_t) and dynamic compliance (C_{dyn}) were made at isovolumetric and zero flow points. The flow, volume and pressure were recorded on an eight channel Gould 2000 W high-frequency recorder and C_{dyn} was calculated using the total volume and the difference in P_{tp} at zero flow, and . R_t was calculated as the ratio of Ptp and V at midtidal lung volumes. These calculations were made automatically with the Buxco automated pulmonary mechanics respiratory analyzer (Model 6, Buxco Electronics, Sharon, CT), as previously described by Giles et al. See, Giles et al., Arch. Int. Pharmacodyn. Ther. 194: 213-232 (1971), the relevant portion of which describing these calculations is incorporated in toto hereby by reference. The results obtained upon administration of oligo II on allergic rabbits are shown and discussed in Example 26 below.

Example 14: Measurement of Bronchial Hyperresponsiveness (BHR)

Each allergic rabbit was administered histamine by aerosol to determine their baseline hyperresponsiveness. Aerosols of either saline or histamine were generated using a DeVilbiss nebulizer (DeVilbiss, Somerset, PA) for 30 seconds and then for 2 minutes at each dose employed. The ultrasonic nebulizer produced aerosol droplets of which 80% were <5 micron in diameter. The histamine aerosol was administered in increasing concentrations (0.156 to 80 mg/ml) and measurements of pulmonary function were made after each dose. The B4R was then determined by calculating the concentration of histamine (mg/ml) required to reduce the C_{dyn} 50% from baseline (PC_{50 Histamine}).

20 Example 15: Cardiovascular Effect of Anti-sense Oligo I

25

30

50

The measurement of cardiac output and other cardiovascular parameters using CardiomaxJ utilizes the principal of thermal dilution in which the change in temperature of the blood exiting the heart after a venous injection of a known volume of cool saline is monitored. A single rapid injection of cool saline was made into the right atrium via cannulation of the right jugular vein, and the corresponding changes in temperature of the mixed injectate and blood in the aortic arch were recorded via cannulation of the carotid artery by a temperature-sensing miniprobe. Twelve hours after the allergic rabbits had been treated with aerosols of oligo I (EPI 2010; SEQ ID NO: 9370) as described in (d) above, the animals were anesthetized with 0.3 ml/kg of 80% Ketamine and 20% Xylazine. This time point coincides with previous data showing efficacy for SEQ ID NO: 9370, as is clearly shown by Nyce & Metzger, (1997), supra, the pertinent disclosure being incorporated in its entirety here by reference. A thermocouple was then inserted into the left carotid artery of each rabbit, and was then advanced 6.5 cm and secured with a silk ligature. The right jugular vein was then cannulated and a length of polyethylene tubing was inserted and secured. A thermodilution curve was then established on a CardiomaxJ II (Columbus Instruments, Ohio) by injecting sterile saline at 20EC to determine the correctness of positioning of the thermocouple probe. After establishing the correctness of the position of the thermocouple, the femoral artery and vein were isolated. The femoral vein was used as a portal for drug injections, and the femoral artery for blood pressure and heart rate measurements. Once constant baseline cardiovascular parameters were established, CardiomaxJ measurements of blood pressure, heart rate, cardiac output, total peripheral resistance, and cardiac contractility were made.

Example 16: Duration of Action of Oligo I (SEQ ID NO: 9370)

Eight allergic rabbits received initially increasing log doses of adenosine by means of a nebulizer via an intra-tracheal tube as described in (f) above, beginning with 0.156 mg/ml until compliance was reduced by 50% (PC_{50 Adenosine}) to establish a baseline. Six of the rabbits then received four 5 mg aerosolized doses of (SEQ ID NO: 9370) as described above. Two rabbits received equivalent amounts of saline vehicle as controls. Beginning 18 hours after the last treatment, the PC_{50 Adenosine} values were tested again. After this point, the measurements were continued for all animals each day, for up to 10 days. The results of this study are discussed in Example 25 below.

45 <u>Example 17</u>: Reduction of Adenosine A_{2b} Receptor Number by Anti-sense Oligo V

Sprague Dawley rats were administered 2.0 mg respirable anti-sense oligo V (SEQ ID NO:9379) three times over two days using an inhalation chamber as described above. Twelve hours after the last administration, lung parenchymal tissue was dissected and assayed for adenosine A_{2b} receptor binding using [311]-NECA as described by Nyce & Metzger (1997), supra. Controls were conducted by administration of equal volumes of saline.

The results are significant at p<0.05 using Student's paired t test, and are discussed in Example 28 below.

Example 18: Comparison of Oligo I & Corresponding Phosphodiester Oligo VI (SEQ ID NO:11050)

Oligo I (SEQ ID NO:9370) countered the effects of adenosine and eliminated sensitivity to it for adenosine amount up to 20 mg adenosine/5.0 ml (the limit of solubility of adenosine). Oligo VI (SEQ ID NO: 11050), the phosphodiester version of the oligonucleotide sequence, was completely ineffective when tested in the same manner. Both compounds have identical sequence, differing only in the presence of phosphorothioate residues in Oligo I (SEQ ID NO:9370), and were delivered as an aerosol as described above and in Nyce & Metzger (1997), supra. Significantly different at p<0.001, Student's paired t test. The results are discussed in Example 29 below.

10 RESULTS OBTAINED FOR ANTI-SENSE OLIGO I (SEQ ID NO: 1)

Example 19: Results of Prior Work

20

25

30

35

40

The nucleotide sequence and other data for anti-sense oligo I (SEQ ID NO: 9370), which is specific for the adenosine A₁ receptor, were provided above. The experimental data showing the effectiveness of oligo I in down regulating the receptor number and activity were also provided above. Further information on the characteristics and activities of anti-sense oligo I is provided in Nyce, J. W. and Metzger, W. J., Nature 385:721 (1997), the relevant parts of which relating to the following results are incorporated in their entireties herein by reference. The Nyce & Metzger (1997) publication provided data showing that the anti-sense oligo I (SEO ID NO: 9370):

- (1) The anti-sense oligo I reduces the number of adenosine A_1 receptors in the bronchial smooth muscle of allergic rabbits in a dose-dependent manner as may be seen in Table 5 below.
- (2) Anti-sense Oligo I attenuates adenosine-induced bronchoconstriction and allergen-induced bronchoconstriction.
- (3) The Oligo I attenuates bronchial hyperresponsiveness as measured by PC₅₀ histamine, a standard measurement to assess bronchial hyperresponsiveness. This result clearly demonstrates anti-inflammatory activity of the anti-sense oligo I as is shown in Table 5 above.
- (4) As expected, because it was designed to target it, the anti-sense oligo I is totally specific for the adenosine A_I receptor, and has no effect at all at any dose on either the very closely related adenosine A₂ receptor or the related bradykinin B₂ receptor. This is seen in Table 5 below.
- (5) In contradistinction to the above effects of the Oligo I, the mismatch control molecules MM2 and MM3 (SEQ ID NO:11051) and SEQ ID NO:11052) which have identical base composition and molecular weight but differed from the anti-sense oligo I (SEQ ID NO: 9370) by 6 and 2 mismatches, respectively. These mismatches, which are the minimum possible while still retaining identical base composition, produced absolutely no effect upon any of the targeted receptors (A₁, A₂ or B₂).

These results, along with a complete lack of prior art on the use of anti-sense oligonucleotides, such as oligo I, targeted to the adenosine A_1 receptor, are unexpected results. The showings presented in this patent clearly enable and demonstrate the effectiveness, for their intended use, of the claimed agents and method for treating a disease or condition associated with lung airway, such as bronchoconstriction, inflammation, allergy(ies), and the like.

Example 20: Oligo I Significantly Reduces Response to Adenosine Challenge

The receptor binding experiment is described in Example 12 above, and the results shown in Table 5 below which shows the binding characteristics of the adenosine A₁-selective ligand [³H]DPCPX and the bradykinin B₂-selective ligand [³H]NPC 17731 in membranes isolated from airway smooth muscle of A₁ adenosine receptor and B₂ bradykinin receptor anti-sense- and mismatch-treated allergic rabbits.

Table 5: Binding Characteristics of Three Anti-Sense Oligos

Treatment ¹		A ₁ receptor		B ₂ receptor
	Kd	B _{max}	Kd	Bmax

Adenosine A ₁	Receptor			
20 mg	0.36±0.029 nM	19±1.52 fmoles*	0.39±0.031 nM	14.8±0.99fmoles
2 mg	0.38±0.030 nM	32±2.56 fmoles*	0.41±0.028 nM	15.5±1.08 fmoles
0.2 mg	0.37±0.030 nM	49±3.43 fmoles	0.34±0.024 nM	15.0±1.06 fmoles
A_1MM1	(Control)			
20 mg	0.34±0.027 nM	52.0±3.64 fmoles	0.35±0.024 nM	14.0±1.0 fmoles
2 mg	0.37±0.033 nM	51.8±3.88 fmoles	0.38±0.028 nM	14.6±1.02 fmoles
B ₂ A (Bradykinin	Receptor)			
20 mg	0.36±0.028 nM	45.0±3.15 fmoles	0.38±0.027 nM	8.7±0.62 fmoles*
2 mg	0.39±0.035 nM	44.3±2.90 fmoles	0.34±0.024 nM	11.9±0.76
0.2 mg	0.40±0.028 nM	47.0±3.76 fmoles	0.35±0.028 nM	15.1±1.05 fmoles
B ₂ MM (Control)				
20 mg	0.39±0.031 nM	42.0±2.94 fmoles	0.41±0.029 nM	14.0±0.98 fmoles
2 mg	0.41±0.035 nM	40.0±3.20 fmoles	0.37±0.030 nM	14.8±0.99 fmoles
0.2 mg	0.37±0.029 nM	43.0±3.14 fmoles	0.36±0.025 nM	15.1±1.35 fmoles
Saline Control	0.37±0.041	46.0±5.21	0.39±0.047 nM	14.2±1.35 fmoles

Example 21: Dose-response Effect of Oligo I

Anti-sense oligo I (SEQ ID NO:9370) was found to reduce the effect of adenosine administration to the animal in a dose-dependent manner over the dose range tested as shown in Table 6 below.

5	Table 6:	Dose-Response Effect to Anti-sense Oligo I
	Total Dose	PC _{50 Adenosine}
	(mg)	(mg Adenosine)
	Anti-sense Oligo I	
	0.2	8.32±7.2
10	2.0	14.0±7.2
	20	19.5±0.34
	A ₁ MM2 oligo (control)	
	0.2	2.51±0.46
	2.0	3.13 ± 0.71
15	20	3.25± 0.34

The above results were studied with the Student's paired t test and found to be statistically different, p=0.05

The oligo I (SEQ ID NO:9370), an anti-adenosine A_1 receptor oligo, acts specifically on the adenosine A_1 receptor, but not on the adenosine A_2 receptors. These results stem from the treatment of rabbits with anti-sense oligo I (SEQ ID NO: 9370) or mismatch control oligo (SEQ ID NO:11051; A_1 MM2) as described in Example 9 above and in Nyce & Metzger (1997), supra (four doses of 5 mg spaced 8 to 12 hours apart via nebulizer via endotracheal tube), bronchial smooth muscle tissue excised and the number of adenosine A_1 and adenosine A_2 receptors determined as reported in Nyce & Metzger (1997), supra.

Example 22: Specificity of Oligo I (SEQ ID NO:9370) for Target Gene Product

20

25

Oligo I (SEQ ID NO:9370) is specific for the adenosine A₁ receptor whereas its mismatch controls had no activity. Figure 1 depicts the results obtained from the cross-over experiment described in Example 10 above and in Nyce & Metzger (1997), supra. The two mismatch controls (SEQ ID NO:11051 and SEQ ID NO:11052) evidenced no effect on the PC_{50 Adenosine} value. On the contrary, the administration of anti-sense oligo I (SEQ ID NO:9370) showed a seven-fold increase in the PC_{50 Adenosine} value. The results clearly indicate that the anti-sense oligo I (SEQ ID NO: 9370) reduces the response (attenuates the sensitivity) to exogenously administered adenosine

when compared with a saline control. The results provided in Table 6 above clearly establish that the effect of the anti-sense oligo I is dose dependent (see, column 3 of Table 5). The Oligo I was also shown to be totally specific for the adenosine A₁ receptor, (see, top 3 rows of Table), inducing no activity at either the closely related adenosine A₂ receptor or the bradykinin B₂ receptor (see, lines 8-10 of Table 6 above). In addition, the results shown in Table 6 establish that the anti-sense oligo I (SEQ ID NO:9370) decreases sensitivity to adenosine in a dose dependent manner, and that it does this in an anti-sense oligo-dependent manner since neither of two mismatch control oligonucleotides (A₁MM2; SEQ ID NO:11051 and A₁MM3; SEQ ID NO:11052) show any effect on PC_{50 Adenosine} values or on attenuating the number of adenosine A₁ receptors.

Example 23: Effect on Aeroallergen-induced Bronchoconstriction & Inflammation

10

30

40

The Oligo I (SEQ ID NO:9370) was shown to significantly reduce the histamine-induced effect in the rabbit model when compared to the mismatch oligos. The effect of the anti-sense Oligo I (SEQ ID NO:9370) and the mismatch oligos (A₁MM2, SEQ ID NO:11051 and A₁MM3, SEQ ID NO:11051) on allergen-induced airway obstruction and bronchial hyperresponsiveness was assessed in allergic rabbits. The effect of the anti-sense oligo I (SEQ ID NO:9370) on allergen-induced airway obstruction was assessed. As calculated from the area under the plotted curve, the anti-sense oligo I significantly inhibited allergen-induced airway obstruction when compared with the mismatched control (55%, p<0.05; repeated measures ANOVA, and Tukey's t test). A complete lack of effect was induced by the mismatch oligo A₁MM2 (Control) on allergen induced airway obstruction. The effect of the anti-sense oligo I (SEQ ID NO:9370) on allergen-induced BHR was determined as above. As calculated from the PC50 Histamine value, the anti-sense oligo I (SEQ ID NO:9370) significantly inhibited allergen-induced BHR in allergic rabbits when compared to the mismatched control (61%, p<0.05; repeated measures ANOVA, Tukey's t test). A complete lack of effect of the A₁MM mismatch control on allergen-induced BHR was observed. The results indicated that anti-sense oligo I (SEQ ID NO: 9370) is effective to protect against aeroallergen-induced bronchoconstriction (house dust mite). In addition, the anti-sense oligo I (SEQ ID NO:9370) was also found to be a potent inhibitor of dust mite-induced bronchial hyper responsiveness, as shown by its effects upon histamine sensitivity which indicates anti- inflammatory activity for anti-sense oligo I (SEQ ID NO:1). The results indicated that anti-sense oligo I (SEQ ID NO 9370) is effective to protect against aeroallergen-induced bronchoconstriction (house dust mite). In addition, the anti-sense oligo I (SEQ ID NO: 9370) was also found to be a potent inhibitor of dust mite-induced bronchial hyper responsiveness, as shown by its effects upon histamine sensitivity which indicates anti- inflammatory activity for anti-sense oligo I (SEQ ID NO: 9370). The results indicated that anti-sense oligo I (SEQ ID NO: 9370) is effective to protect against aeroallergen-induced bronchoconstriction (house dust mite). In addition, the anti-sense oligo I (SEO ID NO: 9370) was also found to be a potent inhibitor of dust mite-induced bronchial hyper responsiveness, as shown by its effects upon histamine sensitivity which indicates antiinflammatory activity for anti-sense oligo I (SEQ ID NO: 9370). The results indicated that anti-sense oligo I (SEQ ID NO: 9370) is effective to protect against aeroallergen-induced bronchoconstriction (house dust mite). In addition, the anti-sense oligo I (SEO ID NO: 9370) was also found to be a potent inhibitor of dust mite-induced bronchial hyper responsiveness, as shown by its effects upon histamine sensitivity which indicates antiinflammatory activity for anti-sense oligo I (SEQ ID NO: 9370). The results indicated that anti-sense oligo I (SEQ ID NO: 9370) is effective to protect against aeroallergen-induced bronchoconstriction (house dust mite). In addition, the anti-sense oligo I (SEQ ID NO: 9370) was also found to be a potent inhibitor of dust mite-induced bronchial hyper responsiveness, as shown by its effects upon histamine sensitivity which indicates antiinflammatory activity for anti-sense oligo I (SEQ ID NO: 9370). The results indicated that anti-sense oligo I (SEQ ID NO: 9370) is effective to protect against aeroallergen-induced bronchoconstriction (house dust mite). In addition, the anti-sense oligo I (SEQ ID NO: 9370) was also found to be a potent inhibitor of dust mite-induced bronchial hyper responsiveness, as shown by its effects upon histamine sensitivity which indicates antiinflammatory activity for anti-sense oligo I (SEQ ID NO: 9370).

Example 24: Anti-sense Oligo I is Free of Deleterious Side Effects

The Oligo I (SEQ ID NO: 9370) was shown to be free of side effects that might be toxic to the recipient.

No changes in arterial blood pressure, cardiac output, stroke volume, heart rafe, total peripheral resistance or heart

contractility (dPdT) were observed following administration of 2.0 or 20 mg oligo I (SEQ ID NO: 9370). The addition, the results of the measurement of cardiac output (CO), stroke volume (SV), mean arterial pressure (MAP), heart rate (HR), total peripheral resistance (TPR), and contractility (dPdT) with a CardiomaxJ apparatus (Columbus Instruments, Ohio) were assessed. These results evidenced that oligo I (SEQ ID NO: 9370) has no detrimental effect upon critical cardiovascular parameters. More particularly, this oligo does not cause hypotension. This finding is of particular importance because other phosphorothioate anti-sense oligonucleotides have been shown in the past to induce hypotension in some model systems. Furthermore, the adenosine A₁ receptor plays an important role in sinoatrial conduction within the heart. Attenuation of the adenosine A₁ receptor by anti-sense oligo I (SEQ ID NO: 9370) might be expected to result, therefore, in deleterious extrapulmonary activity in response to the downregulation of the receptor. This is not the case. The anti-sense oligo I (SEQ ID NO: 9370) does not produce any deleterious intrapulmonary effects and renders the administration of the low doses of the present anti-sense oligo free of unexpected, undesirable side effects. This demonstrates that when oligo I (SEQ ID NO: 9370) is administered directly to the lung, it does not reach the heart in significant quantities to cause deleterious effects. This is in contrast to traditional adenosine receptor antagonists like theophylline which do escape the lung and can cause deleterious, even life-threatening effects outside the lung.

Example 25: Long Lasting Effect of Oligo I

15

30

50

The Oligo I (SEQ ID NO: 9370) evidenced a long lasting effect as evidenced by the PC_{50} and Resistance values obtained upon its administration prior to adenosine challenge. The duration of the effect was measured for with respect to the PC_{50} of adenosine anti-sense oligo I when administered in four equal doses of 5 mg each by means of a nebulizer via an endotracheal tube, as described above. The effect of the agent is significant over days 1 to 8 after administration. When the effect of the anti-sense oligo I (SEQ ID NO: 9370) had disappeared, the animals were administered saline aerosols (controls), and the PC_{50} Adenosine values for all animals were measured again. Saline-treated animals showed base line PC_{50} adenosine values (n=6). The duration of the effect (with respect to Resistance) was measured for six allergic rabbits which were administered 20 mg of anti-sense oligo I (SEQ ID NO: 9370) as described above, upon airway resistance measured as also described above. The mean calculated duration of effect was 8.3 days for both PC_{50} adenosine (p<0.05) and resistance (p<0.05). These results show that anti-sense oligo I (SEQ ID NO: 9370) has an extremely long duration of action, which is completely unexpected.

Example 26: Anti-sense Oligo II

Anti-sense oligo II, targeted to a different region of the adenosine A₁ receptor mRNA, was found to be highly active against the adenosine A₁-mediated effects. The experiment measured the effect of the administration of anti-sense oligo II (SEQ ID NO: 9376) upon compliance and resistance values when 20 mg anti-sense oligo II or saline (control) were administered to two groups of allergic rabbits as described above. Compliance and resistance values were measured following an administration of adenosine or saline as described above in Example 13. The effect of the anti-sense oligo of the invention was different from the control in a statistically significant manner, p<0.05 using paired t-test, compliance; p<0.01 for resistance. The results showed that anti-sense oligo II (SEQ ID NO: 9376), which targets the adenosine A₁ receptor, effectively maintains compliance and reduces resistance upon adenosine challenge.

Example 27: Antisense Oligos III and IV

Oligos III (SEQ ID NO: 9377) and IV (SEQ ID NO: 9378) were shown to be in fact specifically targeted to the adenosine A₃ receptor by their effect on reducing inflammation and the number of inflammatory cells present upon separate administration of 20 mg of the anti-sense oligos III (SEQ ID NO: 9377) and IV (SEQ ID NO: 9378) to allergic rabbits as described above. The number of inflammatory cells was determined in their bronchial lavage fluid 3 hours later by counting at least 100 viable cells per lavage. The effect of anti-sense oligos III (SEQ ID NO: 9377) and IV (SEQ ID NO: 9378) upon granulocytes, and upon total cells in bronchial lavage were assessed following exposure to dust mite allergen. The results showed that the anti-sense oligo IV (SEQ ID NO: 9378) and anti-sense oligo III (SEQ ID NO: 9377) are very potent anti-inflammatory agents in the asthmatic lung following exposure to dust mite allergen. As is known in the art, granulocytes, especially eosinophils, are the primary inflammatory cells of asthma, and the administration of anti-sense oligos III (SEQ ID NO: 9377) and IV (SEQ ID NO: 9378) reduced their numbers by 40% and 66%, respectively. Furthermore, anti-sense oligos IV (SEQ ID NO: 9378) and III (SEQ ID NO: 9376) also reduced the total number of cells in the bronchial lavage fluid by 40% and

80%, respectively. This is also an important indicator of anti-inflammatory activity by the present anti-adenosine A₃ agents of the invention. Inflammation is known to underlie bronchial hyperresponsiveness and allergen-induced bronchoconstriction in asthma. Both anti-sense oligonucleotides III (SEQ ID NO: 9377) and IV (SEQ ID NO: 9378), which are targeted to the adenosine A₃ receptor, are representative of an important new class of anti-inflammatory agents which may be designed to specifically target the lung receptors of each species.

Example 28: Anti-sense Oligo V

The anti-sense oligo V (SEQ ID NO: 9379), targeted to the adenosine A_{2b} adenosine receptor mRNA was shown to be highly effective at countering adenosine A_{2b} -mediated effects and at reducing the number of adenosine A_{2b} -receptors present to less than half.

10 Example 29: Unexpected Superiority of Substituted over Phosphodiester-residue Oligo I-DS (SEQ ID NO:1681)

Oligos I (SEQ ID NO: 9370) and I-DS (SEQ ID NO: 11050) were separately administered to allergic rabbits as described above, and the rabbits were then challenged with adenosine. The phosphodiester oligo I-DS (SEQ ID NO: 11050) was statistically significantly less effective in countering the effect of adenosine whereas oligo I (SEQ ID NO: 9370) showed high effectiveness, evidencing a PC_{50 Adenosine} of 20 mg.

Example 30: Anti-sense Oligo VI

For the present work, I designed an additional anti-sense phosphorothicate oligo targeted to the adenosine A1 receptor (Oligo VI). This anti-sense oligo was designed for therapy on a selected species as described in the above patent application and is generally specific for that species, unless the segment of the adenosine receptor mRNA of other species elected happens to have a similar sequence. The anti-sense oligos were prepared as described below, and tested in vivo in a rabbit model for bronchoconstriction, inflammation and lung allergy, which have breathing difficulties and impeded lung airways, as is the case in ailments such as asthma, as described in the above-identified application. One additional oligo and its effect in a rabbit model was studied and the results of the study are reported and discussed below. The present oligo (anti-sense oligo VI) was selected for this study to complement the data on SEQ ID NO: 1 (Oligo I), which is anti-sense to the adenosine A₁ receptor mRNA provided in the above-identified patent application. This additional oligo is identified as anti-sense Oligo VI, and is targeted to a different region of the adenosine A_I receptor mRNA than Oligo I. The design and synthesis of this anti-sense oligo was performed in accordance with the teaching, particularly Example 1, of the above-identified patent application. The anti-sense Oligo VI is a phosphorothioate designed to target the coding region of the rabbit adenosine A₁ receptor mRNA region +964 to +984 relative to the initiation codon (start site). The Oligo VI was prepared as described in the above-indicated application, and is 20 nucleotides long. The OligoVI is directed to the adenosine A₁ receptor gene, and has the following sequence: 5'-CGC CGG CGG GTG CGG GCC GG-3' (SEQ ID NO: 12491). The phosphorothicate anti-sense Oligo VI having the sequence described in (5) above, was synthesized on an Applied Biosystems Model 396 Oligonucleotide Synthesizer, and purified using NENSORB chromatography (DuPont, DE). TETD (tetraethylthiuram disulfide) was used as the sulfurizing agent during the synthesis.

Example 31: Preparation of Allergic Rabbits

Neonatal New Zealand white Pasturella-free rabbits were immunized intraperitoneally within 24 hours of birth with 0.5 ml of 312 antigen units/ml house dust mite (D. farinae) extract (Berkeley Biologicals, Berkeley, CA) mixed with 10% kaolin as previously described (Metzger, W. J., in Late Phase Allergic Reactions, Dorsch, W., Ed., CRC Handbook, pp 347-362, CRC Press, Boca Raton, 1990; Ali, S. Et al., Am. J. Resp. Crit. Care Med. 149: 908 (1994)). The immunizations were repeated weekly for the first month and then bi-weekly until the animals were 4 months old. These rabbits preferentially produce allergen-specific IgE antibody, typically respond to aeroallergen challenge with both an early and late-phase asthmatic response, and show bronchial hyper responsiveness (BHR). Monthly intraperitoneal administration of allergen (312 units dust mite allergen, as above) continues to stimulate and maintain allergen-specific IgE antibody and BHR. At 4 months of age, sensitized rabbits were prepared for aerosol administration as described by Ali et al. (1994), supra.

Example 32: Adenosine Aerosol Preparation

An adenosine aerosol (20 mg/ml) was prepared with an ultrasonic nebulizer (Model 646, DeVilbiss, Somerset, PA), which produced aerosol droplets, 80% of which were smaller than 5:m in diameter. Equal volumes of the aerosols were administered directly to the lungs via an intratracheal tube to all three rabbits. The animals were then administered the aerosolized adenosine and Day 1 pre-treatment values for sensitivity to adenosine were calculated as the dose of adenosine causing a 50% loss of compliance (PC₅₀ Adenosine). The animals were then administered the aerosolized anti-sense via the intratracheal tube (5 mg/1.0 ml), for 2 minutes, twice daily for 2 days (total dose, 20 mg). Post-treatment PC₅₀ values were recorded (post-treatment challenge) on the morning of the third day. The results of these studies are provided in (9) below.

Example 33: Anti-sense Oligo Formulation

10

15

25

45

Each one of anti-sense oligos were separately solubilized in an aqueous solution and administered as described for anti-sense oligo I in (e) above, in four 5 mg aliquots (20 mg total dose) by means of a nebulizer via endotracheal tube, as described above.

Example 34: Oligo VI Reduces Response to Adenosine Challenge as well or Better than Oligo I

Oligo VI was tested in three allergic rabbits of the characteristics and readied as described in (7) above and in the above-indicated patent application. Oligo VI targets a section of the coding region of the A₁ receptor which is different from Oligo I. Both these target sequences were selected randomly from many possible coding region target sequences. The three rabbits were treated identically as previously indicated for Oligo I. Briefly, 5 mg of Oligo VI were nebulized to the rabbits twice per day at 8 hour intervals, for two days. Thereafter, PC₅₀ adenosine studies were performed on the morning of the third day and compared to pre-treatment PC₅₀ values. This protocol is described in more detail in Nyce and Metzger (Nyce & Metzger, Nature 385: 721-725 (1997)). The results obtained for the three rabbits are shown in Table 7 below.

<u> Table 7</u> :	PC ₅₀ Adenosine before & after	
	Aerosolized Adenosine Treatment	
Treatment Time	PC ₅₀ Adenosine	
	(mg)	
Pre-treatment	3.0 ±2.1	
Post-treatment	>20.0*	
* maximum achievabl	e dose due to adenosine insolubility in saline	

All three animals treated with Oligo VI completely eliminated sensitivity to adenosine up to the measurable level of the agent shown in Table 7 above. That is, the administration of the Oligo VI abrogated the adenosine-induced bronchoconstriction in the three allergic rabbits. The actual efficacy of Oligo VI is, therefore, greater than could be measured in the experimental system used. By comparing with the previously submitted results for the Oligo I, it may be seen that the Oligo VI was found to be as effective, or more, than Oligo I.

35 Example 34: Conclusions

The work described and results discussed in the examples clearly indicates that all anti-sense oligonucleotides designed in accordance with the teachings of the above-identified application were found to be highly effective at countering or reducing effects mediated by the receptors they are targeted to. That is, each and all of the two anti-sense oligos targeting an adenosine A₁ receptor mRNA, 1 anti-sense oligo targeting an adenosine A_{2b} receptor mRNA, and the 2 anti-sense oligos targeting an A₃ receptor mRNA were shown capable of countering the effect of exogenously administered adenosine which is mediated by the specific receptor they are targeted to. The activity of the anti-sense oligos of this invention, moreover, is specific to the target and substitutively fails to inhibit another target. In addition, the results presented also show that the administration of the present agents results in extremely low or non-existent deleterious side effects or toxicity. This represents 100% success in providing agents that are highly effective and specific in the treatment of bronchoconstriction and/or inflammation. This invention is broadly applicable in the same manner to all gene(s) and corresponding mRNAs encoding proteins involved in or associated with airway diseases. A comparison of the phosphodiester and a version of the same oligonucleotide wherein the phosphodiester bonds are substituted with phosphorothioate bonds evidenced an unexpected superiority for the phosphothiorate oligonucleotide over the phosphodiester anti-sense oligo.

50 Example 35: In Vivo Response to Adenosine Challenge

with & without Oligo I Pretreatment

Two hyper responsive monkeys (ascaris sensitive) were challenged with inhaled adenosine, with and without pre-treatment with anti-sense oligo I (SEQ ID NO: 9370). The PC₄₀ adenosine was calculated from the data collected as being equivalent to that amount of adenosine in mg that causes a 40% decrease in dynamic compliance in hyper-responsive airways. The Oligo I (SEQ ID NO: 9370; EPI 2010) was subsequently administered at 10 mg/day for 2 days by inhalation. On the third day, the PC adenosine was again measured. The PC₄₀ adenosine value prior to treatment with Oligo I was compared side-by-side with to the PC₄₀ adenosine taken after administration of Oligo I (Figure not shown). The results of the experiment conducted with two animals showed that any sensitivity to adenosine was completely eliminated by the administration of the oligo of this invention in one animal, and substantially reduced in the second.

Example 36: Extension of the experimental Results

10

20

25

30

40

The method of the present invention is also practiced with anti-sense oligonucleotides targeted to many genes, mRNAs and their corresponding proteins as described above, in essentially the same manner as given above, for the treatment of various conditions in the lungs. Examples of these are Human A_{2a} adenosine receptor, Human A_{2b} adenosine receptor, Human IgE receptor β, Human Fc-epsilon receptor CD23 antigen (IgE receptor), Human IgE receptor, α subunit, Human IgE receptor, Fc epsilon R, Human histidine decarboxylase, Human beta tryptase, Human tryptase-I, Human prostaglandin D synthase, Human cyclooxygenase-2, Human eosinophil cationic protein, Human eosinophil derived neurotoxin, Human eosinophil peroxidase, Human intercellular adhesion molecule-1 (ICAM-1), Human vascular cell adhesion molecule 1 (VCAM-1), Human endothelial leukocyte adhesion molecule (ELAM-1), Human P Selectin, Human endothelial monocyte activating factor, Human IL3, Human IL4, Human IL5, Human IL6, Human monocyte-derived neutrophil chemotactic factor, Human neutrophil elastase (medullasin), Human neutrophil oxidase factor, Human cathepsin G, Human defensin 1, Human neutrophil elastase (medullasin), Human neutrophil oxidase factor, Human muscarinic acetylcholine receptor HM1, Human muscarinic acetylcholine receptor HM3, Human fibronectin, Human interleukin 8, Human GM-CSF, Human tumor necrosis factor α, Human leukotriene C4 synthase, Human major basic protein, and many more.

Example 37: In Vivo Effects of Folinic Acid and DHEA on Adenosine Levels

In the examples provided below, EA means an epiandrosterone, DHEA means dehydroepiandrosterone, s means seconds, mg means milligrams, kg means kilograms, kw means kilowatts, Mhz means megahertz, CoQ means a ubiquinone, and nmol means nanomoles.

Young adult male Fischer 344 rats (120 grams) were administered dehydroepiandrosterone (DHEA) (300 mg/kg) or methyltestosterone (40 mg/kg) in carboxymethylcellulose by gavage once daily for fourteen days. Folinic acid (50 mg/kg) was administered intraperitoneally once daily for fourteen days. On the fifteenth day, the animals were sacrificed by microwave pulse (1.33 kw, 2450 MHZ, 6.5 s) to the cranium, which instantly denatures all brain protein and prevents further metabolism of adenosine. Hearts were removed from animals and flash frozen in liquid nitrogen with 10 seconds of death. Liver and lungs were removed en bloc and flash frozen with 30 seconds of death. Brain tissue was subsequently dissected. Tissue adenosine was extracted, derivatized to 1, N6-ethenoadenosine and analyzed by high performance liquid chromatography (HPLC) using spectrofluorometric detection according to the method of Clark and Dar (J. of Neuroscience Methods 25:243 (1988)). Results of these experiments are summarized in Table 1 below. Results are expressed as the mean \pm SEM, with ? p<0.05 compared to control group and ψ p<0.05 compared to DHEA or methyltestosterone-treated groups.

Table 1: In Vivo Effect of DHEA, δ-1-methyltestosterone & Folinic Acid on Adenosine Levels in Various Rat Tissues

Intracellular Adenosine			
	(nmol/mg)	protein)	
	Heart	Lung	Brain
Control	10.6 <u>+</u> 0.6	3.1 <u>±</u> 0.	0.5 <u>+</u> 0.04
	(n=12)	(n=6)	(n=12)
DHEA	6.7 <u>±</u> 0.5	2.3 <u>+</u> 0.3	0.19 <u>+</u> 0.01
(300 mg/kg)	(n=12)	(n=6)	(n=12)
Methyltestosterone	8.3 <u>+</u> 1.0	N.D.	0.42 <u>+</u> 0.06
(40 mg/kg)	(n=6)		(n=6)
Methyltestost. (M)	6.0 <u>+</u> 0.4	N.D.	0.32 <u>+</u> 0.03
(120mg/kg)	(n=6)		(n=6)
Folinic Acid (F.A.)	12.4 <u>+</u> 2.1	N.D.	0.72 <u>+</u> 0.09
(50mg/kg)	(n=5)		(n=5)
DHEA+ F.A.	11.1 <u>±</u> 0.6	N.D.	0.55 <u>+</u> 0.09
(300mg/kg;50mg/kg)	(n=5)		(n=5)
M + F.A.	9.1 <u>+</u> 0.4	N.D.	0.60 <u>+</u> 0.06
(120mg/kg;50mg/kg)	(n=6)		(n=6)
N.D. = Not Determined			

The results of these experiments indicate that rats administered DHEA or methyltestosterone daily for two weeks showed multi-organ depletion of adenosine. Depletion was dramatic in brain (60% depletion for DHEA, 34% for high dose methyltestosterone) and heart (37% depletion for DHEA, 22% depletion for high dose methyltestosterone). Co-administration of folinic acid completely abrogated steroid-mediated adenosine depletion. Folinic acid administered alone induce increase in adenosine levels for all organs studied.

Example 38: Preparation of the Experimental Model

Cell cultures, HT-29 SF cells, which represent a subline of HY-29 cells (ATCC, Rockville, Md.) and are adapted for growth in completely defined serum-free PC-1 medium (Ventrex, Portland, Me.), were obtained. Stock cultures were maintained in this medium at 37° in a humidified atmosphere containing 5% CO₂. At confluence cultures were replated after dissociation using trypsin/EDTA (Gibco, Grand Island, N.Y.) and re-fed every 24 hours. Under these conditions, the doubling time for HT-29 SF cells during logarithmic growth was 24 hours.

Example 39: Flow Cytometry

Cells were plated at 10⁵/60-mm dish in duplicate. For analysis of cell cycle distribution, cultures were exposed to either 0, 25, 50, or 200 µM DHEA. For analysis of reversal of cell cycle effects of DHEA, cultures were exposed to either 0 or 25 µM DHEA, and the media were supplemented with MVA, CH, RN, MVA plus CH, or MVA plus CH plus RN or were not supplemented. Cultures were trypsinized following 0, 24, 48, or 74 hours and fixed and stained using a modification of a procedure of Bauer et al., Cancer Res., 46, 3173-3178 (1986). Briefly, cells were collected by centrifugation and resuspended in cold phosphate-buffered saline. Cells were fixed in 70% ethanol, washed, and resuspended in phosphate-buffered saline. One ml hypotonic stain solution [50 µg/ml propidium iodide (Sigma Chemical Co.), 20 µg/ml Rnase A (Boehringer Mannheim, Indianapolis, Ind.), 30 mg/ml polyethylene glycol, 0.1% Triton X-100 in 5 mM citrate buffer] was then added, and after 10 min at room temperature, 1 ml of isotonic stain solution [propidium iodide, polyethylene glycol, Triton X-100 in 0.4M NaCl] was added and the cells were analyzed using a flow cytometer, equipped with pulse width/pulse area doublet discrimination (Becton Dickinson Immunocytometry Systems, San Jose, Calif.) After calibration with fluorescent beads, a minimum of 2x10⁴ cells/sample were analyzed, data were displayed s total number of cells in each of 1024 channels of increasing fluorescence intensity, and the resulting histogram was analyzed using the Cellfit analysis program (Becton Dickinson).

Example 40: DHEA Effect on Cell Growth

30

Cells were plated 25,000 cells/30 mm dish in quadruplicate, and after 2 days received 0, 12.5, 25, 50, or 200 μ M DHEA. Cell number was determined 0, 24, 48, and 72 hours later using a Coulter counter (model Z; Coulter Electronics, Inc. Hialeah, Fla.). DHEA (AKZO, Basel, Switzerland) was dissolved in dimethyl sulfoxide,

filter sterilized, and stored at -20°C until use.

Figure 1 illustrates the inhibition of growth for HT-29 cells by DHEA. Points refer to numbers of cells, and bars refer to SEM. Each data point was performed in quadruplicate, and the experiment was repeated three times. Where SEM bars are not apparent, SEM was smaller than symbol. Exposure to DHEA resulted in a reduced cell number compared to controls after 72 hours in 12.5 μ M, 48 hours in 25 or 50 μ M, and 24 hours in 200 μ M DHEA, indicating that DHEA produced a time- and dose-dependent inhibition of growth.

Example 41: DHEA Effect on Cell Cycle

15

20

35

45

To examine the effects of DHEA on cell cycle distribution, HT-29 SF cells were plated (10^5 cells/60 mm dish), and 48 hours later treated with 0,25, 50, or 200 μ M DHEA. FIG. 2 illustrates the effects of DHEA on cell cycle distribution in HT-29 SF cells. After 24, 48, and 72 hours, cells were harvested, fixed in ethanol, and stained with propidium iodide, and the DNA content/cell was determined by flow cytometric analysis. The percentage of cells in G_1 , S, and G_2 M phases was calculated using the Cellfit cell cycle analysis program. S phase is marked by a quadrangle for clarity. Representative histograms from duplicate determinations are shown. The experiment was repeated three times.

The cell cycle distribution in cultures treated with 25 or 50 μ M DHEA was unchanged after the initial 24 hours. However, as the time of exposure to DHEA increased, the proportion of cells in S phase progressively decreased, and the percentage of cells in G_1 , S and G_2 M phases was calculated using the Cellfit cell cycle analysis program. S phase is marked by a quadrangle for clarity. Representative histograms from duplicate determinations are shown. The experiment was repeated three times.

The cell cycle distribution in cultures treated with 25 or 50 μ M DHEA was unchanged after the initial 24 hours. However, as the time of exposure to DHEA increased, the proportion of cells in S phase progressively decreased and the percentage of cells in G_1 phase was increased after 72 hours. A transient increase in G_2 M phase cells was apparent after 48 hours. Exposure to 200 μ M DHEA produced a similar but more rapid increase in the percentage of cells in G_1 and a decreased proportion of cells in S phase after 24 hours, which continued through the treatment. This indicates that DHEA produced a G_1 block in HT-29 SF cells in a time-and dose-dependent manner.

Example 42: Reversal of DHEA-mediated Effect on Growth & Cell Cycle

Reversal of DHEA-mediated Growth Inhibition. Cells were plated as above, and after 2 days received either 0 or 25 μ M DHEA-containing medium supplemented with mevalonic acid ("MVA"; 2 mM) squalene ("SQ"; 80 μ M), cholesterol ("CH"; 15 μ g/ml), MVA plus CH, ribonucleosides ("RN"; uridine, cytidine, adenosine, and guanosine at final concentrations of 30 μ M each), deoxyribonucleosides ("DN"; thymidine, deoxycytidine, deoxyadenosine and deoxyguanosine at final concentrations of 20 μ M each). RN plus DN, or MVA plus CH plus RN, or medium that was not supplemented. All compounds were obtained from Sigma Chemical Co. (St. Louis, Mo.) Cholesterol was solubilized in ethanol immediately before use. RN and DN were used in maximal concentrations shown to have no effects on growth in the absence of DHEA.

Figure 3 illustrates the reversal of DHEA-induced growth inhibition in HT-29 SF cells. In A, the medium was supplemented with 2 μ M MVA, 80 μ M SQ, 15 μ g/ml CH, or MVA plus CH (MVA+CH) or was not supplemented (CON). In B, the medium was supplemented with a mixture of RN containing uridine, cytidine, adenosine, and guanosine in final concentrations of 30 μ M each; a mixture of DN containing thymidine, deoxycytidine, deoxyadenosine and deoxyguanosine in final concentrations of 20 μ M each; RN plus DN (RN+DN); or MVA plus CH plus RN (MVA+CH+RN). Cell numbers were assessed before and after 48 hours of treatment, and culture growth was calculated as the increase in cell number during the 48 hour treatment period. Columns represent cell growth percentage of untreated controls; bars represent SEM. Increase in cell number in untreated controls was 173,370 \pm 6518. Each data point represents quadruplicate dishes from four independent experiments. Statistical analysis was performed using Student's t test; ψ p<0.01; κ p<0.001; compared to treated controls. Note that supplements had little effect on culture growth in absence of DHEA.

Under these conditions, the DHEA-induced growth inhibition was partially overcome by addition of MVA as well as by addition of MVA plus CH. Addition of SQ or CH alone had no such effect. This suggest that the cytostatic activity of DHEA was in part mediated by depletion of endogenous mevalonate and subsequent inhibition of the biosynthesis of an early intermediate in the cholesterol pathway that is essential for cell growth. Furthermore, partial reconstitution of growth was found after addition of RN as well as after addition of RN plus DN but not after addition of DN, indicating that depletion of both mevalonate and nucleotide pools is involved in the growth-inhibitory action of DHEA. However, none of the reconstitution conditions including the combined addition of

MVA, CH, and RN completely overcame the inhibitory action of DHEA, suggesting either cytotoxic effects or possibly that additional biochemical pathways are involved.

Example 43: Reversal of DHEA Effect on Cell Cycle

HT-29 SF cells were treated with 25 FM DHEA in combination with a number of compounds, including MVA, CH, or RN, to test their ability to prevent the cell cycle-specific effects of DHEA. Cell cycle distribution was determined after 48 and 72 hours using flow cytometry.

Figure 4 illustrates reversal of DHEA-induced arrest in HT-29 SF cells. Cells were plated (10⁵ cells/60 mm dish) and 48 hours later treated with either 0 or 25 FM DHEA. The medium was supplemented with 2 FM MVA; 15 Fg/ml CH; a mixture of RN containing uridine, cytidine, adenosine, and guanosine in final concentrations of 30 FM; MVA plus CH (MVA+CH); or MVA plus CH plus RN (MVA+CH+RN) or was not supplemented. Cells were harvested after 48 or 72 hours, fixed in ethanol, and stained with propidium iodine, and the DNA content per cell was determined by flow cytometric analysis. The percentage of cells in G₁, S, and G₂M phases were calculated using the Cellfit cell cycle profile analysis program. S phase is marked by a quadrangle for clarity. Representative histograms from duplicative determinations are shown. The experiment was repeated two times. Note that supplements had little effect on cell cycle progression in the absence of DHEA.

With increasing exposure time, DHEA progressively reduced the proportion of cells in S phase. While inclusion of MVA partially prevented this effect in the initial 48 hours but not after 72 hours, the addition of MVA plus CH was also able to partially prevent S phase depletion at 72 hours, suggesting a requirement of both MVA and CH for cell progression during prolonged exposure. The addition of MVA, CH, and RN was apparently most effective at reconstitution but still did not restore the percentage of S phase cells to the value seen in untreated control cultures. CH or RN alone had very little effect at 48 hours and no effect at 72 hours. Morphologically, cells responded to DHEA by acquiring a rounded shape, which was prevented only by the addition of MVA to the culture medium (data not shown). Some of the DNA histograms after 72 hours DHEA exposure in FIG.4 also show the presence of a subpopulation of cells possessing apparently reduced DNA content. Since the HT-29 cell line is known to carry populations of cells containing varying numbers of chromosomes (68-72; ATCC), this may represent a subset of cells that have segregated carrying fewer chromosomes.

Example 44: Conclusions

10

15

30

45

50

The examples above provide evidence that in vitro exposure of HT-29 SF human colonic adenocarcinoma cells to concentrations of DHEA known to deplete endogenous mevalonate results in growth inhibition and G_1 arrest and that addition of MVA to the culture medium in part prevents these effects. DHEA produced effects upon protein isoprenylation which were in many respects similar to those observed for specific 3-hydroxy-3-methyl-glutaryl-CoA reductase inhibitors such as lovastatin and compactin. Unlike direct inhibitors of mevalonate biosynthesis, however, DHEA mediates its effects upon cell cycle progression and cell growth in a pleiotropic manner involving ribo-and deoxyribonucleotide biosynthesis and possibly other factors as well.

The foregoing examples are illustrative of the present invention, but should not to be construed as limiting thereof. The invention is defined by the following claims, with equivalents of the claims to be included therein.

Example 45: Effect of CoQs & an EA on In Vitro NADPH Levels

Glocose-6-Phosphate Dehydrogenase (G6PD) is an important enzyme that is widespread in mammals, and is involved in the conversion of NADP to NADPH, thereby increasing NADPH levels. An inhibition of the G6PD enzyme, thus, will be expected to result in a reduction of cellular NADPH levels, which event, in turn, will be expected to inhibit pathways that are heavily dependent on NADPH. One such pathway, the so-called One-Carbon-Pool pathway, also known as the Folate Pathway, is directly involved in the production of adenosine by addition of the C2 and C3 carbon atoms of the purine ring. Consequently, the inhibition of this pathway will lead to adenosine depletion.

The present invention is broadly applicable to dehdroepiandrosterones (DHEAs) and Ubiquinones (CoQs). The description of the pathways involved in the present invention are described in the Background section. The present experiment was designed to show that one DHEA and two CoQs inhibit NADPH levels. DHEA, an dehydroepiandrosterone, has already been shown to decrease levels of adenosine in various tissues. See, Examples 1 and 2 above. The fact that two CoQs are shown to lower NADPH levels to a similar extent as a dehydroepiandrosterone, let alone to a similar extent ensures that the NADPH reduction caused by the CoQs will

also result in lower cellular adenosine levels or in adenosine cell depletion. Thus, in accordance with the invention, both dehydroepiandrosterones and Ubiquinones decrease levels of adenosine and, therefore, are useful as medicaments for use in the treatment of diseases where a decrease of adenosine levels or its depletion is desirable, including respiratory diseases such as asthma, bronchoconstriction, lung inflammation and allergies and the like. Both Ubiquinones and DHEA inhibit NADPH levels in a statistically significant manner, when compared to a control. Moreover, the Ubiquinone inhibits NADPH levels to a similar extent as DHEA. The present invention is broadly applicable to the use of dehydroepiandrosterones (DHEAs) and Ubiquinones (CoQs) to the treatment of respiratory and lung diseases, and other diseases associated with varying levels of adenosine, adenosine hypersensitivity, asthma, bronchoconstriction, and/or lung inflammation and allergies. The DHEA and Ubiquinones employed in the present experiments are equivalent to those described and exemplified above.

Enzymatic assay of purified G6PDH

20

25

40

The reaction mixture contained 50mM glycyl glycine buffer, pH 7.4, 2 mM D-glucose-6-phosphate, 0.67 mM Beta-NADP, 10 mM MgCL₂ and 0.0125 units of G6PDH in a final volume of 3.0 ml. All experiments were repeated 4 times.

The control group contained 3 samples that were added no DHEA or ubiquinone. The experimental group contained a similar number of samples (3) for each concentration of DHEA or ubiquinone. One group was added DHEA (in triplicate) at different concentrations. A second group was added different concentrations of a CoQ of long side chain (in triplicate), and a third group received a CoQ of short side chain (in triplicate), both at various doses in the μ M range.

The reaction was started by addition of the enzyme, and the increase in absorbance at 340 nm was measured for 5 minutes. Each data point was conducted in triplicate, and the full experiment was repeated 4 times.

Both DHEA and the ubiquinones inhibited the enzyme activity in a statistically significant manner when compared to controls. DHEA was found to inhibit by 72% in vitro the activity of purified G6PDH when compared to control. Both ubiquinones inhibited the activity of purified G6PDH in vitro by an amount that was not statistically significantly different from that of DHEA. Both DHEA and the ubiquinones inhibited the enzyme in a statistically significant manner when compared to controls. Both long chain and short chain CoQs were found to be -- effective inhibitors of G6PDH.

The above results clearly indicate that CoQ reduced cellular levels of NADPH to an extent similar to DHEA and consequently cellular adenosine levels, and has a therapeutic effect on diseases and conditions associated with them. The present results show that CoQs have a therapeutic effect similar to that of dehydroepiandrosterones. The pathways involved in the present invention, as described above, show the criticality of the results reported here, showing that a dehydroepiandrosterone (DHEA) and tow ubiquinones inhibit NADPH levels in a statistically significant manner. The same dehydroepiandrosterone (DHEA) was shown in Examples 1 and 2 to decrease levels of adenosine in various tissues. The two different ubiquinones employed lowered NADPH levels to a similar extent as DHEA. The NADPH reduction caused by the ubiquinones will, in the case of DHEA, result in lower cellular adenosine levels or adenosine depletion. Thus, in accordance with the invention, both dehydroepiandrosterones and ubiquinones decrease levels of adenosine and are, therefore, useful in the therapy of diseases and conditions where a decrease of adenosine levels or its depletion are desirable, including respiratory and airway diseases such as asthma, bronchoconstriction, lung inflammation and allergies, and the like.

In Examples 46 to 51, micronized anti-sense oligo targeting the adenosine A₁ receptor (EPI 2010) and micronized salmeterol (as the hydroxynaphthoate) are added in the proportions given below either dry or after predispersal in a small quantity of stabilizer, disodium dioctylsulphosuccinate, lecithin, oleic acid or sorbitan solvent to a suspension vessel containing the main bulk of the solvent. The resulting suspension is further dispersed by an appropriate mixing system using, for example, a high shear blender, ultrasonics or a microfluidiser until an ultrafine dispersion is created. The suspension is then continuously recirculated to suitable filling equipment designed for cold fill or pressure filling of solvent. The suspension may be also prepared in a suitable chilled solution of stabilizer, in solvent.

Example 46: Metered Dose Inhaler

Active Ingredient	Target per Actuation
DHEA	200 mg

EPI 2010	1 mg
Stabilizer	5.0 μg
Solvent (1)	23.70 mg
Solvent (2)	61.25 mg

Example 47: Metered I	Oose Inhaler
Active Ingredient	Target per Actuation
DHEA-S	200 mg
EPI 2010	5 mg
Stabilizer	7.5 µg
Solvent (1)	23.67 mg
Solvent (2)	61.25 mg

e Inhaler
Target per Actuation
200 mg
$30 \mathrm{\ mg}$
25.0 μg
23.45 mg
61,25 mg

Example 49: Metered Dose Inhaler		
Active Ingredient	Target per Actuation	
DHEA	600 mg μg	
EPI 2010	1.0 mg	
Stabilizer	15.0 µg	
Solvent (1)	23.56 mg	
Solvent (2)	61.25 mg	

5

Example 50: Metered Dose Inhaler		
Active Ingredient	Target per Actuation	
DHEA-S	600 mg	
EPI 2010	5.0 mg	
Stabilizer	15.0 μg	
Solvent (1)	23.56 mg	
Solvent (2)	61.25 mg	

10	Example 51: Metered Dose Inhaler		
	Active Ingredient	Target per Actuation	
	Ubiquinone	600 mg	
	EPI 2010	30.0 mg	
	Stabilizer	25.0 μg	
	Solvent (1)	23.43 mg	
	Solvent (2)	61.25 mg	

In the following Examples 43 to 48, the active ingredients are micronized and bulk blended with lactose in the proportions given above. The blend is filled into hard gelatin capsules or cartridges or into specifically constructed double foil blister packs (Rotadisks blister packs, Glaxo® to be administered by an inhaler such as the Rotahaler inhaler (Glaxo®) or in the case of the blister packs with the Diskhaler inhaler (Glaxo®).

Example 52: Metered Dose I	Dry Powder Formulation
----------------------------	------------------------

Active Ingredient	·	/cartridge or blister
DHEA		1 mg
EPI 2010		0.05 mg
Lactose Ph. Eur.	to	12.5 or 25.0 mg

Example 53: Metered Dose Dry Powder Formulation

Active Ingredient		/cartridge or blister
DHEA-S		1 mg
EPI 2010		0.1 mg
Lactose Ph. Eur.	to	12.5 or 25.0 mg

Example 54: Metered Dose Dry Powder Formulation

5

10

25

Active Ingredient		/cartridge or blister	
Ubiquinone		1 mg	
EPI 2010		0.15 mg	
Lactose Ph. Eur.	to	12.5 or 25.0 mg	

Example 55: Metered Dose Dry Powder Formulation

Active Ingredient		/cartridge or blister	
DHEA		1 mg	
EPI 2010		0.01 mg	
· Lactose Ph. Eur.	to	12.5 or 25.0 mg	

Example 56: Metered Dose Dry Powder Formulation

Active Ingredient		/cartridge or blister
DHEA-S		1 mg
EPI 2010		0.05 mg
Lactose Ph. Eur.	to	12.5 or 25.0 mg

Example 57: Metered Dose Dry Powder Formulation

Active Ingredient		/cartridge or blister
Ubiquinone		1 mg
EPI 2010		0.1 mg
Lactose Ph. Eur.	to	12.5 or 25.0 mg

Example 58: Metered Dose Inhaler Formulation (1)

Standard 12.5 ml MDI (metered dose inhaler) cans (Presspart Inc., Cary N.C.) are spray-coated with PTFE-FEP-polyamideimide blend (DuPont) and cured according to the vendor's standard procedure. The thickness of the coating is between approximately 1 μ m and approximately 20 μ m. These cans are then purged of air the valves crimped in place, and a suspension of about 68 mg of micronised becomethasone dipropionate monohydrate and 1 mg of oligonucleotide in about 6.1 mg water and about 18.2 g P134a is filled through the valve.

20 Example 59: Metered Dose Inhaler Formulation (2)

Standard 12.5 ml MDI cans (Presspart Inc., Cary N.C.) are spray-coated with PTFE-FEP-polyamideimide blend (DuPont) and cured according to the vendor's standard procedure. The thickness of the coating is between approximately 1 µm and approximately 20 µm. These cans are then purged of air the valves crimped in place, and about 50 mg of dehydroepiandrosterone, 1 mg of micronised oligonucleotide and 50 mg of Coenzyme Q10 in about 182 mg ethanol and about 18.2 g P134a is filled through the valve.

PCT/US02/13135 WO 02/085308

Example 60: Metered Dose Inhaler Formulation (3)

Standard 12.5 ml MDI cans (Presspart Inc., Cary N.C.) are spray-coated with PTFE-PES blend (DuPont) as a single coat and cured according to the vendor's standard procedure. The thickness of the coating is between approximately 1 um and approximately 20 um. These cans are then purged of air, the valves crimped in place, and a suspension of about 41.0 mg, 21.0 mg, 8.8 mg or 4.4 mg of micronised fluticasone propionate and 2 mg of micronised oligonucleotide in about 12 g P134a is filled through the valve.

10 Example 61: Metered Dose Inhaler Formulation (4)

15

25

50

Standard 12.5 ml MDI cans (Presspart Inc., Cary N.C.) are spray-coated with PTFE-PES blend (DuPont) as a single coat and cured according to the vendor's standard procedure. The thickness of the coating is between approximately 1 um and approximately 20 um. These cans are then purged of air, the valves crimped in place, and a suspension of about 8.8 mg, 22 mg or 44 mg of micronised fluticasone propionate with about 6.4 mg of micronised salmeterol xinafoate and 1 mg of micronised oligonucleotide in about 12 g P134a is filled through the valve.

Example 62: Metered Dose Inhaler Formulation (5)

Standard 12.5 ml MDI cans (Presspart Inc., Cary N.C.) are spray-coated with PTFE-FEP-polyamideimide blend (DuPont) and cured according to the vendor's standard procedure. The thickness of the coating is between approximately 1 µm and approximately 20 µm. These cans are then purged of air the valves crimped in place, and a suspension of about 50mg of micronised dehydroepiandrosterone with about 6.4 mg of micronised salmeterol xinafoate and 2 mg of micronised oligonucleotide in about 12 g P134a is filled through the valve.

Metered Dose Inhaler Formulation (6) Example 63:

Standard 12.5 ml MDI cans (Presspart Inc., Cary N.C.) are spray-coated with PTFE-PES blend (DuPont) as a single coat and cured according to the vendor's standard procedure. The thickness of the coating is between approximately 1 µm and approximately 20 µm. These cans are then purged of air, the valves crimped in place, and a suspension of about 50 mg of micronised dehydroepiandrosterone sulfate and 2 mg of micronised oligonucleotide in about 12 g P134a is filled through the valve.

30 Example 64: Effect of CoQs & an EA on In Vitro NADPH Levels

Glocose-6-Phosphate Dehydrogenase (G6PD) is an important enzyme that is widespread in mammals, and is involved in the conversion of NADP to NADPH, thereby increasing NADPH levels. An inhibition of the G6PD enzyme, thus, will be expected to result in a reduction of cellular NADPH levels, which event, in turn, will be expected to inhibit pathways that are heavily dependent on NADPH. One such pathway, the so-called One-Carbon-Pool pathway, also known as the Folate Pathway, is directly involved in the production of adenosine by addition of the C₂ and C₈ carbon atoms of the purine ring. Consequently, the inhibition of this pathway will lead to adenosine depletion.

The present invention is broadly applicable to Epiandrosterones (EAs) and Ubiquinones (CoQs). The description of the pathways involved in the present invention are described in the Background section. The present experiment was designed to show that one EA and two CoQs inhibit NADPH levels. DHEA, an Epiandrosterone, has already been shown to decrease levels of adenosine in various tissues. See, Examples 1 and 2 above. The fact that two CoQs are shown to lower NADPH levels to a similar extent as an Epiandrosterone, let alone to a similar extent ensures that the NADPH reduction caused by the CoQs will also result in lower cellular adenosine levels or in adenosine cell depletion. Thus, in accordance with the invention, both Epiandrosterones and Ubiquinones decrease 45 levels of adenosine and, therefore, are useful as medicaments for use in the treatment of diseases where a decrease of adenosine levels or its depletion is desirable, including respiratory diseases such as asthma, bronchoconstriction, lung inflammation and allergies and the like. Both Ubiquinones and DHEA inhibit NADPH levels in a statistically significant manner, when compared to a control. Moreover, the Ubiquinone inhibits NADPH levels to a similar extent as DHEA. The present invention is broadly applicable to the use of Epiandrosterones (EAs) and Ubiquinones (CoQs) to the treatment of respiratory and lung diseases, and other diseases associated with varying levels of adenosine, adenosine hypersensitivity, asthma, bronchoconstriction, and/or lung inflammation and allergies. The

DHEA and Ubiquinones employed in the present experiments are equivalent to those described and exemplified above

Enzymatic assay of purified G6PDH

15

20

25

35

The reaction mixture contained 50mM glycyl glycine buffer, pH 7.4, 2 mM D-glucose-6-phosphate, 0.67 mM Beta-NADP, 10 mM MgCL2 and 0.0125 units of G6PDH in a final volume of 3.0 ml. All experiments were repeated 4 times.

The control group contained 3 samples that were added no DHEA or Ubiquinone. The experimental group contained a similar number of samples (3) for each concentration of DHEA or Ubiquinone. One group was added DHEA (in triplicate) at different concentrations. A second group was added different concentrations of a CoQ of long side chain (in triplicate), and a third group received a CoQ of short side chain (in triplicate), both at various doses in the μ M range.

The reaction was started by addition of the enzyme, and the increase in absorbance at 340 nm was measured for 5 minutes. Each data point was conducted in triplicate, and the full experiment was repeated 4 times.

Both DHEA and the Ubiquinones inhibited the enzyme activity in a statistically significant manner when compared to controls. DHEA was found to inhibit by 72% in vitro the activity of purified G6PDH when compared to control. Both Ubiquinones inhibited the activity of purified G6PDH in vitro by an amount that was not statistically significantly different from that of DHEA. Both DHEA and the Ubiquinones inhibited the enzyme in a statistically significant manner when compared to controls. Both long chain and short chain CoQs were found to be effective inhibitors of G6PDH.

The above results clearly indicate that CoQ reduced cellular levels of NADPH to an extent similar to DHEA and consequently cellular adenosine levels, and has a therapeutic effect on diseases and conditions associated with them. The present results show that CoQs have a therapeutic effect similar to that of epiandrosterones. The pathways involved in the present invention, as described above, show the criticality of the results reported here, showing that an Epiandrosterone (DHEA) and two Ubiquinones inhibit NADPH levels in a statistically significant manner. The same epiandrosterone (DHEA) was shown in Examples 1 and 2 to decrease levels of adenosine in various tissues. The two different Ubiquinones employed lowered NADPH levels to a similar extent as DHEA. The NADPH reduction caused by the Ubiquinones will, in the case of DHEA, result in lower cellular adenosine levels or adenosine depletion. Thus, in accordance with the invention, both Epiandrosterones and Ubiquinones decrease levels of adenosine and are, therefore, useful in the therapy of diseases and conditions where a decrease of adenosine levels or its depletion are desirable, including respiratory and airway diseases such as asthma, bronchoconstriction, lung inflammation and allergies, and the like.

These are clearly superior results, which could not have been expected based on the knowledge of the art at the time of this invention. The experimental data and results provided are clearly enabling of the effect of ubiquinones on adenosine cellular levels and, therefore, on its therapeutic affect on diseases and conditions associated with them, as described and claimed in this patent.

The foregoing examples are illustrative of the present invention, and are not to be construed as limiting thereof. The invention is defined by the following claims, with equivalents of the claims to be included therein.

WHAT IS CLAIMED AS NOVEL & UNOBVIOUS

IN UNITED STATES LETTERS PATENT IS:

1. A pharmaceutical composition, comprising a pharmaceutically or veterinarily acceptable carrier or diluent, and prophylactic or therapeutic amounts of a first and second active agents;

the first active agent comprising an oligonucleotide(s) (oligo(s)) that is anti-sense to the initiation codon, the coding region, the 5'-end or the 3'-end genomic flanking regions, the 5' and 3' intron-exon junctions, or regions within 2 to 10 nucleotides of the junctions of one or more gene(s) encoding or to regulatory sequence(s) associated with one or more target polypeptide(s) associated with lung and/or nasal airway dysfunction, or anti-sense to the corresponding mRNA; or combinations or mixtures of the oligo(s); and the second active agent comprising an anti-inflammatory steroid (AIS) of chemical formula

wherein R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{12} , R_{13} , R_{14} and R_{19} are independently H, OR, halogen, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene, (C_1-C_{10}) alkyne, (C_1-C_{10}) alkoxy, or two or more of R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{12} , R_{13} , R_{14} and R_{19} can be linked by combination of the atoms of C, O, N, S, P and Si to form a 3 to 15 member ring(s), in the α - and/or β - configuration;

R₅, R₆, R₁₀, and R₁₁ are independently OH, SH, H, halogen, pharmaceutically acceptable ester, pharmaceutically acceptable thioester, pharmaceutically acceptable ether, pharmaceutically acceptable thioether, pharmaceutically acceptable inorganic esters, pharmaceutically acceptable monosaccharide, disaccharide or oligosaccharide, spirooxirane, spirothirane, -OSO₂R₂₀, -OPOR₂₀R₂₁, (C₁-C₁₀) alkyl, (C₁-C₁₀) alkene, (C₁-C₁₀) alkyne or OR₂₃, -SO₂O-CH₂CHCH₂OCOR₂₅

wherein, R₂₃ is hydrogen or SO₂OM, wherein M is selected from H, Na, sulfatide; -PO₂O-CH₂CHCH₂OCOR₂₅ OCOR₂₄ or

phosphatide OCOR₂₄, wherein R₂₄ and R₂₅, which may be the same or different, are straight or branched (C₁-C₂₀) alkyl, (C₁-C₂₀) alkene, (C₁-C₂₀) alkyne, sugar, polyethyleneglycol (PEG) or glucuronide

R₅ and R₆ taken together are =0; R₁₀ and R₁₁ taken together are =0;

 R_{15} is (1) H, halogen, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene, (C_1-C_{10}) alkyne, or (C_1-C_{10}) alkoxy when R_{16} is $-C(O)OR_{22}$, (2) H, halogen, OH, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene or (C_1-C_{10}) alkyne, when R_{16} is halogen, OH, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene or (C_1-C_{10}) alkyne, (3) H, halogen, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkenyl, (C_1-C_{10}) alkynyl, formyl, (C_1-C_{10}) alkanoyl or epoxy when R_{16} is OH, (4) OR, SR, SH, H, halogen, pharmaceutically acceptable ester, pharmaceutically acceptable thioester, pharmaceutically acceptable ether, pharmaceutically acceptable thioether, pharmaceutically acceptable inorganic esters, pharmaceutically acceptable monosaccharide, disaccharide or oligosaccharide, spirooxirane, spirothirane, $-OSO_2R_{20}$ or $-OPOR_{20}R_{21}$ when R_{16} is H, or R_{15} and R_{16} taken together are =O;

 R_{17} and R_{18} are independently (1) H, -OH, halogen, (C_1-C_{10}) alkyl, (C_1-C_{10}) alkene, (C_1-C_{10}) alkyne or $-(C_1-C_{10})$ alkoxy when R_6 is H OR, halogen, (C_1-C_{10}) alkyl or $-C(O)OR_{22}$, (2) H, (C_1-C_{10}) alkyl) $_n$ amino, (C_1-C_{10}) alkyl) $_n$ amino, (C_1-C_{10}) alkyl) $_n$ amino- (C_1-C_{10}) alkyl, $((C_1-C_{10}))$ alkyl, $((C_1-C_{10}))$ alkyl, $((C_1-C_{10}))$ alkyl, $((C_1-C_{10}))$ alkyl) $_n$ amino- (C_1-C_{10}) alkene) $_n$ amino- (C_1-C_{10}) alkyne) $_n$ amino- (C_1-C_{10}) alkyl) $_n$ amino- (C_1-C_{10}) alkyne, $((C_1-C_{10}))$ a

; or pharmaceutically or veterinarily acceptable salts thereof; and/or

a ubiquinone of the chemical formula

$$H_3CO$$
 CH_3
 CH_3

wherein n=1 to 12, or pharmaceutically or veterinarily acceptable salts thereof; the first and second agents being present in amounts effective for reducing or depleting levels of, or reducing sensitivity to, adenosine, reducing levels of adenosine receptors, producing bronchodilation, increasing levels of ubiquinone or lung surfactant in a subject's tissue (s), or treating bronchoconstriction, lung inflammation or lung allergies or a respiratory or lung disease or condition.

- 2. The composition of claim 1, wherein the oligo contains up to about 15% A.
- 3. The composition of claim 1, wherein the oligo(s) of the first active agent is (are) anti-sense to the initiation codon, the coding region, the 5'-end or the 3'-end genomic flanking regions, the 5' or 3' intron-exon junctions, and regions within 2 to 10 nucleotides of the junctions of at least one oncogene(s) or a gene(s) encoding, or regulating expression of, a target polypeptide(s) associated with lung and/or nasal airway dysfunction or cancer, is (are) anti-sense to the corresponding mRNA(s). Multiple target anti-sense oligo(s) (MTAs) or combinations thereof; the polypeptides comprising peptide factors and transmitters, antibodies, cytokines or chemokines, enzymes, binding proteins, adhesion molecules, their receptors, or malignancy associated proteins.
- 4. The composition of claim 3, wherein the oligo(s) is (are) anti-sense to the initiation codon, the coding region, the 5'-end or the 3'-end genomic flanking regions, the 5' or 3' intron-exon junctions, or regions within 2 to 10 nucleotides of the junctions of at least one oncogene(s) or a gene(s) encoding, or regulating expression of, a target polypeptide(s) associated with lung and/or nasal airway dysfunction or is (are) anti-sense to the oncogene mRNA, or the corresponding mRNA; or MTAs or combinations thereof; wherein the polypeptides comprise of transcription factors, stimulating or activating peptide factors, cytokines, cytokine receptors, chemokines, chemokine receptors, adenosine receptors, bradykinin receptors, endogenously produced specific or non-specific enzymes, immunoglobulins or antibodies, antibody receptors, central nervous system (CNS) or peripheral nervous or non-nervous system receptors, CNS or peripheral nervous or non-nervous system peptide transmitters, adhesion molecules, defensins, growth factors, vasoactive peptides and receptors, binding proteins, or malignancy associated proteins.
- 5. The composition of claim 4, wherein the encoded polypeptide(s) comprise(s) one or more adenosine receptors A_1 , A_{2a} , A_{2b} or A_3 , bradykinin receptors B1 or B2, NfkB Transcription Factor, Interleukin-8

Receptor (IL-8 R), Interleukin 5 Receptor (IL-5 R), Interleukin 4 Receptor (IL-4 R), Interleukin 3 Receptor (IL-3 R), Interleukin-1 β (IL-1 β), Interleukin 1 β Receptor (IL-1 β R), Eotaxin, Tryptase, Major Basic Protein, β 2adrenergic Receptor Kinase, Endothelin Receptor A, Endothelin Receptor B, Preproendothelin, Bradykinin B2 Receptor, IgE High Affinity Receptor, Interleukin 1 (IL-1), Interleukin 1 Receptor (IL-1 R), Interleukin 9 (IL-9), Interleukin-9 Receptor (IL-9 R), Interleukin 11 (IL-11), Interleukin-11 Receptor (IL-11 R), Inducible Nitric Oxide Synthase, Cyclo-oxygenase-1 (COX-1), Cyclo-oxygenase-2 (COX-2), Intracellular Adhesion Molecule 1 (ICAM-1) Vascular Cellular Adhesion Molecule (VCAM), Rantes, Endothelial Leukocyte Adhesion Molecule (ELAM-1), Monocyte Activating Factor, Neutrophil Chemotactic Factor, Neutrophil Elastase, Defensin 1, 2 and 3, Muscarinic Acetylcholine Receptors, Platelet Activating Factor, Tumor Necrosis Factor α, 5-lipoxygenase, Phosphodiesterase IV, Substance P, Substance P Receptor, Histamine Receptor, Chymase, CCR-1 CC Chemokine Receptor, CCR-2 CC Chemokine Receptor, CCR-3 CC Chemokine Receptor, CCR-4 CC Chemokine Receptor, CCR-5 CC Chemokine Receptor, Prostanoid Receptors, GATA-3 Transcription Factor, Neutrophil Adherence Receptor, MAP Kinase, Interleukin-9 (IL-9), NFAT Transcription Factors, STAT 4, MIP-1α, MCP-2, MCP-3, MCP-4 Cyclophillins, Phospholipase A2, Basic Fibroblast Growth Factor, Metalloproteinase, CSBP/p38 MAP Kinase, Tryptase Receptor, PDG2, Interleukin-3 (IL-3), Interleukin-1\(\beta\) (IL-1\(\beta\)), Cyclosporin A-Binding Protein, FK5-Binding Protein, α4β1 Selectin, Fibronectin, α4β7 Selectin, Mad CAM-1, LFA-1 (CD11a/CD18), PECAM-1, LFA-1 Selectin, C3bi, PSGL-1, E-Selectin, P-Selectin, CD-34, L-Selectin, p150,95, Mac-1 (CD11b/CD18), Fucosyl transferase, VLA-4, CD-18/CD11a, CD11b/CD18, ICAM2 and ICAM3, C5a, CCR3 (Eotaxin Receptor), CCR1, CCR2, CCR4, CCR5, LTB-4, AP-1 Transcription Factor, Protein kinase C, Cysteinyl Leukotriene Receptor, Tachychinnen Receptors (tach R), IkB Kinase 1 & 2, STAT 6, c-mas or NF-Interleukin-6 (NF-IL-6).

The composition of claim 4, wherein the encoded polypeptide(s) comprise(s) a H2A histone family member N, Tubulin, beta polypeptide, ELL gene (11-19 lysine-rich leukemia gene);7-dehydrocholesterol reductase, ADP-ribosylation factor-like 7, Karyopherin alpha 2 (RAG cohort 1, importin alpha 1), EST (AI038433), EST (AI122689), EST (AI092623), ESTs (AI095492), ESTs (AI138216), ESTs (AI128305), ESTs (AI125228), ESTs (AI041482), ESTs (AI051839), Homo sapiens mRNA; cDNA DKFZp434A1716, ESTs (AI096522), ESTs (AI122807), ESTs (AI041212), EST (AI125651), Enclase 1, (alpha), EST (AI024215), EST (AI034360), Homo sapiens mRNA; cDNA DKFZp564H0764, Homo sapiens mRNA for KIAA1363 protein, partial cds, Potassium voltage-gated channel, shaker-related subfamily, beta member 2, ER-associated DNAJ; ER-associated Hsp40 cochaperone; hDj9; ERj3, ESTs, Weakly similar to p38 protein [H.sapiens] (AA906703), CGI-142, ESTs (AA463249), Homo sapiens clone 25058 mRNA sequence ESTs (R49144), Squamous cell carcinoma antigen 1, ESTs (AA425700), Myosin X, ESTs (AA459692), Epithelial protein lost in neoplasm beta, CD44 antigen (homing function and Indian blood group system), Coagulation factor III (thromboplastin, tissue factor), ESTs (AA909635), Adducin 1 (alpha), 5' Nucleotidase (CD73), ESTs, moderately similar to semaphorin C [M.musculus] (AA293300). ESTs (AA278764), ESTs (AA678160), Calmodulin 2 (phosphorylase kinase, delta), ESTs (R42770), Chloride intracellular channel 1, High-mobility group (nonhistone chromosomal) protein 17, Ubiquitin carrier protein, alpha 1 (testis specific), Transglutaminase 2 (C polypeptide, protein-glutamine-gammaglutamyltransferase), Sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican), Proteasome (prosome, macropain) 26S subunit, non-ATPase, 2, Tubulin, beta polypeptide, Filamin B, beta (actin-binding protein-278), Stanniocalcin, Low density lipoprotein receptor (familial hypercholesterolemia), Plectin 1, intermediate filament binding protein, 500kD, S100 calcium-binding protein A2, Immediate early response 3, Calpain, large polypeptide L2, Pleckstrin homology-like domain, family A, member 1, Melanoma adhesion molecule, CD44 antigen (homing function and Indian blood group system), Programmed cell death 5, Hexokinase 1, Vascular endothelial growth factor, Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor), Calumenin, Syntaxin 11, Diphtheria toxin receptor (heparin-binding epidermal growth factor-like growth factor), Fn14 for type I transmenmbrane protein, Nef-associated factor 1, High-mobility group (nonhistone chromosomal) protein isoforms I and Y, Catechol-O-methyltransferase, C-terminal binding protein 1, Collagen, type XVII, alpha 1, ESTs (N58473), Farnesyl-diphosphate farnesyltransferase 1 RNA helicase-related protein, Interferon stimulated gene (20kD), Steroid-5-alpha-reductase, alpha polypeptide 1 (3-oxo-5 alpha-steroid delta 4-dehydrogenase alpha 1), Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase), Laminin, alpha 3 (nicein (150kD), kalinin (165kD), BM600 (150kD), epilegrin), Collagen, type XVII, alpha 1, Keratin 18, Heparan sulfate (glucosamine) 3-O-sulfotransferase 1, Tubulin, alpha 2, Adenylyl cyclase-associated protein, Forkhead box D1, Cathepsin C, ESTs, Highly similar to AF151802 1 CGI-44 protein [H.sapiens] (T74688), Ribonucleotide reductase

M2 polypeptide, Laminin, gamma 2 (nicein (100kD), kalinin (105kD), BM600 (100kD), Herlitz junctional epidermolysis bullosa)), Homo sapiens mRNA; cDNA DKFZp586P1622 (from clone DKFZp586P1622), ESTs, Weakly similar to /prediction (AA284245), or Lactate dehydrogenase A.

- 7. The composition of claim 1, wherein one or more As of the first active agent is(are) substituted by a universal base comprising a heteroaromatic base that binds to thymidine or uridine but has antagonist activity or less than about 0.3 of the adenosine agonist or antagonist activity at the adenosine A_1 , A_{2n} , A_{2n} , A_{2n} or A_3 receptors.
- 8. The composition of claim 7, wherein the heteroaromatic base(s) comprise(s) pyrimidines or purines, which may be substituted by O, halo, NH₂, SH, SO, SO₂, SO₃, COOH, branched or fused primary or secondary amino, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, alkoxy, alkenoxy, acyl, cycloacyl, arylacyl, alkynoxy, cycloalkoxy, aroyl, arylthio, arylsulfoxyl, halocycloalkyl, alkylcycloalkyl, alkenylcycloalkyl, alkynylcycloalkyl, haloaryl, alkylaryl, alkenylaryl, arylalkyl, arylalkenyl, arylalkynyl, arylcycloalkyl, all of which may be further substituted by O, halo, NH₂, primary, secondary or tertiary amine, SH, SO, SO₂, SO₃, cycloalkyl, heterocycloalkyl or heteroaryl.
- 9. The composition of claim 7, wherein the purines are substituted at positions 1, 2, 3, 6, and/or 8, the pyrimidines are substituted at positions 2, 3, 4, 5 and/or 6, and the purines and pyrimidines have the chemical formula

pyrimidines purines

wherein R¹, R², R³, R⁴ and R⁵ are independently H, alkyl, alkenyl or alkynyl and R³ is H, aryl, dicycloalkyl, dicycloalkenyl, dicycloalkynyl, cycloalkynyl, cycloalkynyl, O-cycloalkynyl, O-cycloalkynyl, O-cycloalkynyl, O-cycloalkynyl, NH₂-alkylamino-ketoxyalkyloxy-aryl, or mono or dialkylaminoalkyl-N-alkylamino-SO₂aryl, and R4 and R5 are independently R1 and together are R3, and the pyrimidines and purines optionally comprise theophylline, caffeine, dyphylline, etophylline, acephylline piperazine, bamifylline, enprofylline or xanthine.

- 10. The composition of claim 9, wherein the universal base of the first active agent comprises 3-nitropyrrole-2'-deoxynucleoside, 5-nitro-indole, 2-deoxyribosyl-(5-nitroindole), 2-deoxyribofuranosyl-(5-nitroindole), 2'-deoxyinosine, 2'-deoxynebularine, 6H, 8H-3,4-dihydropyrimido [4,5-c] oxazine-7-one or 2-amino-6-methoxyaminopurine.
- 11. The composition of claim 1, wherein if present in the first active agent(s), one or more methylated cytocine(s) (mC) is(are) substituted for a C in or to form one or more CpG dinucleotide(s).
- 12. The composition of claim 1, wherein one or more mononucleotide(s) of the first active agent(s) is(are) linked or modified by one or more of methylphosphonate, 5'-N-carbamate, phosphotriester, phosphorothioate, phosphorodithioate, boranophosphate, formacetal, thioformacetal, thioether, carbonate, carbamate, sulfate, sulfonate, sulfonamide, sulfone, sulfite, sulfoxide, sulfide, hydroxylamine, methylene(methylmino) (MMI), methoxymethyl (MOM), methoxyethyl (MOE), methyleneoxy (methylimino) (MOMI), 2'-O-methyl, phosphoramidate, or C-5 substituted residues.
- 13. The composition of claim 12, wherein one or more mononucleotide residue(s) of the first active agent(s) are linked by phosphorothicate residues.
- 14. -The composition of claim 1, wherein the anti-sense oligo of the first active agent(s) comprise(s) about 7 to about 60 mononucleotides.
- 15. The composition of claim 1, wherein the anti-sense oligo of the first active agent(s) comprise(s) fragments 1, 3, 5, 7 and 8 to 2498 (SEQ ID NOS: 1 through 2498).

16. The composition of claim 1, wherein the anti-sense oligo of the first active agent(s) is(are) operatively linked to, or complexed with, a cell internalized or up-taken agent(s) or a cell targeting agent(s).

- 17. The composition of claim 15, wherein the cell internalized or up-taken agent comprises transferrin, asialoglycoprotein or streptavidin, and the cell targeting agent comprises a prokaryotic or eukaryotic vector or plasmid.
 - 18. The composition of claim 1, wherein the oligo contains up to about 10% A.
- 19. The composition of claim 1, wherein the oligo(s) of the first active agent(s) is(are) hybridized to a ribonucleic acid or a deoxyribonucleic acid and delivered as a double stranded agent.
- 20. The composition of claim 1, wherein the carrier or diluent comprises a gaseous, liquid, or solid carrier or diluent, and the active agents are present in an amount of about 0.01 to about 99.99 w/w of the composition.
- 21. The composition of claim 20, further comprising an agent selected from other therapeutic agents, surfactants, flavoring or coloring agents, fillers, volatile oils, buffering agents, dispersants, RNA inactivating agents, anti-oxidants, flavoring agents, propellants or preservatives.
- The composition of claim 21, wherein the other therapeutic or bioactive agent(s) is (are) selected from analgesics, pre-menstrual medications, menopausal agents, anti-aging agents, anti-anxyolytic agents, mood disorder agents, anti-depressants, anti-bipolar mood agents, anti-schyzophrenic agents, anti-cancer agents, alkaloids, blood pressure controlling agents, muscle relaxants, steroids, soporific agents, anti-ischemic agents, anti-arrythmic agents, contraceptives, vitamins, minerals, tranquilizers, neurotransmitter regulating agents, wound healing agents, anti-angyogenic agents, cytokines, growth factors, B-adrenergic receptor agonists, anti-metastatic agents, antacids, anti-histaminic agents, anti-bacterial agents, anti-viral agents, anti-gas agents, appetite suppressants, sun screens, emollients, skin temperature lowering products, radioactive phosphorescent or fluorescent contrast diagnostic or imaging agents, libido altering agents, bile acids, laxatives, anti-diarrheic agents, skin renewal agents, hair growth agents, analgesics, pre-menstrual medications, anti-menopausal agents, hormones, anti-aging agents, anti-anxiolytic agents, nociceptic agents, mood disorder agents, anti-depressants, anti-bipolar mood agents, anti-schizophrenic agents, anti-cancer agents, alkaloids, blood pressure controlling agents, other hormones, other anti-inflammatory agents, agents for treating arthritis, burns, wounds, chronic bronchitis, chronic obstructive pulmonary disease (COPD), inflammatory bowel disease such as Crohn's disease, ulcerative colitis, autoimmune disease, or lupus erythematosus, muscle relaxants, soporific agents, anti-ischemic agents, anti-arrhythmic agents, contraceptives, vitamins, minerals, tranquilizers, neurotransmitter regulating agents, wound and burn healing agents, anti-angiogenic agents, cytokines, growth factors, anti-metastatic agents, antacids, anti-histaminic agents, anti-bacterial agents, antiviral agents, anti-gas agents, agents for reperfusion injury, counteracting appetite suppressants, sun screens, emollients, skin temperature lowering products, radioactive phosphorescent or fluorescent contrast diagnostic or imaging agents, libido altering agents, bile acids, laxatives, anti-diarrheic agents, skin renewal agents or hair growth agents.
- The composition of claim 22, wherein the surfactant comprises surfactant protein A, surfactant protein B, surfactant protein C, surfactant protein D and surfactant Protein E, di-saturated phosphatidyl choline (other than dipalmitoyl), dipalmitoyl phosphatidyl choline, phosphatidyl choline, phosphatidyl glycerol, phosphatidyl inositol, phosphatidyl ethanolamine, phosphatidyl serine; phosphatidic acid, ubiquinones, lysophosphatidyl ethanolamine, lysophosphatidyl choline, palmitoyllysophosphatidyl choline, dehydroepiandrosterone, dolichols, sulfatidic acid, glycerol-3-phosphate, dihydroxyacetone phosphate, glycerol, glycero-3-phosphocholine, dihydroxy acetone, palmitate, cytidine diphosphate (CDP) diacyl glycerol, CDP choline, choline, choline phosphate; natural or artificial lamellar bodies as carrier surfactant vehicles, omega-3 fatty acids, polyenic acid, polyenoic acid, lecithin, palmitinic acid, non-ionic block copolymers of ethylene or propylene oxides, polyoxypropylene, monomeric or polymeric, polyoxyethylene, monomeric and polymeric, poly (vinyl amine) with dextran and/or alkanoyl side chains, Brij 35, Triton X-100 or synthetic surfactants ALEC, Exosurf, Survan or Atovaquone.
- 24. The composition of claim 1, comprising one or more oligo(s), an anti-inflammatory steroid(s) of formula (Ia) or (Ib), a steroid, a surfactant, and a carrier or diluent for the oligo.
- 25. The composition of claim 1, wherein the second active agent comprises CoQ_n , wherein n is 1 to 10.
 - 26. The composition of claim 1, wherein the second active agent comprises CoQ_n, wherein n is 6 to

10.

- 27. The composition of claim 1, wherein the second active agent comprises CoQ_n, wherein n is 10.
- 28. The composition of claim 1, wherein the second active agent comprises an anti-inflammatory steroid (AIS) of formula (Ia) selected from dehydroepiandrosterone, wherein R and R¹ are H and the broken line represents a double bond, 16-alpha bromodehydroepiandrosterone wherein R is Br, R¹ is H and the broken line represents a double bond, etiocholanolone, wherein R and R1 are each hydrogen and the broken line represents a single bond, dehydroepiandrosterone sulfate, wherein R is H, R1 is SO₂OM and M is a sulfatide group as defined above, and the broken line represents a double bond, the compound of formula (Ia), R is halogen selected from Br, C1 or F, R1 is H, and the broken line represents a double bond, 16-alpha-fluorodehydro-epiandrosterone, or pharmaceutically or veterinarily acceptable salts thereof.
 - 29. The composition of claim 1, wherein the oligo(s) of the first agent contains up to about 5% A.
 - 30. The composition of claim 1, wherein the oligo(s) of the first agent is A free.
- 31. The composition of claim 1, wherein the second active agent comprises an anti-inflammatory steroid (AIS) of formula (Ib), wherein R¹⁵ and R¹⁶ together are =O; R⁵ is -OH; R⁵ is -OSO₂R²⁰; R¹⁵ and R²⁰ together is H; or pharmaceutically or veterinarily acceptable salts thereof.
- 32. The composition of claim 1, wherein the second active agent comprises an AIS selected from budesonide, testosterone, progesterone, fluticasone, beclomethasone, prednisone, momethasone, estrogen, dexamethasone, hydrocortisone, triamcinolone, flunisolide, methylprednisolone prednisone, hydrocortisone, or analogues thereof.
- 33. The composition of claim 1, wherein the active agents are present in an amount of about 0.01 to about 99.99 w/w of the composition.
- The composition of claim 1, wherein the second active agent comprises an anti-inflammatory 34, selected from 21-acetoxypregnenolone ((3\beta)-21-(acetyloxy)-3-hydroxypregn-5-en-20-one); (AIS) alclometasone ((7a, 11β, 16a)-7-Chloro-11, 17, 21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its 17,21dipropionate form (C₂₈H₃₇ClO₇); algestone ((16α)-16,17-dihydroxypregn-4-ene-3,20-dione), its cyclic acetal with acetone form $(C_{24}H_{34}O_4)$, or its 16α -methyl ether form $(C_{22}H_{32}O_4)$; amcinonide $((11\beta, 16\alpha)-21-(acetyloxy)-16,17-$ [cyclopentylidenebis(oxy)]-9-fluoro-11-hydroxypregna-1,4-di-ene-3,20-dione); beclomethasone ((11B, 16B)-9chloro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its dipropionate form (C₂₈H₃₇ClO₇), or its monopropionate form; betamethasone ((11β, 16β)-9-fluoro-11, 17, 21-trihydroxy-16-methylpregna-1,4-diene-3,20dione), its 21-acetate form (C₂₄H₃₁FO₆), its 21-adamantoate form (C₃₃H₄₃FO₆), its 17-benzoate form (C₂₉H₃₃FO₆), its 17, 21-dipropionate form (C₂₈H₃₇FO₇), its 17-valerate form (C₂₇H₃₇FO₆), or its 21-phospate disodium salt form $(C_{22}H_{28}FNa_2O_8P)$; budesonide $((11\beta, 16\alpha)-16,17-[butylidenebis(oxy)]-11, 21-dihydropregna-1,4-diene-3,20-dione);$ chloroprednisone ((6α)-chloro-17,21-dihydroxypregna-1,4-diene-3,11,20-trione), or its 21-acetate (C₂₃H₂₇ClO₆); ciclesonide; clobetasol ((11β,16β)-21-chloro-9-fluoro-11,17-dihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its 17-propionate form (C₂₅H₃₂ClFO₅); clobetasone ((16β)-21-chloro-9-fluoro-17-hydroxy-16methyloregna-1,4-diene-3,11,20-trione), or its 17-butyrate form (C₂₆H₃₂ClFO₅); clocortolone ((6α,11β,16α)-9chloro-6-fluoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₄H₃₀ClFO₅), or its 21-pivalate form (C₂₇H₃₆ClFO₅); cloprednol ((11β)-6-chloro-11,17,21-trihydroxypregna-1,4,6-triene-3,20-dione); coroxon (phosphoric acid 3-chloro-4-methyl-2-oxo-2H-1-benzopyran-7-yl diethyl ester); cortisone (17,21dihydroxypregn-4-ene-3,11,20-trione), its 21-acetate form (C₂₃H₃₀O₆), or its 21-cyclopentanepropionate form cortivazol ((11β,16α)-21-(acetyloxy)-11,17-dihydroxy-6,16-dimethyl-2'-phenyl-2'H-pregna-2,4,6- $(C_{29}H_{40}O_6);$ trieno[3,2-c]pyrazol-20-one); deflazacort ((11B,16B)-21-(acetyloxy)-11-hydroxy-2'-methyl-5'H-pregna-1,4- $((11\beta,16\alpha)11,21-dihydroxy-16,17-[(1$ dieno[17,16-d]oxazole-3,20-dione); desonide methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione); desoximetasone ((11β,16α)-9-fluoro-11, 21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione); dexamethasone ((11β,16α)-9-fluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₄H₃₁FO₆), its 21-(3,3-dimethylbutyrate) form (C₂₈H₃₉FO₆; Chemerda et al., US Patent No. 2,939,873), its 21-diethylaminoacetate form (C28H41FNO6), its 21-isonicotinate form (C₂₈H₄₁FNO₆), its 17,21-dipropionate form (C₂₈H₃₇FNO₆), or its 21-palmitate form (C₃₈H₅₉FO₆); diflorasone ((6α,11β,16β)-6,9-difluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its diacetate form $(C_{26}H_{32}F_2O_7)$; diflucortolone ($(6\alpha,11\beta,16\alpha)$ -6,9-difluoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione),

or its 21-valerate form (C₂₇H₃₆F₂O₅); difluprednate ((6α,11β)-21-(acetyloxy)-6,9-difluoro-11-hydroxy-17-(1oxobutoxy)pregna-1,4-diene-3,20-dione); enoxolone ((3\beta,20\beta)-3-hydroxy-11-oxoolean-12-en-29-oic acid), or its 18α-hydrogen form; fluazacort ((11β,16β)-21-(acetyloxy)-9-fluoro-11-hydroxy-2'-methyl-5'H-pregna-1,4dieno[17,16-d]oxazole-3,20-dione); flucloronide $((6\alpha, 11\beta, 16\alpha)-9, 11-dichlro-6-fluoro-21-hydroxy-16, 17-[(1$ methylethylidene)bis(oxy)]-pregna-1,4-diene-3,20-dione); flumethasone $((6\alpha,11\beta,16\alpha)-6,9-difluoro-11,17,21$ trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₄H₃₀F₂O₆), or its 21-pivalate form $(C_{27}H_{36}F_2O_6)$; flunisolide $((6\alpha,11\beta,16\alpha)-6$ -fluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)] bis(oxy)]pregna-1,4-diene-3,20-dione), or its 21-acetate form ($C_{26}H_{33}FO_7$); fluocinolone acetate ((6 α ,11 β ,16 α)-6,9-difluoro-11,21dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]-pregna-1,4-diene-3,20-dione); fluocinonide ((6α,11β,16α)-21-(acetyloxy)-6,9-difluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]-pregna-1,4-diene-3,20-dione); fluocortin ((6α,11β,16α)-6-fluoro-11-hydroxy-16-methyl-3,20-dioxopregna-1,4-dien-21-oic acid fluocortolone ((6α,11β,16α)-6-fluoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form $(C_{24}H_{31}FO_5)$, its 21-hexanoate form $(C_{28}H_{39}FO_5)$, or its 21-pivalate form $(C_{22}H_{37}FO_5)$; fluorometholone $((6\alpha,11\beta)-9$ fluoro-11,17-dihydroxy-6-methylpregana-1,4-diene-3,20-dione), or its 17-acetate form (C24H31FO5); fluperolone ([11\beta,17\alpha,17\(S)]-17-[2-(acetyloxy)-1-oxopropyl]-9-fluoro-11,17-dihydroxyandrosta-1,4-dien-3-one); fluprednidene acetate ((11\beta)-21-(acetyloxy)-9-fluoro-11,17-dihydroxy-16-methylenepregna-1,4-diene-3,20-dione); fluprednisolone ((6\alpha, 11\beta)-6-fluoro-11,17,21-trihydroxypregna-1,4-diene-3,20-dione), or its 21-acetate form (C₂₃H₂₉FO₆); flurandrenolide ((6α,11β,16α)-6-fluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregn-4-ene-3,20-dione); fluticasone propionate ((6α,11β,16α,17α)-6,9-difluoro-11-hydroxy-16-methyl-3-oxo-17-(1oxopropoxy)androsta-1,4-diene-17-carbothioic acid S-(fluoromethyl) ester); formocortal ((11β,16α)-21-(acetyloxy)-3-(2-chloroethoxy)-9-fluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]-20-oxopregna-3,5-diene-6carboxaldehyde); halcinonide $((11\beta,16\alpha)-21-\text{chloro-}9-\text{fluoro-}11-\text{hydroxy-}16,17-[(1$ methyethylidene)bis(oxy)]pregn-4-ene-3,20-dione); halobetasol propionate (6α,11β,16β)-21-chloro-6,9-difluoro-11-hydroxy-16-methyl-17-(1-oxopropoxy)pregna-1,4-diene-3,20-dione); halometasone ((6α,11β,16α)-2-chloro-6,9difluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), monohydrate (C₂₂H₂₇ClF₂O₅•H₂O); halopredone acetate ((6β,11β)-17,21-bis(acetyloxy)-2-bromo-6,9-difluoro-11-hydroxypregna-1,4-diene-3,20-dione); hydrocortamate (N,N-diethylglycine (11\beta)-11,17-dihydroxy-3,20-dioxopregn-4-en-21-yl ester), or its hydrochloride form (C₂₇H₄₁NO₆•HCI); hydrocortisone ((11β)-11,17,21-trihydroxypregn-4-ene-3,20dione), its 21-acetate form $(C_{23}H_{32}O_6)$, its 17-butyrate form $(C_{25}H_{36}O_6)$, its 21-phosphate disodium salt form (C₂₁H₂₅Na₂O₈P), its 21-sodium succinate form (C₂₅H₃₃NaO₈), its 17-valerate form (C₂₆H₃₈O₆), or its cypionate form; loteprednol etabonate ((11β,17α,)-17-[(ethoxycarbonyl)oxy]-11-hydroxy-3-oxoandrosta-1,4-diene-17-carboxylic acid chloromethyl ester); mazipredone ((11β)-11,17-dihydroxy-21-(4-methyl-1-piperazinyl)pregna-1,4-diene-3,20dione), or its hydrochloride form (C₂₆H₃₈N₂O₄•HCl); medrysone ((6α,11β)-11-hydroxy-6-methylpregn-4-ene-3,20dione); meprednisone ((16β)-17,21-dihydroxy-16-methylpregna-1,4-diene-3,11,20-trione), or its 21-acetate form (C₂₄H₃₀O₆); methylprednisolone ((6α,11β)-11,17,21-trihydroxy-6-methylpregna-1,4-diene-3,20-dione; Sebek and Spero, US Patent No. 2,897,218, and Gould, US Patent No. 3,053,832), its 21-acetate form (C₂₄H₃₂O₆), its 21phosphate disodium salt form (C₂₂H₂₉Na₂O₈P), its 21-succinate sodium salt form (C₂₆H₃₃NaO₈), or its aceponate form $(C_{27}H_{36}O_7)$; mometasone furoate $((11\beta,16\alpha)-9,21$ -dichloro-17-[(2-furanylcarbonyl)oxy]-11-hydroxy-16methylpregna-1,4-diene-3,20-dione); paramethasone ((6α,11β,16α)-6-fluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C24H31FO6), its disodium phosphate form, or a mixture of its 21-acetate disodium phosphate form: prednicarbate ((11β)-17[(ethoxycarbonyl)oxy]-11-hydroxy-21-(1oxopropoxy)pregna-1,4-diene-3,20-dione);prednisolone ((11β)-11,17,21-trihydroxypregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₃H₃₀O₆), its 21-tert-butylacetate form (C₂₇H₃₈O₆; Sarrett), its 21-hydrogen succinate form (C₂₅H₃₂O₈), its 21-succinate sodium salt form (C₂₅H₃₁NaO₈), its 21-stearoylgylcolate form (C₄₁H₆₄O₈), its 21-msulfobenzoate sodium salt form (C₂₈H₃₁NaO₉S; (11β)-11,17-dihydroxy-21-[(3-sulfobenzoyl)oxy]pregna-1,4-diene-3,20-dione monosodium salt), or its 21-trimethylacetate form (C26H36O6); prednisolone 21-diethylaminoacetate (N,N-diethylglycine (11B)-11,17-dihydroxy-3,20-dioxopregna-1,4-dien-21-yl ester; British Patent No. 862,370), or form (C₂₇H₃₉NO₆•HCl); prednisolone sodium phosphate (11,17-dihydroxy-21-(phosphonooxy)pregna-1,4-diene-3,20-dione disodium salt); prednisone (17,21-dihydroxypregna-1,4-diene-3,11,20trione), or its 21-acetate form (C23H28O6); prednival ((11β)-11,21-dihydroxy-17-[(1-oxopentyl)oxy]pregna-1,4-

diene-3,20-dione;), or its 21-acetate form (C₂₈H₃₈O₇); prednylidene ((11β)-11,17,21-trihydroxy-16methylenepregna-1,4-diene-3,20-dione), or its 21-diethylaminoacetate hydrochloride form (C₂₈H₃₉NO₆•HCl); rimexolone ((11β,16α,17β)-11-hydroxy-16,17-dimethyl-17-(1-oxopropyl)androsta-1,4-dien-3-one); rofleponide ((22R)-6\(\text{0.9}\(\text{a}\)-\(\text{Diffluoro-}11\(\text{B}\),21-\(\text{dihydroxy-}16\(\text{a}\),17\(\text{a}\)-propylmethylenedioxypregn-4-ene-3,20-\(\text{dione}\)); ((11β, 17α)-17-(ethylthio)-9α-fluoro-11β-hydroxy-17-(methylthio) androsta-1,4-dien-3-one); tixocortol ((11β)-11,17-dihydroxy-21-mercaptopregn-4-ene-3,20-dione), or its 21-pivalate form $(C_{26}H_{38}O_5S; (11\beta)-21-[(2,2-1)])$ dimethyl-1-oxopropyl)thio]-11,17-dihydroxypregn-4-ene-3,20-dione); triamcinolone $((11\beta,16\alpha)-9$ -fluoro-11,16,17,21-tetrahydroxypregna-1,4-diene-3,20-dione), or its 16,21-diacetate form $(C_{25}H_{31}FO_8; (11\beta,16\alpha)-16,21$ bis(acetyloxy)-9-fluoro-11,17-dihydroxypregna-1,4-diene-3,20-dione); Triamcinolone acetonide ((11β,16α)-9fluoro-11,21-dihydroxy-16,17-[1-methylethylidenebis(oxy)]pregna-1,4-diene-3,20-dione), its 21-acetate crystal form, its 21-disodium phosphate form (C₂₄H₃₀FNa₂O₉P), or its 21-hemisuccinate form (C₂₈H₃₅FO₉); triamcinolone $((11\beta,16\alpha)-21-[3-(benzoylamino)-2-methyl-1-oxopropoxy]-9-fluoro-11-hydroxy-16,17-[(1-methyl-1-oxopropoxy]$ benetonide methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione); or triamcinolone hexacetonide; ((11β,16α)-21-(3,3dimethyl-1-oxobutoxy)-9-fluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione), analogues thereof, or pharmaceutically or veterinarily acceptable salts thereof.

- 35. The composition of claim 1, wherein the second agent comprises a glucocorticoid steroid selected from budesonide, testosterone, progesterone, estrogen, flunisolide, triamcinolone, beclomethasone, betamethasone, dexamethasone, fluticasone, methylprednisolone, prednisone, hydrocortisone, or mometasone.
- 36. The composition of claim 1, wherein the first active agent comprises a single stranded anti-sense DNA oligo.
- 37. The composition of claim 1, wherein the first active agent comprise(s) a double stranded DNA oligo.
- 38. The composition of claim 1, wherein the first active agent comprises a single stranded anti-sense RNA oligo(s).
- 39. The composition of claim 1, wherein the first active agent comprises a double stranded RNA oligo(s)
 - 40. The composition of claim 1, which is a systemic or topical formulation.
- 41. The formulation of claim 40, selected from oral, intrabuccal, intrapulmonary, rectal, intrauterine, intratumor, intracranial, nasal, intramuscular, subcutaneous, intravascular, intrathecal, inhalable, transdermal, intradermal, intracavitary, implantable, iontophoretic, ocular, vaginal, intraarticular, otical, intravenous, intramuscular, intraglandular, intraorgan, intralymphatic, implantable, slow release or enteric coating formulations.
- 42. The formulation of claim 41, which is an oral formulation, wherein the carrier is selected from solid or liquid carriers.
- 43. The formulation of claim 42, in the form of a powder, dragees, tablets, capsules, sprays, aerosols, solutions, suspensions and emulsions, or optionally oil-in-water or water-in-oil emulsions.
- 44. The formulation of claim 41, which is a topical formulation, in the form of cream, gel, ointment, spray, aerosol, patch, solution, suspension or emulsion.
- 45. The formulation of claim 41, which is an injectable formulation, in the form of an aqueous or alcoholic solution or suspension, an oily solution or suspension, or an oil-in-water or water-in-oil emulsion.
- 46. The formulation of claim 41, in the form of a rectal or vaginal formulation, optionally a suppository.
- 47. The formulation of claim 41, in the form of a transdermal formulation, wherein the carrier comprises an aqueous or alcoholic solution, an oily solution or suspension, or an oil-in-water or water-in-oil emulsion.
- 48. The formulation of claim 47, in the form of an iontophoretic transdermal formulation, wherein the carrier comprises an aqueous or alcoholic solution, an oily solution or suspension, or an oil-in-water or water-in-oil emulsion, and wherein the formulation further comprises a transdermal transport promoting agent.
 - 49. The formulation of claim 41, in the form of an implant, a capsule, a cartridge or a blister.
- 50. The formulation of claim 49, in the form of an aqueous or alcoholic solution or suspension, an oily solution or suspension, or an oil-in-water or water-in-oil emulsion.
 - 51. The formulation of claim 40, wherein the carrier comprises a hydrophobic carrier.

52. The formulation of claim 51, wherein the carrier comprises lipid vesicles, optionally liposomes; or particles, optionally microcrystals.

- 53. The formulation of claim 52, wherein the carrier comprises liposomes, and the liposomes comprise the active agent(s).
- 54. The formulation of claim 41, which is a respirable or inhalable formulation, optionally aerosolizable or sprayable of particle size about 0.05 to about 10 micron.
 - 55. The formulation of claim 54, having a particle size about 0.1 to about 5 micron.
- 56. The formulation of claim 41, which is a nasal or intrapulmonary formulation, optionally aerosolizable or sprayable of particle size about 8 to about 200 micron.
 - 57. The formulation of claim 56, of particle size about 10 to about 50 micron.
 - 58. The formulation of claim 41, in single or multiple unit form.
 - 59. The formulation of claim 41, in bulk.
- 60. A therapeutic or prophylactic kit, comprising a delivery device; in separate containers, the active agent(s) of claim 1; and instructions for adding a carrier and preparing a formulation and for use of the kit.
 - 61. The kit of claim 60, wherein the device delivers single metered doses of the formulation.
- 62. The kit of claim 60, wherein the formulation is a respirable formulation, and the delivery device comprises a nebulizer or a dry powder inhaler.
- 63. The kit of claim 62, wherein the device comprises a nebulizer or an insufflator and the formulation is provided in a piercable or openable capsule or cartridge.
- 64. The kit of claim 60, wherein the delivery device comprises a pressurized inhaler and the agent(s) is (are) provided as a suspension, solution or dry formulation of the active agent(s).
- 65. The kit of claim 60, further comprising, in a separate container, an agent selected from other therapeutic agents, surfactants, anti-oxidants, flavoring agents, fillers, volatile oils, dispersants, antioxidants, propellants, preservatives, buffering agents, RNA inactivating agents, cell-internalized or up-taken agents or coloring agents.
- 66. The kit of claim 60, comprising, in separate containers, one or more oligos, one or more AIS of formula (Ia), or (Ib) one or more surfactants, a carrier or diluent, optionally other therapeutic agents, and instructions for scheduling the administration of first and second agents.
- 67. The kit of claim 66, further comprising one or more ubiquinone(s), and instructions for scheduling the administration of first and second agents.
- 68. The kit of claim 60, wherein the device is a transdermal delivery device, and the kit further comprises a transdermal delivery agent, a transdermal carrier or diluent, and instructions for preparing and delivering a transdermal delivery formulation.
- 69. The kit of claim 60, wherein the device is an iontophoretic delivery device, and the kit further comprises an iontophoretic agent(s) and instructions for preparing and delivering an iontophoretic formulation.
- 70. The kit of claim 60, comprising, in separate containers, one or more oligo(s), one or more ubiquinone(s), one or more surfactants, a carrier or diluent, optionally other therapeutic agents, and instructions for scheduling the administration of first and second agents.
- 71. A method of preventing or treating a respiratory, lung or malignant disease or condition, comprising simultaneously, sequentially or separately administering to a subject in need of treatment, preventative, prophylactic or therapeutic amounts of the first and second active agents of claim 1.
- 72. The method of claim 71, wherein the oligo(s) and the AIS are administered in amounts effective for alleviating bronchoconstriction and/or lung inflammation or allergy(ies) and/or surfactant depletion or hyposecretion.
- 73. The method of claim 71, wherein the oligo(s) and the ubiquinone(s) are administered in amounts effective for alleviating bronchoconstriction, lung inflammation or allergies, or ubiquinone or lung surfactant depletion.
- 74. The method of claim 71, wherein one or more of the agent(s) is (are) administered as a nasal, inhalable, respirable or intrapulmonary composition(s) into the subject's respiratory system.
- 75. The method of claim 74, wherein one or more of the agents are administered intrapulmonarily or by inhalation.
 - 76. The method of claim 74, wherein the respirable or inhalable composition(s) comprise(s) particles

about 0.05 to about 10 micron in size.

77. The method of claim 74, wherein the nasal or intrapulmonary composition comprises particles about 8 to about 100 micron in diameter.

- 78. The method of claim 74, wherein the composition(s) is (are) administered as a respirable aerosol.
- 79. The method of claim 71, wherein the ubiquinone(s) is (are) administered orally, and the oligo(s) and the AIS are administered through the respiratory tract.
- 80. The method of claim 71, wherein the disease or condition is associated with pulmonary obstruction, bronchoconstriction, lung inflammation or allergy(ies), adenosine hypersensitivity, adenosine or adenosine receptor(s), hyperproduction, or surfactant or ubiquinone hypoproduction.
- 81. The method of claim 71, wherein the disease or condition comprises pulmonary vasoconstriction, respiratory inflammation or allergies, asthma, impeded respiration, respiratory distress syndrome (RDS), lung pain, cystic fibrosis (CF), allergic rhinitis (AR), apnea, pulmonary hypertension, emphysema, chronic obstructive pulmonary disease (COPD), pulmonary transplantation rejection, pulmonary fibrosis, pulmonary infections, bronchitis, or cancer.
- 82. The method of claim 71, wherein the disease or condition is associated with respiratory allergies, and the first active agent(s) is anti-sense to the initiation codon, the coding region, the 5'-end or the 3'-end genomic flanking regions, the 5' or 3' intron-exon junctions, or regions within 2 to 10 nucleotides of the junctions of at least one gene(s) encoding, or regulating expression of, an immunoglobulin(s), antibody(ies), or immunoglobulin or antibody receptors, or are anti-sense to the immunoglobulin(s), antibody(ies), or immunoglobulin or antibody receptor mRNA; MTAs of the oligo(s) or combinations thereof.
- 83. The method of claim 71, wherein the disease or condition is associated with a malignancy or cancer, and the oligo is anti-sense to the initiation codon, the coding region, the 5'-end or the 3'-end genomic flanking regions, the 5' or 3' intron-exon junctions, or regions within 2 to 10 nucleotides of the junctions of an oncogene(s) or at least one gene that regulates expression of, or encodes, a malignancy associated protein, or is(are) anti-sense to the oncogene or malignancy associated mRNA; MTAs or combinations thereof.
 - 84. The method of claim 71, wherein the composition is administered transdermally or systemically.
- 85. The method of claim 71, wherein the composition is administered orally, intracavitarily, intranasally, intraurethral, intracavernous, intraanally, intravaginally, intrauterally, intratumorously, intraplandularly, intracavernously, intracavern
 - 86. The method of claim 71, wherein the mammal(s) is a human or non-human mammal.
- 87. The method of claim 71, wherein the oligo(s) is (are) administered in amount of about 0.005 to about 150 mg/kg body weight.
 - 88. The method of claim 71, wherein the oligo(s) contain(s) up to about 15%A.
 - 89. The method of claim 71, wherein the oligo(s) is (are) substantially free of A.
- 90. The method of claim 71, wherein the target comprises transcription factors, stimulating or activating factors, interleukins, interleukin receptors, chemokines, chemokine receptors, endogenously produced specific or non-specific enzymes, immunoglobulins, antibody receptors, central nervous system (CNS) or peripheral nervous or non-nervous system receptors, CNS and peripheral nervous and non-nervous system peptide transmitters, adhesion molecules, defensines, growth factors, microbial targets, vasoactive peptides, peptide receptors or binding proteins, or malignancy associated proteins.
- 91. The method of claim71, wherein one or more As in the oligo(s) is(are) substituted by a universal base that comprise(s) a heteroaromatic base(s) that bind(s) to thymidine or uridine but has(have) less than about 0.3 of the adenosinebase agonist or antagonist activity at an adenosine A_1 , A_{2a} , A_{2b} or A_3 receptor.
- 92. The method of claim 91, wherein the heteroaromatic base(s) comprise(s) pyrimidines or purines, which may be substituted by O, halo, NH₂, SH, SO, SO₂, SO₃, COOH, branched or fused primary or secondary amino, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, alkoxy, alkenoxy, acyl, cycloacyl, arylacyl, alkynoxy, cycloalkoxy, aroyl, arylsulfoxyl, halocycloalkyl, alkylcycloalkyl, alkenylcycloalkyl, alkenylcycloalkyl, alkynylcycloalkyl, alkynylcycloalkyl, alkenylaryl, alkynylaryl, arylalkyl, arylalkenyl, arylalkynyl, arylcycloalkyl, all of which may be further substituted by O, halo, NH₂, primary, secondary or tertiary amine, SH, SO, SO₂, SO₃,

cycloalkyl, heterocycloalkyl or heteroaryl.

93. The method of claim 91, wherein the purines are substituted at positions 1, 2, 3, 6, and/or 8, the pyrimidines are substituted at positions 2, 3, 4, 5 and/or 6 and have the chemical formula

$$\begin{array}{c} R_1 \\ R_2 \\ N_1 \\ S_2 \\ S_3 \\ R_4 \end{array}$$

$$\begin{array}{c} R_1 \\ R_2 \\ N_1 \\ S_3 \\ S_4 \\ S_7 \\ S_8 \\ S_9 \\ N_2 \\ S_9 \\ N_3 \\ S_9 \\ N_3 \\ S_9 \\ N_2 \\ S_9 \\ N_3 \\ S_9 \\ N_3 \\ S_9 \\ N_3 \\ N_4 \\ N_2 \\ N_3 \\ N_3 \\ N_3 \\ N_4 \\ N_3 \\ N_3 \\ N_4 \\ N_3 \\ N_4 \\ N_5 \\ N_5$$

pyrimidines or purines

wherein R¹, R², R³, R⁴ and R⁵ are independently H, alkyl, alkenyl or alkynyl and R³ is H, aryl, dicycloalkyl, dicycloalkynyl, cycloalkynyl, cycloalkynyl, O-cycloalkynyl, O-cycloalkynyl, O-cycloalkynyl, O-cycloalkynyl, NH₂-alkylamino-ketoxyalkyloxy-aryl, or mono or dialkylaminoalkyl-N-alkylamino-SO₂aryl, and R⁴ and R⁵ are independently R¹ and together are R³, and the pyrimidines and purines optionally comprise theophylline, caffeine, dyphylline, etophylline, acephylline piperazine, bamifylline, enprofylline or xanthine.

- 94. The method of claim 93, wherein the universal base(s) comprise(s) 3-nitropyrrole-2'-deoxynucleoside, 5-nitro-indole, 2-deoxyribosyl-(5-nitroindole), 2-deoxyribofuranosyl-(5-nitroindole), 2'-deoxynosine, 2'-deoxynebularine, 6H, 8H-3,4-dihydropyrimido [4,5-c] oxazine-7-one, or 2-amino-6-methoxyaminopurine.
- 95. The method of claim 71, wherein the second active agent comprises an AIS of formula (Ia) selected from dehydroepiandrosterone, 16-alphabromodehydroepiandrosterone, 16-alphabromodehydroepiandrosterone, etiocholanolone, dehydroepiandrosterone sulfate or other pharmaceutically or veterinarily acceptable salts thereof.
- 96. The method of claim 71, wherein the second active agent comprises an AIS formula (Ib), wherein R¹⁵ and R¹⁶ together are =O; R⁵ is —OH; R⁵ is —OSO₂R²⁰; R¹⁵ and R²⁰ together is H; or pharmaceutically or veterinarily acceptable salts thereof.
- 97. The method of claim 71, wherein the active agents are present in an amount of about 0.01 to about 99.99 w/w of the composition.
- The method of claim 71, wherein the second active agent comprises an AIS selected from 21acetoxypregnenolone ((3β)-21-(acetyloxy)-3-hydroxypregn-5-en-20-one); alclometasone ((7α, 11β, 16α)-7-Chloro-11, 17, 21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its 17,21-dipropionate form (C₂₈H₃₇ClO₇); algestone ((16 α)-16,17-dihydroxypregn-4-ene-3,20-dione), its cyclic acetal with acetone form ($C_{24}H_{34}O_4$), or its 16 α -methyl ether form ($C_{22}H_{32}O_4$); amcinonide ((11 β , 16 α)-21-(acetyloxy)-16,17-[cyclopentylidenebis(oxy)]-9fluoro-11-hydroxypregna-1,4-di-ene-3,20-dione); beclomethasone ((11\beta,16\beta)-9-chloro-11,17,21-trihydroxy-16methylpregna-1,4-diene-3,20-dione), its dipropionate form (C₂₈H₃₇ClO₇), or its monopropionate form; betamethasone ((11β, 16β)-9-fluoro-11, 17, 21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₄H₃₁FO₆), its 21-adamantoate form (C₃₃H₄₃FO₆), its 17-benzoate form (C₂₀H₃₃FO₆), its 17, 21-dipropionate form (C₂₈H₃₇FO₇), its 17-valerate form (C₂₇H₃₇FO₆), or its 21-phospate disodium salt form (C₂₂H₂₈FNa₂O₈P); budesonide ((11β, 16α)-16,17-[butylidenebis(oxy)]-11, 21-dihydropregna-1,4-diene-3,20-dione); chloroprednisone ((6α)-chloro-17,21-dihydroxypregna-1,4-diene-3,11,20-trione), or its 21-acetate from (C₂₁H₂₇ClO₆); ciclesonide; clobetasol ((11B,16B)-21-chloro-9-fluoro-11,17-dihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its 17propionate form (C₂₅H₃₂ClFO₅); clobetasone ((16β)-21-chloro-9-fluoro-17-hydroxy-16-methylpregna-1,4-diene-3,11,20-trione), or its 17-butyrate form (C₂₆H₃₂ClFO₅); clocortolone ((6α,11β,16α)-9-chloro-6-fluoro-11,21dihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₄H₃₀ClFO₅), or its 21-pivalate form $(C_{27}H_{36}CIFO_5);$ cloprednol $((11\beta)-6-\text{chloro}-11,17,21-\text{trihydroxypregna}-1,4,6-\text{triene}-3,20-\text{dione});$

(phosphoric acid 3-chloro-4-methyl-2-oxo-2H-1-benzopyran-7-yl diethyl ester); cortisone (17,21-dihydroxypregn-4ene-3,11,20-trione), its 21-acetate form (C₂₃H₃₀O₆), or its 21-cyclopentanepropionate form (C₂₉H₄₀O₆); cortivazol ((11β,16α)-21-(acetyloxy)-11,17-dihydroxy-6,16-dimethyl-2'-phenyl-2'H-pregna-2,4,6-trieno[3,2-c]pyrazol-20deflazacort ((11\beta,16\beta)-21-(acetyloxy)-11-hydroxy-2'-methyl-5'H-pregna-1,4-dieno[17,16-d]oxazole-3,20dione); desonide ((11β,16α)11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione); desoximetasone ((11β,16α)-9-fluoro-11, 21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione); dexamethasone (((11β,16α)-9-fluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₄H₃₁FO₆), its 21-(3,3-dimethylbutyrate) form (C₂₈H₃₉FO₆; Chemerda et al., US Patent No. 2,939,873), its 21diethylaminoacetate form (C₂₈H₄₁FNO₆), its 21-isonicotinate form (C₂₈H₄₁FNO₆), its 17,21-dipropionate form $(C_{28}H_{37}FNO_6)$, or its 21-palmitate form $(C_{38}H_{59}FO_6)$; diflorasone $((6\alpha,11\beta,16\beta)-6,9$ -difluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its diacetate form (C₂₆H₃₂F₂O₂); diffucortolone ((6α,11β,16α)-6,9difluoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its 21-valerate form $(C_{27}H_{36}F_2O_5)$; difluprednate ((6α,11β)-21-(acetyloxy)-6,9-difluoro-11-hydroxy-17-(1-oxobutoxy)pregna-1,4-diene-3,20-dione); enoxolone ((3β,20β)-3-hydroxy-11-oxoolean-12-en-29-oic acid), or its 18α-hydrogen form; fluazacort ((11β,16β)-21-(acetyloxy)-9-fluoro-11-hydroxy-2'-methyl-5'H-pregna-1,4-dieno[17,16-d]oxazole-3,20-dione); $((6\alpha,11\beta,16\alpha)-9,11-dichlro-6-fluoro-21-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]$ -pregna-1,4-diene-3,20dione); flumethasone ((6α,11β,16α)-6,9-difluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form $(C_{24}H_{30}F_2O_6)$, or its 21-pivalate form $(C_{27}H_{36}F_2O_6)$; flunisolide $((6\alpha,11\beta,16\alpha)-6$ -fluoro-11,21dihydroxy-16,17-[(1-methylethylidene) bis(oxy)]pregna-1,4-diene-3,20-dione), or its 21-acetate form (C₂₆H₃₃FO₇); fluocinolone acetate ((6α,11β,16α)-6,9-difluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]-pregna-1,4diene-3,20-dione); fluocinonide $((6\alpha,11\beta,16\alpha)-21-(acetyloxy)-6,9-difluoro-11-hydroxy-16,17-[(1$ methylethylidene)bis(oxy)]-pregna-1,4-diene-3,20-dione); fluocortin butyl ((6α,11β,16α)-6-fluoro-11-hydroxy-16methyl-3,20-dioxopregna-1,4-dien-21-oic acid butyl ester); fluocortolone ((6α,11β,16α)-6-fluoro-11,21-dihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₄H₃₁FO₅), its 21-hexanoate form (C₂₈H₃₉FO₅), or its 21-pivalate form (C₂₂H₃₇FO₅); fluorometholone ((6α,11β)-9-fluoro-11,17-dihydroxy-6-methylpregana-1,4-diene-3,20-dione), or its 17-acetate form $(C_{24}H_{31}FO_5)$; fluperolone acetate $([11\beta,17\alpha,17(S)]-17-[2-(acetyloxy)-1$ oxopropyl]-9-fluoro-11,17-dihydroxyandrosta-1,4-dien-3-one); fluprednidene acetate ((11\beta)-21-(acetyloxy)-9fluoro-11,17-dihydroxy-16-methylenepregna-1,4-diene-3,20-dione); fluprednisolone ((6α,11β)-6-fluoro-11,17,21trihydroxypregna-1,4-diene-3,20-dione), or its 21-acetate form $(C_{23}H_{20}FO_6)$; flurandrenolide $((6\alpha,11\beta,16\alpha)-6$ fluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]pregn-4-ene-3,20-dione); fluticasone ((6α,11β,16α,17α)-6,9-difluoro-11-hydroxy-16-methyl-3-oxo-17-(1-oxopropoxy)androsta-1,4-diene-17-carbothioic acid S-(fluoromethyl) ester); formocortal ((11β,16α)-21-(acetyloxy)-3-(2-chloroethoxy)-9-fluoro-11-hydroxy-16,17-[(1-methylethylidene)bis(oxy)]-20-oxopregna-3,5-diene-6-carboxaldehyde); halcinonide ((11β,16α)-21-chloro-9fluoro-11-hydroxy-16,17-[(1-methyethylidene)bis(oxy)]pregn-4-ene-3,20-dione); halobetasol propionate (6α,11β,16β)-21-chloro-6,9-difluoro-11-hydroxy-16-methyl-17-(1-oxopropoxy)pregna-1,4-diene-3,20-dione); halometasone ((6α,11β,16α)-2-chloro-6,9-difluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), or its monohydrate form (C22H27ClF2O5•H2O); halopredone acetate ((6B,11B)-17,21-bis(acetyloxy)-2-bromo-6,9difluoro-11-hydroxypregna-1,4-diene-3,20-dione); hydrocortamate (N,N-diethylglycine (11β)-11,17-dihydroxy-3,20-dioxopregn-4-en-21-yl ester), or its hydrochloride form (C₂₇H₄₁NO₆•HCl); hydrocortisone ((11β)-11,17,21trihydroxypregn-4-ene-3,20-dione), its 21-acetate form (C₂₃H₃₂O₆), its 17-butyrate form (C₂₅H₃₆O₆), its 21phosphate disodium salt form (C₂₁H₂₉Na₂O₈P), its 21-sodium succinate form (C₂₅H₃₃NaO₈), its 17-valerate form (C₂₆H₃₈O₆), or its cypionate form; loteprednol etabonate ((11β,17α,)-17-[(ethoxycarbonyl)oxy]-11-hydroxy-3oxoandrosta-1,4-diene-17-carboxylic acid chloromethyl ester); mazipredone ((11β)-11,17-dihydroxy-21-(4-methyl-1-piperazinyl)pregna-1,4-diene-3,20-dione), or its hydrochloride form (C₂₆H₃₈N₂O₄•HCl); medrysone ((6α,11β)-11hydroxy-6-methylpregn-4-ene-3,20-dione); meprednisone ((16\beta)-17,21-dihydroxy-16-methylpregna-1,4-diene-3,11,20-trione), or its 21-acetate form $(C_{24}H_{30}O_6)$; methylprednisolone $((6\alpha,11\beta)-11,17,21-trihydroxy-6$ methylpregna-1,4-diene-3,20-dione; Sebek and Spero, US Patent No. 2,897,218, and Gould, US Patent No. 3,053,832), its 21-acetate form (C₂₄H₃₂O₆), its 21-phosphate disodium salt form (C₂₂H₂₉Na₂O₈P), its 21-succinate sodium salt form (C₂₆H₃₃NaO₈), or its aceponate form (C₂₇H₃₆O₇); mometasone furoate ((11β,16α)-9,21-dichloro-17-[(2-furanylcarbonyl)oxy]-11-hydroxy-16-methylpregna-1,4-diene-3,20-dione); paramethasone ((6α,11β,16α)-6-

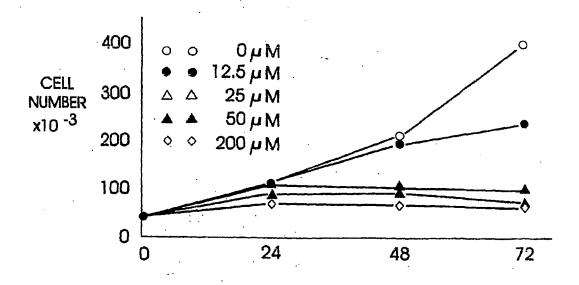
fluoro-11,17,21-trihydroxy-16-methylpregna-1,4-diene-3,20-dione), its 21-acetate form (C24H31FO6), its disodium phosphate form, or a mixture of its 21-acetate and disodium phosphate form; prednicarbate ((11\beta)-17[(ethoxycarbonyl)oxy]-11-hydroxy-21-(1-oxopropoxy)pregna-1,4-diene-3,20-dione); prednisolone ((11B)-11,17,21-trihydroxypregna-1,4-diene-3,20-dione), its 21-acetate form (C₂₃H₃₀O₆), its 21-tert-butylacetate form (C₂₇H₃₈O₆; Sarrett), its 21-hydrogen succinate form (C₂₅H₃₂O₈), its 21-succinate sodium salt form (C₂₅H₃₁NaO₈), its 21-stearoylgylcolate form (C₄₁H₆₄O₈), its 21-m-sulfobenzoate sodium salt form (C₂₈H₃₁NaO₉S; (11β)-11,17dihydroxy-21-[(3-sulfobenzoyl)oxy]pregna-1,4-diene-3,20-dione monosodium salt), or its 21-trimethylacetate form (C₂₆H₃₆O₆); prednisolone 21-diethylaminoacetate (N,N-diethylglycine (11β)-11,17-dihydroxy-3,20-dioxopregna-1,4-dien-21-yl ester; British Patent No. 862,370), or its hydrochloride form (C₂₇H₃₉NO₆•HCl); prednisolone sodium phosphate (11,17-dihydroxy-21-(phosphonooxy)pregna-1,4-diene-3,20-dione disodium salt); prednisone (17,21dihydroxypregna-1,4-diene-3,11,20-trione), or its 21-acetate form (C₂₃H₂₈O₆); prednival ((11β)-11,21-dihydroxy-17-[(1-oxopentyl)oxy]pregna-1,4-diene-3,20-dione;), or its 21-acetate form (C₂₈H₃₈O₇); prednylidene ((11β)-11,17,21-trihydroxy-16-methylenepregna-1,4-diene-3,20-dione), or its 21-diethylaminoacetate hydrochloride form (C₂₈H₃₉NO₆•HCl); rimexolone ((11β,16α,17β)-11-hydroxy-16,17-dimethyl-17-(1-oxopropyl)androsta-1,4-dien-3-((22R)-6α,9α-Difluoro-11β,21-dihydroxy-16α,17α-propylmethylenedioxypregn-4-ene-3,20dione); tipredane ((11β, 17α)-17-(ethylthio)-9α-fluoro-11β-hydroxy-17-(methylthio) androsta-1,4-dien-3-one); tixocortol ((11β)-11,17-dihydroxy-21-mercaptopregn-4-ene-3,20-dione), or its 21-pivalate form (C₂₆H₃₈O₅S; (11β)-21-[(2,2-dimethyl-1-oxopropyl)thio]-11,17-dihydroxypregn-4-ene-3,20-dione); triamcinolone ((11β,16α)-9-fluoro-11,16,17,21-tetrahydroxypregna-1,4-diene-3,20-dione), or its 16,21-diacetate form (C₂₅H₃₁FO₈; (11β,16α)-16,21bis(acetyloxy)-9-fluoro-11,17-dihydroxypregna-1,4-diene-3,20-dione); Triamcinolone acetonide ((11β,16α)-9fluoro-11,21-dihydroxy-16,17-[1-methylethylidenebis(oxy)]pregna-1,4-diene-3,20-dione), its 21-acetate crystal form, its 21-disodium phosphate form (C₂₄H₃₀FNa₂O₉P), or its 21-hemisuccinate form (C₂₈H₃₅FO₉); triamcinolone ((11β,16α)-21-[3-(benzoylamino)-2-methyl-1-oxopropoxy]-9-fluoro-11-hydroxy-16,17-[(1methylethylidene)bis(oxy)]pregna-1,4-diene-3,20-dione); or triamcinolone hexacetonide;((11β,16α)-21-(3,3dimethyl-1-oxobutoxy)-9-fluoro-11-hydroxy-16,17-[(1-methylethylidene) bis(oxy)]pregna-1,4-diene-3,20-dione), or pharmaceutically or veterinarily acceptable salts thereof.

- 99. The method of claim 71, wherein the second active agent comprises an AIS selected from budesonide, testosterone, progesterone, estrogen, flunisolide, triamcinolone, beclomethasone, betamethasone, dexamethasone, fluticasone, methylprednisolone, prednisone, hydrocortisone, or mometasone.
- 100. A method of enhancing the prophyllactic or therapeutic respiratory effect of an anti-inflammatory steroid in a subject, comprising administering to the subject, in addition to the AIS, the oligonucleotide(s) (oligo(s)) of claim 1, the AIS and the oligo(s) being administered in amounts effective for reducing or depleting levels of, or reducing sensitivity to, adenosine, reducing levels of adenosine receptors, producing bronchodilation, increasing levels of ubiquinone or lung surfactant in a subject's tissue (s), or treating bronchoconstriction, lung inflammation or lung allergies or a respiratory or lung disease or condition.
- 101. The method of claim 100, further administering to the subject a ubiquinone of the chemical formula.
- 102. The method of claim 100, wherein the steroid comprises budesonide, testosterone, progesterone, estrogen, flunisolide, triamcinolone, beclomethasone, betamethasone, dexamethasone, fluticasone, methylprednisolone, prednisone, hydrocortisone, or mometasone
- 103. The method of claim 100, wherein the oligo(s) is anti-sense to the initiation codon, the coding region, the 5'-end or the 3'-end genomic flanking regions, the 5' or 3' intron-exon junctions, and regions within 2 to 10 nucleotides of the junctions of at least one oncogene(s) and a gene(s) enclding or regulating expression of a target polypeptide(s) associated with lung airway dysfunction, or anti-sense to the corresponding mRNA and the polypeptide mRNA; combinations, MTAs or mixtures of the oligos; the polypeptides comprising peptide factors and transmitters, antibodies, cytokines or chemokines, enzymes, binding proteins, adhesion molecules, their receptors, or malignancy associated proteins.
- 104. The method of claim 100, further comprising administering to the subject other therapeutic or bioactive agents selected from analgesics, pre-menstrual medications, menopausal agents, anti-aging agents, anti-anxyolytic agents, mood disorder agents, anti-depressants, anti-bipolar mood agents, anti-schyzophrenic agents, anti-cancer agents, alkaloids, blood pressure controlling agents, muscle relaxants, steroids, soporific agents, anti-

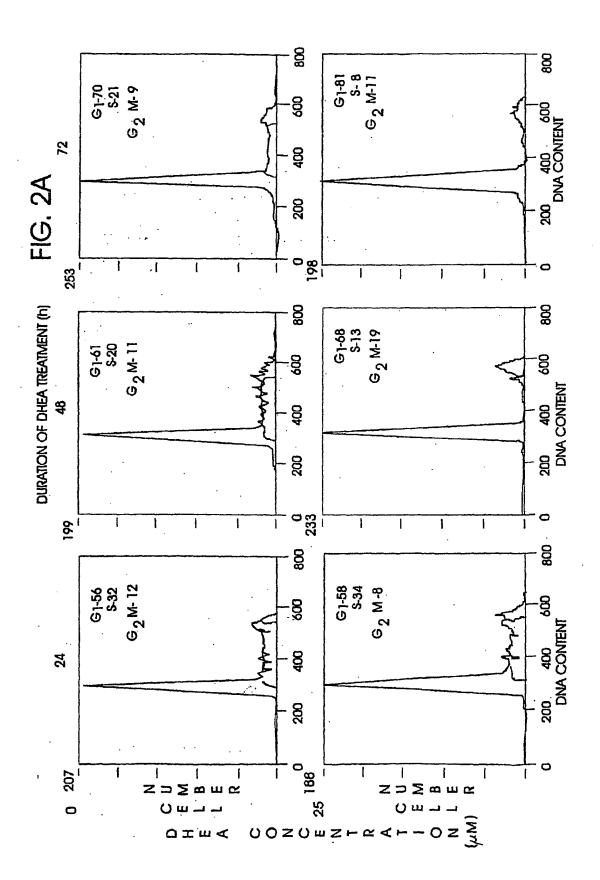
ischemic agents, anti-arrythmic agents, contraceptives, vitamins, minerals, tranquilizers, neurotransmitter regulating agents, wound healing agents, anti-angyogenic agents, cytokines, growth factors, B-adrenergic receptor agonists, anti-metastatic agents, antacids, anti-histaminic agents, anti-bacterial agents, anti-viral agents, anti-gas agents, appetite suppressants, sun screens, emollients, skin temperature lowering products, radioactive phosphorescent or fluorescent contrast diagnostic or imaging agents, libido altering agents, bile acids, laxatives, anti-diarrheic agents, skin renewal agents, hair growth agents, analgesics, pre-menstrual medications, anti-menopausal agents, hormones, anti-aging agents, anti-anxiolytic agents, nociceptic agents, mood disorder agents, anti-depressants, anti-bipolar mood agents, anti-schizophrenic agents, anti-cancer agents, alkaloids, blood pressure controlling agents, other hormones, other anti-inflammatory agents, agents for treating arthritis, burns, wounds, chronic bronchitis, chronic obstructive pulmonary disease (COPD), inflammatory bowel disease such as Crohn's disease, ulcerative colitis, autoimmune disease, or lupus erythematosus, muscle relaxants, soporific agents, anti-ischemic agents, antiarrhythmic agents, contraceptives, vitamins, minerals, tranquilizers, neurotransmitter regulating agents, wound and burn healing agents, anti-angiogenic agents, cytokines, growth factors, anti-metastatic agents, antacids, antihistaminic agents, anti-bacterial agents, anti-viral agents, anti-gas agents, agents for reperfusion injury, counteracting appetite suppressants, sun screens, emollients, skin temperature lowering products, radioactive phosphorescent or fluorescent contrast diagnostic or imaging agents, libido altering agents, bile acids, laxatives, anti-diarrheic agents or skin renewal agents.

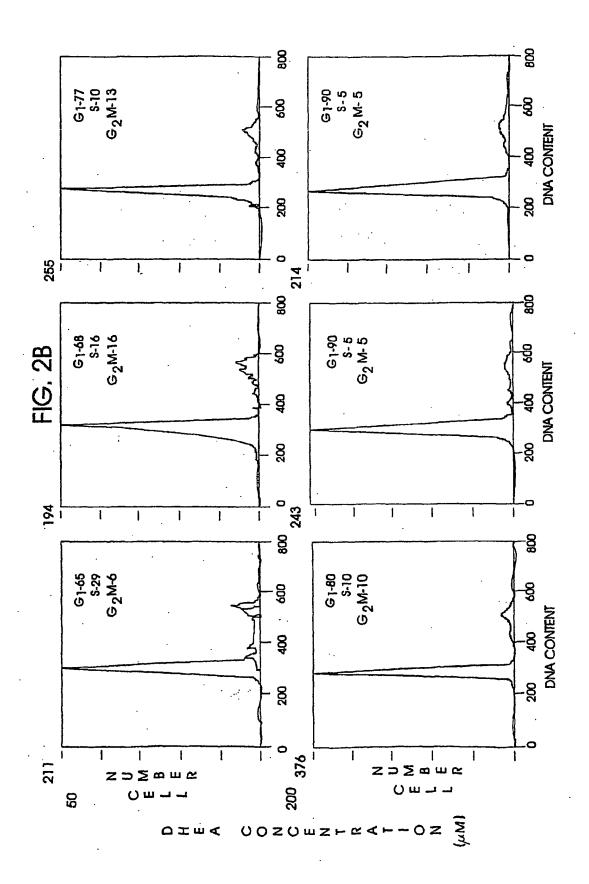
- 105. The method of claim 100, wherein the oligo(s) and/or the steroid(s) is(are) administered with surfactant protein A, surfactant protein B, surfactant protein C, surfactant protein D and surfactant Protein E, disaturated phosphatidyl choline (other than dipalmitoyl), dipalmitoyl phosphatidyl choline, phosphatidyl choline, phosphatidyl glycerol, phosphatidyl inositol, phosphatidyl ethanolamine, phosphatidyl serine; phosphatidic acid, ubiquinones, lysophosphatidyl ethanolamine, lysophosphatidyl choline, palmitoyl- lysophosphatidyl choline, dehydroxyacetone, dolichols, sulfatidic acid, glycerol-3-phosphate, dihydroxyacetone phosphate, glycerol, glycero-3-phosphocholine, dihydroxy acetone, palmitate, cytidine diphosphate (CDP) diacyl glycerol, CDP choline, choline, choline phosphate; natural or artificial lamellar bodies as carrier surfactant vehicles, omega-3 fatty acids, polyenic acid, polyenoic acid, lecithin, palmitinic acid, non-ionic block copolymers of ethylene or propylene oxides, polyoxypropylene, monomeric or polymeric, polyoxyethylene, monomeric and polymeric, poly (vinyl amine) with dextran and/or alkanoyl side chains, Brij 35, Triton X-100 or synthetic surfactants ALEC, Exosurf, Survan or Atovaquone.
 - 106. The method of claim 100, wherein the AIS comprises a steroid of chemical formula (Ia) or (Ib).
- 107. The method of claim 106, wherein the AIS is selected from budesonide, testosterone, progesterone, fluticasone, beclomethasone, prednisone, momethasone, estrogen, dexamethasone, hydrocortisone, triamcinolone, flunisolide, methylprednisolone prednisone, hydrocortisone, or analogues thereof.
- 108. The method of claim 100, wherein the first and second active agents are administered systemically or topically.
- 109. The method of claim 100, wherein the first and second active agents are administered as an oral, intrabuccal, intrapulmonary, rectal, intrauterine, intratumor, intracranial, nasal, intramuscular, subcutaneous, intravascular, intrathecal, inhalable, transdermal, intradermal, intracavitary, implantable, iontophoretic, ocular, vaginal, intraarticular, otical, intravenous, intramuscular, intraglandular, intraorgan, intralymphatic, implantable, slow release or enteric coating formulation.
 - 110. The method of claim 101, wherein the ubiquinone is administeredorally.
- 107. The method of claim 106, wherein the oligo(s) and the AIS is(are) administered intrapulmonarily, into the respiration, nasally, or by inhalation.
- 108. The method of claim 106, wherein the oligo(s) or the AIS is(are) administered as a respirable or inhalable formulation, optionally an aerosol of particle size about 0.05 to about 10 micron.
- 109. The method of claim 107, wherein the formulation comprises an oligo(s) or AIS of particle size about 0.1 micron to about 5 micron.
- 110. The method of claim 106, wherein the oligo(s) or the AIS is(are) administered nasallym intrapulmonarily, optionally an aerosol of particle size about 8 to about 100 micron.
- 111. The method of claim 109, wherein the oligo(s) or the AIS has(have) a particle size about 10 to about 50 micron.

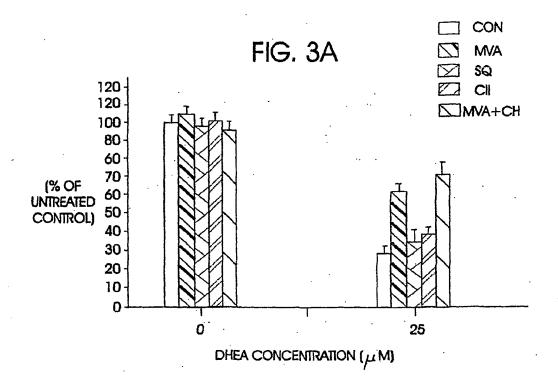
FIG. 1.



DURATION OF DHEA TREATMENT (h)







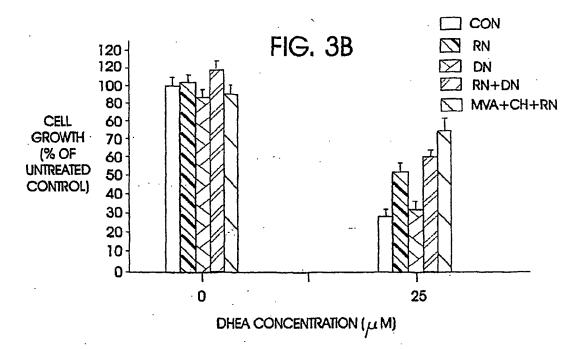
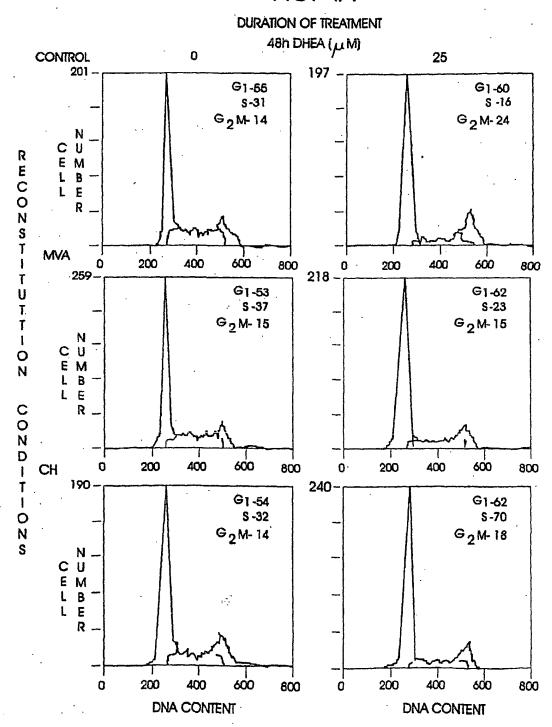


FIG. 4A



PCT/US02/13135

FIG. 4B

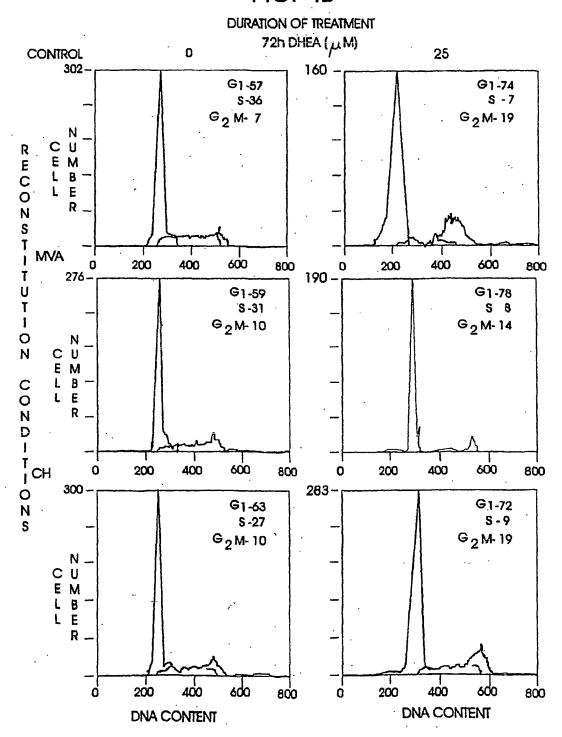


FIG. 4C

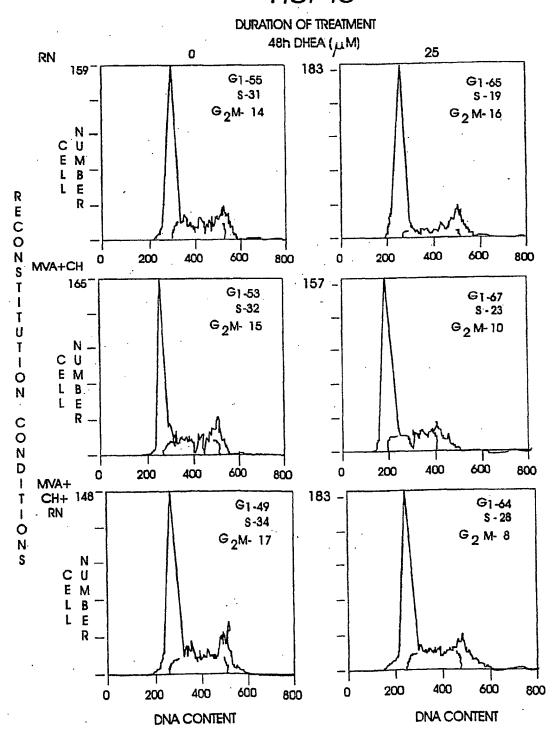


FIG. 4D

